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# Enviropreneurial Management An effective approach to cope with the ecological challenge

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**Enviropreneurial Management**  
**An effective approach to cope with the**  
**ecological challenge**

by

**Ljiljana Mitic**

Dipl.-Betriebswirt, B.A.(Hons)

A thesis submitted to the University of Plymouth in partial  
fulfilment for the degree of

**DOCTOR OF PHILOSOPHY**

Department of Social Science  
Plymouth Business School

August 2000

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This study was financed by the researcher.

Signed

Liljana Gitić

Date

10. 11. 00

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## **ABSTRACT**

### **Enviropreneurial Management An effective approach to cope with the ecological challenge**

**by  
Ljiljana Mitic**

Humankind is the major force influencing our planet earth. Irreversible environmental degradation are a widespread problem. Atmospheric changes, worsening climate, ozone depletion, etc. is accompanying our daily life. From the ecological perspective the future of the 21<sup>st</sup> century is endangered. A change of consumption pattern, material thinking, lifestyles have to change fundamentally. It may even require to break with 'business-as-usual'.

In the age of continuously and rapidly changing competitive environments, companies are increasingly forced to be highly flexible and responsive to changes having an impact on their competitiveness or even affecting the firm's viability. "Entrepreneurship" is an emerging practice, which involves the application of an entrepreneurial spirit to established businesses. The management style is seen to embody the appropriate characteristics for surviving or even growing in a constantly changing environment.

A major objective of this research is to determine whether an entrepreneurial management style has an impact on the ecological approach a firm may adopt. For this purpose a mail survey of 500 German firms across all industries was undertaken in the first phase. The aim is to further determine whether firms adopting a proactive ecological approach meet the ecological challenge in a strategic manner. In order to achieve this objective a case study approach was chosen in the second phase based on ten interviews conducted in the food & allied industry.

The survey aimed at examining the management style, organisational structure and the business environment of 212 firms to determine firms' nature and style of strategic response to their business environment. Moreover, firms' ecological orientation and ecological environment is measured to determine to which degree firms are proactively oriented. Based on this, the relationship between the management style adopted by firms and the ecological approach is analysed. The results of the survey suggest that firms' response to the ecological issue is strongly influenced by the way in which they respond to business challenges or changes in the business environment.

Furthermore, the case study aimed at identifying the degree to which firms integrate the ecological issue into their strategic behaviour. Another aim is to analyse if the relationship between management style and ecological approach can be confirmed further, thus supporting the results of the first phase. The results indicate that a proactive ecological approach demands a comprehensive way of realisation. The ecological issue should be an integral part of the firms' strategic management process and be approached in a strategic manner.

Thus, the research project strongly suggests that an entrepreneurial style supported by organic organisational structures is seen as the appropriate approach to follow the path of an ecologically sustainable future. An entrepreneurial approach will enable firms to be innovative and thus inducing fundamental changes with regard to ecological matters. Far-reaching environmental improvements are needed to take a large step towards a sustainable society. An entrepreneurial environmental approach enables firms to anticipate and give fresh impetus to the ecological development. However, it has to be kept in mind that all forces upsetting the equilibrium of the global system have to be handled sustainably.

## I. Introduction

*"Everything that is wise has been thought already;  
we can only try to think it once more."*

Wolfgang von Goethe

The objective of economic growth and technical progress is increasingly seen as being critical. It has been realised that intensified industrial production and an intact environment do not actually fit together. Over the years it became more and more visible that economic growth, enhancing the wealth of nations, increasingly affects the natural environment.

The 'Spaceship Earth' is endangered. We face bleak ecological prospects. Some authors forecast an ecological collapse by the 21<sup>st</sup> century. One may say that this is a future problem for which we do not have to worry about at present. However, our generation has the responsibility to behave in a way not to compromise the ability of future generations to meet their needs.

This request is also one of the core demands outlined by the United Nations (UNCED) in the Brundtland Report. The term 'sustainable development' emerged, demanding a development that *'meets the need of the present without compromising the ability of future generations to meet their own needs'*. As pointed out by Gore (1992) the economy will not be able to increase real growth by destroying the natural wealth. Hence, economy and ecology have to go hand in hand, maintaining an equilibrium. It can be argued that there is still a long way to go before we can say that businesses and industries are sustainable. The objective of sustainable development is more than coping with ecological problems it is also about global equity, social justice and futurity. Therefore, there is an increasing and necessary demand to shift from solely covering environmental protection to a fundamental rethinking of how one behaves and consequently how businesses and industries work. A

commitment to go through radical change is inalienable. Sustainable development represents a complex issue. Several authors argue that 'sustainable development' requires a fundamental change in attitude and values of consumers, companies and governments. Moreover, Welford (1997) states that ourselves are a major part of the problem and even though we are aware of the problems, we do not get moved, as it doesn't touch us deeply enough.

This research project concentrates on the business response to specific ecological matters. Nowadays, there are hardly any areas where environmental protection can be ignored, especially in the industry. Hart (1997) points out that even though the challenge is a matter of developing a sustainable global economy, firms are *'the only organisations with the resources, technology, global reach and ultimately the motivation to achieve sustainability'*. In the mid- and long term firms can not ignore the 'necessity' of respecting ecology as our major source for all living beings on the planet. The natural environment has to be regarded as a major stakeholder. Due to the complexity of the natural environment and the reach of the negative and threatening effects on live, there is no doubt that a fundamental and radical change is necessary.

Among the management theories a new school of thought emerged focusing on the entrepreneurial behaviour of established businesses. The complexity and dynamic of markets increase, environments become increasingly unpredictable and unstable, requiring a different approach of strategic management. Firms are forced to be highly responsive, flexible and adaptive to changes and anticipate changes and consequently actively create the future.

The major objective of this research is to analyse the nature and style of firms' strategic response and the possible impact on the ecological approach. The hypothesis is, that an entrepreneurial management style supported by an

organic organisational environment may give fresh impetus to the ecological development. Furthermore, the research aims at identifying the degree to which ecological activities are integrated into the strategic approach of firms, thus determining if firms approach the ecological challenge in a strategic manner. To achieve this objective two research phases have been conducted among German firms.

The research phases included a mail survey among 500 firms and a case study. An increasingly growing ecological awareness can be observed in Germany. The growing amount of discussions among the German public regarding "environmental" policies, and the continuous intensification of government regulations concerning environmental protection have an increasing impact on German firms.

*Chapter 2* provides a historic review of the literature on strategic management. Several views and requirements are discussed. The second part of the chapter outlines the necessary strategic management process to be pursued by firms. Challenging environments demand a different approach to strategic behaviour. Therefore, the third part of the chapter reviews the demand for 'Entrepreneurship' requiring firms to be more creative, innovative, proactive and risk-taking. The fourth part of the chapter provides an examination of social responsibility and ethical behaviour which has increased in strategic importance. Firms need to accept the responsibility for society. The ecological issue is one of the major challenges of social responsibility.

*Chapter 3* provides a general overview of the ecological situation and outlines the major developments and impacts on firms by their stakeholder environment. It can be argued that the influence of stakeholders is increasing. Moreover, government plays an important role. The 90s are marked by the development of environmental standards and an increasing debate on the

contribution of business to the environmental development. The second part of the chapter reviews the concept of 'sustainable development'. Sustainable development is about ecological, social and economic issues, which should be approached in an integrated manner.

*Chapter 4* outlines several perspectives on environmental management. The second part of the chapter provides a review of relevant environmentally orientated management approaches a firm may adopt. Furthermore, several tools and methods, which may be utilised for determining the firms position and supporting the development of a strategic approach, are outlined. In recent years a debate among the contribution of businesses to sustainable development emerged. Industries are blamed to place the environmental issue in a more liberal-productivist frame and thus have hijacked the environmental debate. The last part of the chapter gives an outlook on the sustainable development debate.

*Chapter 5* identifies the research aims of the project based on the literature review and describes the research methodology. The objectives and contents of the questionnaire and the case study are outlined in this chapter.

*Chapter 6* provides a detailed analysis of the results of the survey and the interviews.

*Chapter 7* summarises the conclusions of the survey and the interviews. The results indicate that an entrepreneurial management style supported by an appropriate organisational structure can be regarded as an adequate platform for adopting or even eliciting a proactive ecological approach. This endows firms with proactive and innovative capabilities, good prerequisites to follow the path of achieving environmental sustainability. The entrepreneurial style offers a framework of how to combine economic and ecological objectives.

Furthermore, firms adopting a proactive ecological approach appear to approach the ecological issue in a strategic manner.

*Chapter 8* provides a discussion on the conclusions and relates them back to the literature. Recommendations on the role of government and the key factors which may have an influence on the firm's capability to pursue an entrepreneurial ecological approach are outlined in the second part of the chapter. Moreover, it provides a discussion on the implications and contribution to knowledge and identifies areas of further research.

## 2 Concept of Strategic Management

### 2.1 *Historical development of strategic management*

Surely, Aristotle was not speaking of management when he said:

*"All men seek one goal: success or happiness. The only way to achieve true success is to express yourself completely in service to society. First, have a definite, clear, practical ideal - a goal, an objective. Second, have the necessary means to achieve your ends - wisdom, money, materials and methods. Third, adjust your means to that end."*

but he contributed an important statement to management philosophy.

Until the 1950s, the main task of management was seen in the integration and co-ordination of business functions, e.g. procurement, production, sales, planning and control. In later decades, such functions became increasingly independent which established a need for an 'administrative function' for co-ordinating and integrating these functions (Taylor 1911). This administrative function was to be taken up by the managerial staff (Burnham 1941). Moreover, it was argued that in the administrative approach of management at this time there was no space for creative interventions in the structure and behaviour of the company. The term "strategy" did not appear in this context and hence co-ordination and administration of the business was the executive task of management. This can be seen as a rather simple approach not taking into account the more long term, future-orientated view.

Table 2.1 summarises the early stages and main approaches in management evolution (Koontz et al 1988, Megginson et al 1986, Lock et al 1988).

**Table 2.1 Management evolution**

Mechanistic/scientific approach	Humanistic/behavioural approach	Contingency approach
<p>- Efficient operations and workers were added to factors of production, like land or equipment. Main responsibilities were plan, direct and control actions of subordinates to achieve the highest output.</p>	<p>- Emphasising favourable treatment of employees.</p>	<p>- Due to continuous changes like technological changes, managers must be ready to face new threats and make rapid decisions.</p>
<p>• <b><u>Taylor F. (1859-1915)</u></b> Major concern was to increase efficiency in production and share the gains with employees. The approach was directed to the lowest operating level. Later it was called the 'scientific management'.</p>	<p>• <b><u>Sheldon O. (1894-1951)</u></b> Statement of philosophy of management. Emphasising that a business has a 'soul' and 'social responsibility'.</p>	<p>- Decisions and actions determined by current situational elements. Different conditions require the application of various management techniques.</p>
<p>• <b><u>Fayol H. (1841-1925)</u></b> Referred as the father for modern management theory. Studies concerning universal principles. He outlined five basic functions of management: planning, organising, commanding, co-ordinating and controlling. He further outlined 14 flexible, not absolute principles of management.</p>	<p>• <b><u>Hawthorne(1924-1932)</u></b> Result was the shift from individualistic ethic toward the social ethic and value of harmony in inter-group relationships. Changes in productivity due to social factors as morale, effective management and satisfactory interrelationships.</p>	<p>- Management was on the threshold of new and existing discoveries, in areas like organisation theory, strategic planning, management of change etc.</p>
<p>• <b><u>Gantt H. (1861-1919)</u></b> Emphasised the need to develop a 'harmonious cooperation'.</p>	<p>• <b><u>Follet M. (1868-1933)</u></b> One of the first social scientists to apply psychology to business.</p>	
<p>• <b><u>Barth C. (1860-1939)</u></b> Testing, developing and perfecting the mechanism of scientific management.</p>	<p>• <b><u>Barnard C. (1886-1961)</u></b> Saw an organisation as a system of directed objectives. Management had to formulate objectives and acquire resources to meet the objectives.</p>	
<p>• <b><u>Gilberth F. (1868-1924)</u></b> <b><u>Gilberth L. (1878-1972)</u></b> Expanded Taylor's ideas. Interest laid in efficiency and L. Gilberth focused in industrial psychology.</p>	<p>• <b><u>Münsterber (1836-1916)</u></b> "Father" of industrial psychology.</p>	
<p>• <b><u>Ford H. (1863-1947)</u></b> 1913 - 1914 the beginning of mass production.</p>		

The 1950s were marked by surplus demand. Companies focused their strategies on production and technology.

Drucker (1956) stresses the rapid technological and social progress, the enormous economic development and the cut back of work force. These trends were accelerated by the rapid move of becoming internationally more involved. Especially the American economy can be mentioned as an early example. This led to the awareness that leading a company successfully does not only depend on the correct analysis and control of technical and economical dimensions. The search for a definite and optimal solution, led to the fact that held believes in theories and management principles were increasingly questioned. A passive co-ordination and administration as the main task for management appeared to be increasingly unsatisfactory (Simon 1957, Child 1972).

A movement from a supplier's to a buyer's market marked the 1960s. The 'marketing philosophy' emerged from this movement. The environment offers business opportunities, which are seen as inexhaustible (Levitt 1960). Hence, the companies need a strategy in order to be able to take advantage of such opportunities. A discussion about the appropriate organisational structure emerged. Chandler (1962) emphasises that the organisational structure of a company should follow the strategy it has decided upon. This led to the 7S-Concept that was later introduced in the 1980s.

The demand for business planning emerged. Business planning is defined as the systematic thinking and determination of objectives, behaviour and measurements for the future. The purpose of business planning is to secure the future of the company, to achieve pre-defined business targets and to sustain and improve the company's economic position. For this purpose planning comprises several functions; the function of performance, order,

finding the optimum, creativity, security and flexibility (Sweet 1964, Hill 1966).

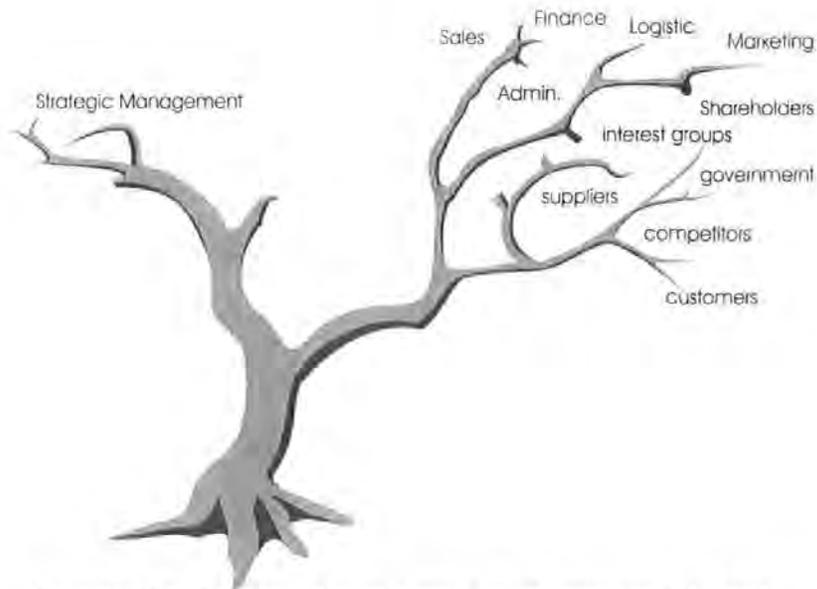
The 1970s and 1980s were characterised by the development of strategic methods and tools like the portfolio technique, experience curve, life-cycle approach and competitive statements by Porter (1980) and management analysis by Drucker (1980). Ecological, political and social "limits of growth" came to the fore in management discussion (Meadows et al 1971, Bohr 1979, Hirsch 1978). The optimism that economic problems can merely be solved by technology, planning and professional management technology disappeared.

Rapid and far-reaching changes of internal as well as external factors in the 70's led to the widening of strategic planning. Factors of influence, seen as relevant for successful management, like suppliers of resources, buyers of their output, and their direct competitors were taken into consideration (Gaelweiler 1976, Ulrich 1978, Dunst 1979). This led to the Porter's contending forces model introduced later in the 1980s. The late 70s showed the most significant development in management, like 'long-range planning', 'new venture management' introducing internal and external considerations.

Ansoff (1976) claims that strategic problems of management are treated in the literature from the aspect of optimising specific sections (strategic marketing, strategic technology, strategic procurement, etc.). Whereas, strategic management should comprise planning, co-ordination and control aimed at all business activities, representing an all-encompassing task. The demand for a comprehensive strategic management approach emerged.

Strategic management does not only represent the creation of a strategy or a plan, but also mental attitude at all managerial levels. Andrews (1978) stressing the need for a strategic concept comprising the link between

individual functional business areas also supports this. These perspectives can be illustrated as follows in Figure 2.1.



**Figure 2.1 The interdependence of all managerial levels**

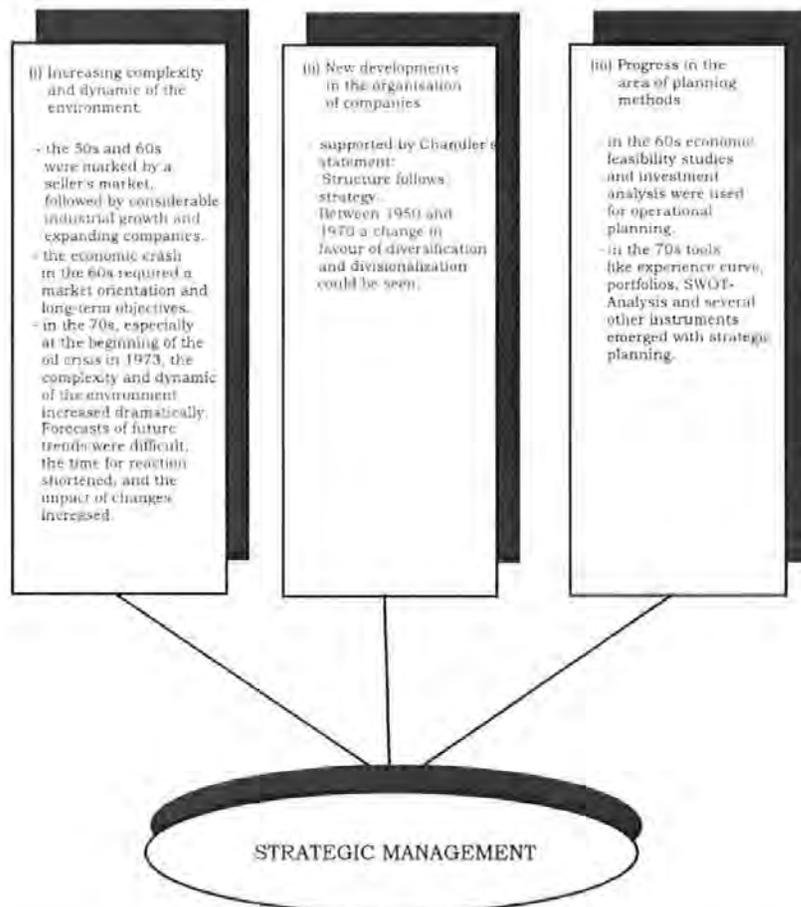
Gaelweiler (1976) describes the aim of strategic management as *"to secure the long term ability of survival and the future potential of success"*.

"Strategic management" and "Strategy" are the commonly used terms in the current management theory. "Strategic management" was named as an official discipline of management science in 1977 at a conference at the University of Pittsburgh/USA (Schendel and Hofer 1979). Strategic management integrates the institutional and functional sections of the theoretical management knowledge. As Schendel and Hofer argue, this represents the third development step of management science on its way of coping with the general difficulties of management, i.e. how to manage a company successfully (see also Kirsch et al 1979).

Companies have moved through four stages of orientation in their strategic planning over the years. In the first stage companies were 'product orientated', then they were 'customer orientated' and in the third stage 'competitor orientated'. Today companies pay attention to customers as well

as competitors, so it is said that companies now show a real 'market orientation' (Hinterhuber 1984, Raffée 1985, Kotler 1991).

Kreikebaum (1981) summarises some factors, which triggered off the development of strategic management (see Figure 2.2). Peter Drucker (1980) postulates the end of economic continuity and the development of an age of discontinuities. The permanent changes in the company's environment force a continuous reorientation on the "potential for success" of a company in securing the existence and realisation of profits. As a result of a rapid increase of uncertainties and risks a company is faced with, a general development of a systematic strategic way of thinking can be recognised in the literature.



adopted by Kreikebaum (1981)

**Figure 2.2 Development in strategic management**

In the 1980s, the term *strategic issue management* outlined by Ansoff (1980) emerged. The approach aims at changes in the environment which happen in a

matter of days or months and thus are very difficult to predict. His work stresses the need for already responding to 'weak' and not only to obvious signals which later may have a significant impact on the company. Peters and Waterman (1982) even emphasise the need for a 'real time' response of firms to changes in the environment and a quick internal reaction. They further stress the term 'strategic surprise management' which is likely to be the key term for the future.

Their much discussed investigation conducted by Peters and Waterman identified several characteristics of companies they consider to be excellent: -

- Orientation towards action.
- Learning about needs of customers.
- Promoting managerial autonomy.
- Focusing on the business they know best.
- Having a simple organisational structure.
- Centralised as well as decentralised organisations.
- Paying attention to people, resulting in higher productivity.
- Company philosophy based on values of their leaders.

Hofer et al (1978) identified competitive advantage as a company's unique position developed vis-à-vis its competitors. Ohmae (1982) further describes four basic ways how to sustain and gain competitive advantage representing the major objective of strategic management: -

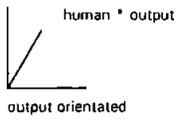
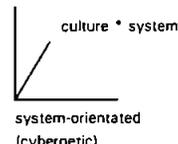
- Concentrate on know-how and resources where the company identifies a potential possibility to gain a competitive edge over its competitors.
- Exploit business units having a 'distinctive competence'.
- Pursue strategies concerning innovation.

- Continuous review of the business approach in order to initiate changes concerning the key success factors.

Turner (1991) defines competitive advantage as the creation of superior performance which is determined by the value the company is able to create for customers. Pümpin (1993), taking up the argument of developing competitive advantage states that it is important to be in a position to measure success of a company against the competitors by the existence of specific superior competencies.

Strategic management can be seen as an extension of strategic planning which places emphasis on both sides of the strategic balance sheet, the external as well as the internal perspective, attempting to maintain an equilibrium (Ansoff 1984). According to Chaffee (1985) strategic management refers to the choice of purpose (business objectives) and the appropriate methods (allocation of resources). He proposes the hypothesis that successful management consists of achieving the best possible fit ('fitness') of the company within its environment. The aim of management is to achieve a complete positioning of a business system in its environment by matching the development of internal capabilities with permanently changing external conditions (Pearce et al 1985, Malik 1986).

Table 2.2 summarises the strategic management approach moving from simple to comprehensive stages, from long range planning, strategic planning to strategic management (Hax et al 1984, Wütherich 1990).

	50th years	60th years	70th years	80 & 90th years
<b>relevant Management problems</b>	- provision of required production capacity - optimize input- and output values - Increasing efficiency by technology	- maintain one's hold on the consumer market - create a demand - to listen to consumer's desires	- operate in a business area, faced with dynamics and uncertainty (consumerism, eastern area,...)	- cope with the increasing complexity and dynamics in all areas of the business - maintain one's position in predatory competition
<b>Management understanding</b>	human-orientated human-relation movement  human * output output orientated		culture-orientated  culture * system system-orientated (cybernetic)	
<b>Stages of development of strategic approaches</b>	<div style="border: 1px solid black; padding: 2px; width: 80px; margin-bottom: 2px;">financial planning</div> <div style="border: 1px solid black; padding: 2px; width: 80px;">operational process and optimization</div>	<div style="border: 1px solid black; padding: 2px; width: 80px; margin-bottom: 2px;">long-term planning</div> <div style="border: 1px solid black; padding: 2px; width: 80px;">several years of growth orientated planning</div>	<div style="border: 1px solid black; padding: 2px; width: 80px; margin-bottom: 2px;">strategic planning</div> <div style="border: 1px solid black; padding: 2px; width: 80px;">improvement of reaction to market and competitive trends</div>	<div style="border: 1px solid black; padding: 2px; width: 80px; margin-bottom: 2px;">strategic management</div> <div style="border: 1px solid black; padding: 2px; width: 80px;">active resources planning in order to gain competitive advantage</div>

adopted with alterations from Wütherich (1990)

**Table 2.2 Development of the strategic think-tank**

However, several areas of concern are outlined by Pearce et al (1985) concerning strategic management: -

- Stating the mission (about the purpose, philosophy, etc.).
- Assessing the internal factors of the company to determine the strengths and weaknesses.
- Assessing the environment of the company to determine the opportunities and threats.
- Analysing options uncovered by the 'fit' of internal factors to the environment.
- Identifying desired options uncovered by the 'fit'.
- Strategic choice of a set of objectives.
- Implementing the strategy, the company has decided upon.
- Continuous control of the process and the assessed factors evaluated in the previous stages.

Pearce et al further refer to seven large-scale business studies in the United States, providing the evidence that companies implementing a long-term strategic approach and employing the concept of strategic management were

more successful than those without. The need for adopting a strategic process is further supported by Wheelen et al (1986) who point out that the process comprises three interacting stages, the 'strategy formulation', 'strategy implementation' and 'evaluation and control' stage.

Idenburg (1993) suggests different styles of strategy development processes. He describes two fundamental dimensions, goal orientation and process orientation, outlining different views of the strategy development process: -

- *Rational planning*

It represents a strategic planning process, assuming that people act in a rational way. The process covers the definition and determination of a mission, evaluation of strengths, weaknesses, opportunities and threats, choice of a strategy and deciding on the implementation. Authors like Ansoff (1984) and Porter (1980,1985) support this view. Idenburg argues that this view is based on assumptions of a more or less predictable environment.

- *Planning as guided learning process*

Representing a process of continuous adaptation (change, problem solving). It is argued that through goal orientation such unpredictable uncertainties can not be covered satisfactorily. This process represents a continuous reflection of the past and the present in order to learn from the experience. Other authors sharing this view are Senge (1990), etc.

- *Logical incrementalism*

It represents an incremental process, each phase after phase having its own internal logic covering elements of both goal and process orientation. This is often found in mergers and acquisitions. Authors like Quinn (1980) come to the same conclusion.

- *Emergent strategy*

It is argued that it is not possible to formulate definite objectives in such a dynamic and complex environment. The main requirement is flexibility. Mintzberg (1987) termed this approach 'emergent strategy'. Objectives have to be adjusted to continuous changes in the environment.

Idenburg emphasises that effective strategies should comprise rational attitudes as well as flexibility and learning experiences.

In the 1990s, management faced increasingly rapid and dynamic changes in the environment. Hahn (1991) outlines major developments that have an impact on management concepts: -

- Increased globalisation.
- Intensified competition.
- Higher prices of raw materials.
- Product life cycles will shorten.
- Increasing demand for R & D and innovation.
- Increased flexibility within a company is required.
- Implementation of inter-industry and international co-operations.

As stressed by Boehler et al (1985) companies need to be prepared for rapid changes in the environment. Companies have to: -

- identify the long-term trend early, to reduce the intrinsic risk (by using an early-identification-system),
- shape the risks (or new opportunities) by actively influencing the market,
- increase the speed of reaction and adaptability, being flexible,

- exchange the short-term view by a strategic concept for management in order to increase the potential for success,
- not only extrapolate past values into the future, but be oriented to consumer's needs and problems to achieve a long-term competitive position.

Other authors also support this view (e.g. Drucker 1984, Turner 1991). Lock et al (1988) put forward several developments in their 'Handbook of Management' which as he claims leads increasingly to a shift in the managerial role and to an increased complexity of the business in the last quarter of the century. It is emphasised that the external environment has a crucial impact on companies. Pümpin (1989) goes further, arguing that "management situations" show new shapes as a lot of things are getting more integrated, fragmented, competent from the lower levels of business, ecological and thus more ethical, integral and thus getting more complicated, risky, global, and sensitive to time aspects. New management concepts are required in order to remain successful. They have to involve shareholders, employees and other groups having a close relationship with the company.

Discussions on organisational and cultural issues increased during the 90s. As regards the development of strategic management, Wilson (1994) comes to the conclusion that the most provocative discovery is that the organisation and the culture of a company are seen as critical aspects for the execution of strategies. He argues that e.g. bureaucracy or poor communications are seen as barriers to change and thus to the implementation of strategies. He further emphasises that motivation, behaviour and values of management play an important role with regard to the company's performance and thus have an impact on success or failure of a strategy. Furthermore, he stresses that planning should base on continuous learning. Firms should be able to generate a *"willingness to respond, quickly and effectively, to change"*.

Organisational learning is seen as necessary, as business operates in an unstable and complex environment. This is also supported by Roome (1994), who refers to learning organisations, as a result of the increasing demand to adapt to the complex environmental situation (Peters et al 1982, Revans 1982). A major influence on organisational learning had been the theories of Argyris et al (1978). The results of the research on excellent firms (Peters and Waterman 1982) indicated that excellent firms are learning organisations. Senge (1990) in his work emphasises the fifth discipline - the systems thinking - as the cornerstone of how learning organisations think about the world. The fifth discipline framework of Senge encompasses personal mastery, sharing mental models, shared vision, team learning and systems thinking. His work further stresses the shift of minds from helpless reactors towards active participants and from reacting to the present towards creating the future. Pedler et al (1997) state that *'a learning organisation is an organisation that facilitates the learning of all its members and consciously transforms itself and its context'*. They also discuss the single and double loop energy flow, indicating that policies infuse operations and ideas infuse actions. Furthermore, a flow from individual to collective and action to operation and vice versa exists. The result is, that personal identity feeds firms' identity and vice versa. They emphasise that influence is both cause and effect rather than within the old management paradigm that are dominated by linear thought processes.

As the complexity, dynamic and hostility of business environments and the pressure from various external sources increase rapidly, firms are required to become faster and more flexible. As already stressed by Kast and Rosenzweig (1974): *"...management has a responsibility for maintaining a dynamic equilibrium...."* new approaches of management in terms of modern organisational structures are demanded in order to meet the challenges of tomorrow (Bleicher 1994). The company's competitive advantage is

increasingly influenced by the factor 'time'. Hammer et al (1993) argue that only few firms, facing stagnating or even shrinking markets showing an increased intensity of competition, plan, organise, implement and control systematically.

In this context, Godet (1998) emphasises that the company's structures will have to move from being adaptive to anticipation of environmental developments. He outlines several strategic consequences of environmental changes firms have to consider over time (Table 2.3)

Environment	Strategic consequences
1. Uncertainty	Adaptability and flexibility Pre-activity and pro-activity
2. Interdependence and complexity	Global vision and simple structures
3. International imbalance	Regulation through information and financial networks
4. Globalisation	Internationalisation of activities
5. Low and uncertain growth of ageing Europe	Fight for market share, productivity, differentiation, Innovation
6. Technological changes	Progress of process, more than products
7. Deregulation	New competitors
8. Economics of diversity	„Multi-small is possible“
Mass production of variety	Autonomous and responsible teams
1. Autonomy, differentiation	Entrepreneurship, intra-preneurship

adopted from Godet (1998)

**Table 2.3 Strategic consequences of changes in the environment**

Generally, it can be concluded that a strategic management process allows firms to envision its future development and develop the appropriate guidelines and objectives to achieve the firms' vision. Identifying its position on the competitive continuum, understanding and monitoring the business environment is of utmost importance (Porter 1980, Mintzberg 1987, Thompson 1993). The business environment will have an increasing impact on a company's competitive advantage, therefore it is vital for firms to understand and continuously monitor their environment. The increasing dynamic of environments requires firms to systematically identify and diagnose critical developments within and outside the firm. Firms have to

identify internal and external strengths and weaknesses thus being able to develop and sustain a competitive edge over competitors.

In order to react appropriately to changes in the environment firms need to utilise a systematic strategic approach allowing them to identify opportunities and threats early enough and according to the strategic significance take the appropriate actions. Chapter 2.2. will outline the core stages of a strategic management approach.

The following management theories such as 'stakeholder relations management', 'organisation development', 'learning organisation', 'leadership', 'core competencies' or 'shareholder value' emerged over the years representing crucial approaches applicable for the achievement of a company's mission and objectives (Hofer and Schendel 1978, Pümpin 1983, Freeman 1984, Wheelen et al 1986, Hamel et al 1989, Thompson 1993). Gomez (1993) points out 'Value management' as a new dimension of strategic management. Increasing the company's value will be the major challenge of management in the future. He argues that until the 80s the achievement of competitive advantage was the core target. Today the focus lies on the use of internal and external potentials of the company in order to increase a 'value'. Furthermore, he points out the importance of the 'Stakeholder-value-approach'.

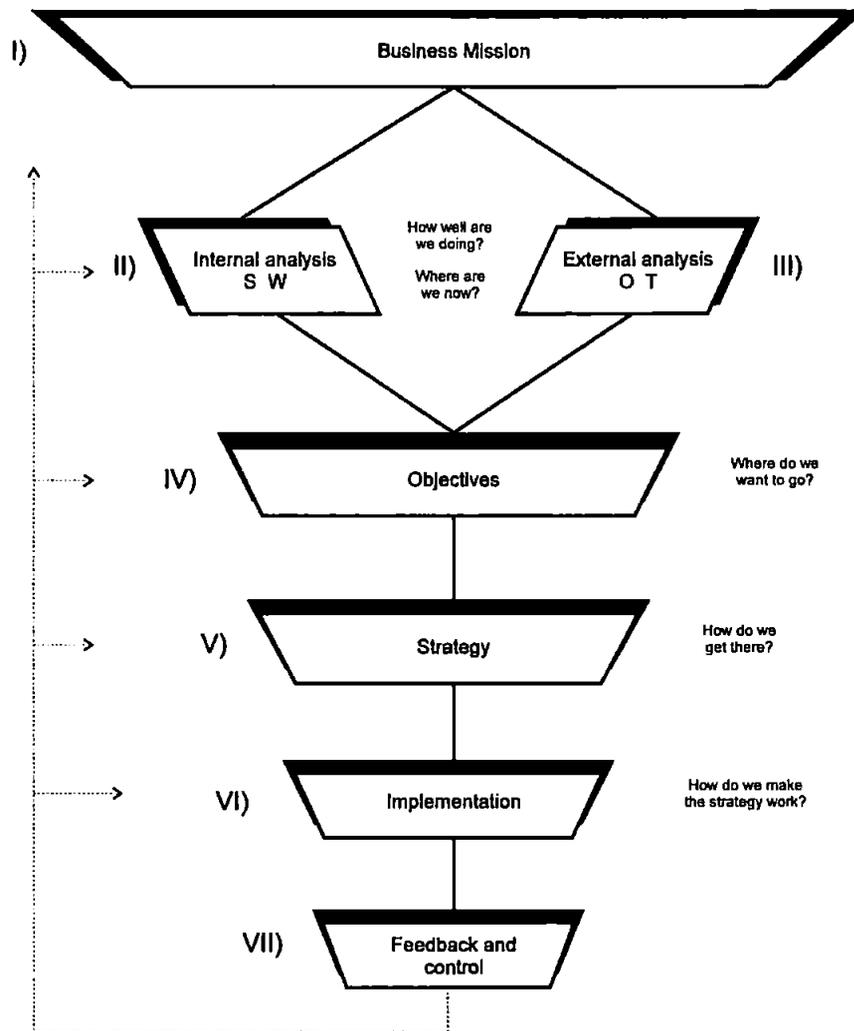
As the environment gets increasingly dynamic and hostile, firms need to approach the environment in a different way. Chapter 2.3. outlines the emerging spirit of entrepreneurship. Furthermore, the discussion among the social and ethical responsibility of firms, which emerged over the years, will be outlined in the last chapter.

## 2.2 *The strategic management process*

The strategic management process represents a process through stages of analysis, formulation and implementation of objectives and strategy towards the achievement of a firms' vision.

Within the strategic management process, managerial staff firstly has to decide upon the company's mission. Secondly, the internal environment has to be analysed for *strengths* (S) and *weaknesses* (W) as well as the external environment for *opportunities* (O) and *threats* (T). This is carried out through a SWOT-analysis. The strategic factors gained from the SWOT-analysis have to be evaluated. Subsequently management is able to determine business objectives and strategies. After the choice of a strategy an appropriate implementation plan has to be outlined. The control function has to monitor the process continuously concerning the achievement of objectives and allows to be able to react flexibly to any changes in the internal as well as the external environment (Figure 2.3). With the assistance of environmental scanning, representing a process of systematically looking for external information, the company should be able to react ad-hoc. It is important to be informed in time about changes in the surrounding environment (Kreikebaum 1981, Wheelen et al 1986, Krielkamp 1987, Johnson et al 1989, Thompson 1993).

Each business should identify its particular "distinctive competence". It stresses the need for the primary choice of a key position for the company and emphasises the choice of a promising industry and product-market areas, geographical location and the choice of a main functional industry, in which a company operates.



**Figure 2.3 Strategic management process**

### **I. Business Mission (Figure 2.3)**

Skipton (1985) describes the mission as the answer to the question, "what do we want to do?". Pearce et al (1985) define the business mission as a statement of the basic business purpose and business philosophy. It represents a statement or intention on products, market area and buyer segment. Contrary to this definition Johnson et al (1989) go further, arguing that according to Richards (1978) the mission represents a 'visionary projection' which should not include any statement on products and markets served by the company. Thompson (1993) later describes the mission as

*"the essential purpose of the organisation, concerning particularly why it is in existence, the nature of the business it is in, and the customers it seeks to serve and satisfy".*

## II. Internal Analysis (Strengths and Weaknesses) (Figure 2.3)

Internal resources have to be analysed in order to assess the performance and capability as well as the competence of a company. It is necessary to evaluate the performance of the company and to assess the capabilities of achieving its objectives.

Strategic planning for the future is only as good as the information on which it is based on. Several commonly used tools for the positioning of a company within a turbulent environment have been developed.

Heuristics for the internal analysis: -

- *Value chain (see Figure 2.4)*

The value chain is a tool to conduct the company's capabilities and identify potential sources of value enhancement.

The *primary* and also the *supporting activities* have to be analysed and evaluated. A strategy has to be sustained throughout the value chain (Porter 1985). The objective of any company should be to offer the greatest added value to its customers. The value chain approach goes even further comprising the suppliers and retailers value chain. A further value chain approach called the business system had been developed by McKinsey & Company.

- *7S-concept (see Figure 2.4)*

This concept allows to evaluate the 'soft-facts' and the 'hard-facts' and represents a systematic way of looking at the human software of the company (Watson 1983). It consists of seven components divided into the hard "S" (*strategy, structure and systems*) and the soft "S" (*style, skills, staff*).

Further tools such as 'experience curve' and 'product life cycle' also have to be considered as important tools for firms (Williamson 1970, Henderson 1974, Kotler 1991).

### **III. External Analysis (Opportunities and Threats) (Figure 2.3)**

Several questions arise: to which extent are the changes in the business environment (i) ascertainable, (ii) identifiable, (iii) predictable and (iv) verifiable? This concern mainly arises due to the increased complexity and turbulence of the social and economic environment requiring firms to be highly sensitive to changes. Therefore, an essential part of the strategic management process is the need for a very good understanding of the surrounding business environment. Hence, it is of utmost importance to systematically analyse the environment. Within the literature several idioms like environmental analysis, scanning, monitoring, forecasting are mentioned. Ansoff (1976) states that environmental analysis has the aim to take up and monitor signals from the business environment, which may have an impact on the firm. The aim is to identify issues - which may have an impact - at an early stage in order to be prepared for them (Aguilar 1967, Albach 1987, Preble 1978). This also supports the need to move towards a proactive business orientation, anticipating changes. Furthermore, the concentration should lie on the continuous monitoring of identified critical issues. The monitoring approach is also termed as a 'radar system' (Wilson 1983). Bates (1985) stresses the need for forecasting the future environment, which also requires looking at the past and current situation. Fahey et al (1977, 1981) outline three kinds of environmental scanning approaches the irregular, the periodic and the continuous. The irregular approach focuses on ad hoc analysis whereas the periodic approach aims at a regular analysis.

Environmental scanning can be regarded as a process of systematically scanning and monitoring external information. Firms should evaluate and

assess external information of the recent past and monitor and evaluate present issues and try to foresee the possible future impacts. In the time of dynamic and complex environments, environmental scanning represents a sensible issue requiring firms to systematically and continuously identify critical developments in the environment. More than ever firms need to be highly sensitive and responsive to environmental issue and according to critical developments take the appropriate actions of strategically significant issues. Therefore, it can be argued that through environmental scanning, monitoring and forecasting firms are more likely prepared to cope with and anticipate environmental changes. Matching opportunities with internal capabilities is a dynamic process as markets evolve, opportunities decline.

The external environment consists of macro and micro environmental forces. Macro oriented forces include e.g. social and economic factors. Micro oriented forces are more related to competitive issues a firm faces on a day-to-day basis, including stakeholders. It has to be emphasised that firms need to understand the various relationships, the different concerns, values and perceptions of stakeholders during the strategic management process. There is much wider range of individuals outside and inside a firm having an influence on business success. Freeman (1984) identified stakeholders as those groups „*without whose support the organisation would cease to exist*“. Thus, they are playing a vital role in the success of firms.

Heuristics for the external analysis: -

- *PEEST Analysis (see Figure 2.4)*

Market opportunities and threats can be analysed by using the PEEST analysis. The PEEST analysis examines the following external (macro) factors: political, economic, environmental, social and technological factors (Kubicek 1976, Bosemann et al

1986). It enables the company to react upon opportunities and threats in time.

- *Porter's contending forces (1980) (see Figure 2.4)*

The company has to understand the forces having an influence on its environment in order to be able to achieve its targets. The contending forces isolated by Porter are: *threat of new entries* (capital requirements, economies of scale,..), *bargaining power of buyers* (few switching costs, concentration,..), *bargaining power of suppliers* (no substitute products, high switching costs,..), *pressure from substitute products* and *intensity of rivalry among existing competitors* (slow industry growth, high exit barriers, ..).

The data obtained from the internal and external analysis (SWOT-analysis) is then used to determine the strengths and weaknesses of a company in order to analyse the company's capability to take advantage of opportunities and to cope with existing threats in the market (Bosemann et al 1986, Johnson et al 1989, Kotler 1991). From the data the questions "How well are we doing?" and "Where are we now?" can be answered. These two questions are the first basic cornerstones of strategic planning.

The information derived from the SWOT-Analysis is assessed to give a competitive view and is then used to identify business objectives and following from this, strategies (Mauthe 1984, Sanderson 1989).

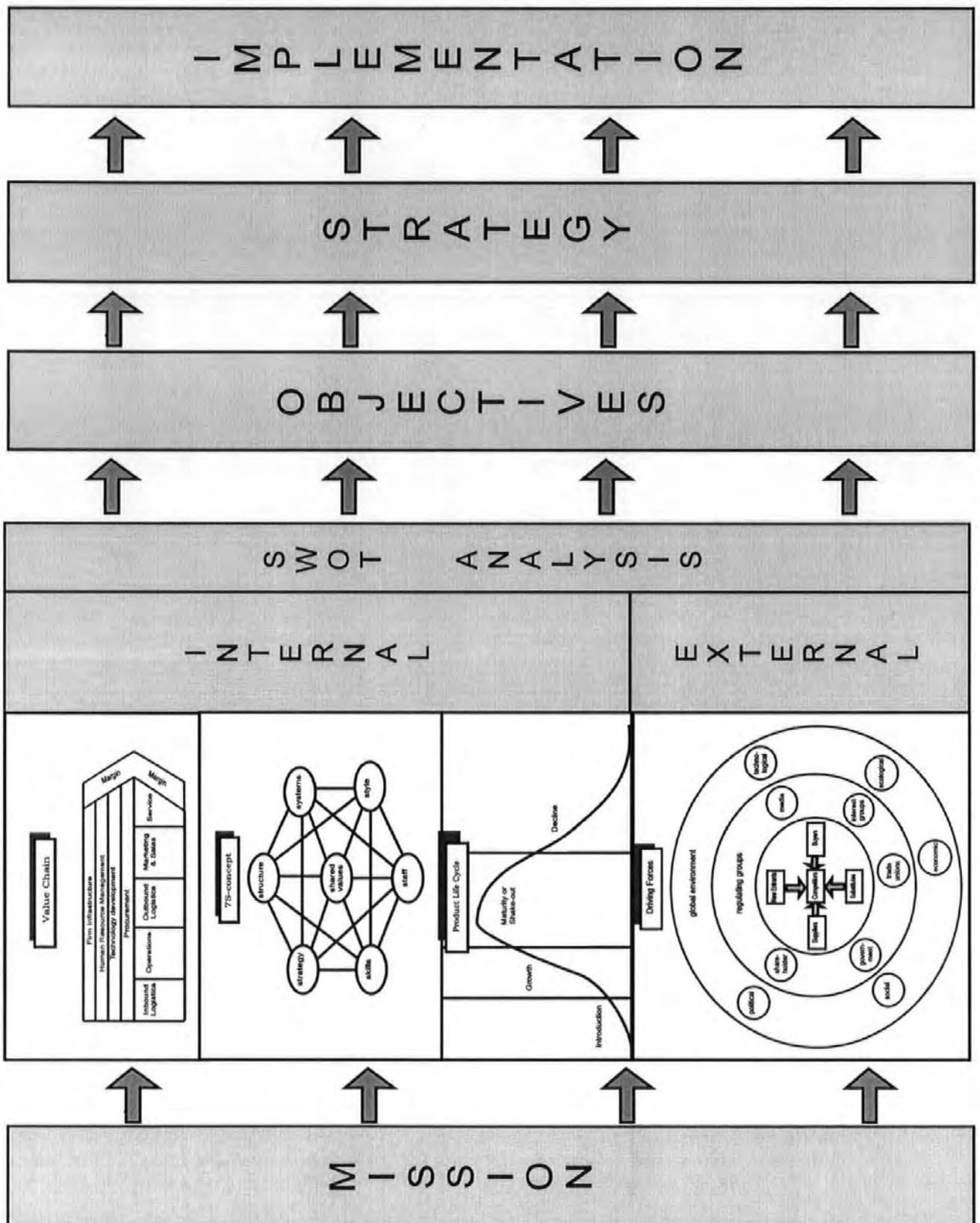


Figure 2.4 Strategic management process (Heuristics)

#### **IV. Objectives (Figure 2.3)**

The question "Where do we want to go?" has to be answered. This is the second basic cornerstone of strategic planning. Barnard (1938) referred to business objectives as an important component of management.

Objectives lead on to targets which are to be achieved in areas like profitability, competitive position, leadership in a business area, etc.. This coincides with determining a time scale stating by when targets should be achieved. Objectives should be suitable, feasible and acceptable (Hax 1984, Pearce et al 1985, Thompson 1993).

#### **V. Strategy (Figure 2.3)**

The question "How do we get there?" is to be answered. This can be called the third basic cornerstone of strategic planning.

Strategies describe how a company uses its existing and potential strengths to achieve its objectives (Kreikebaum 1981). Within the concept of strategic management, strategy represents:

*"the decision process that conjoins the organisation's capability with the opportunities and threats it faces in its environment" (Rowe et al 1982).*

Strategy is a method of how to achieve pre-defined objectives. The strategy resulting from the objectives should rarely change. The firm does not often start 'de novo' in its choice of strategy. However, within its strategy it still has to be flexible.

Porter (1985) outlines three generic strategic positions a company can choose:-

- *Cost leadership*

Through aggressive construction of efficient-scale facilities, reduction of costs through experience and 'economies of scale'.

- *Differentiation*

Adding value to products or services, which distinguish them from those of competitors and make them unique.

- *Focus*

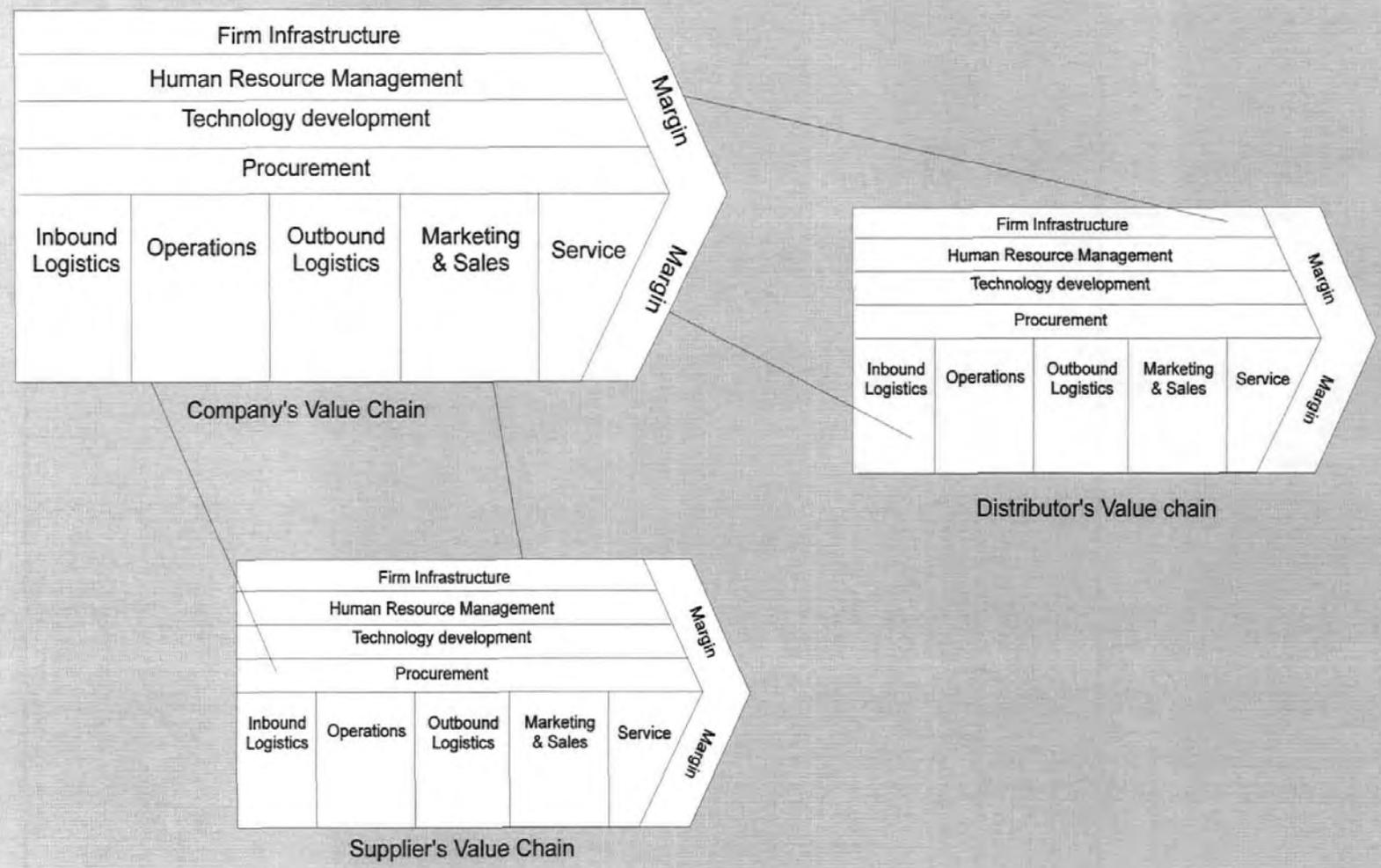
On a particular buyer group, segment of product line or geographic market. It can be pursued based on differentiation or cost leadership.

The choice of the generic strategy is important for a company to sustain its competitive advantage.

However, strategic success depends on the way a company behaves as a whole and the way functions are integrated. Companies need to look for competitive advantages beyond their own value chain, i.e. into the value chain of its suppliers, distributors and ultimately customers (Figure 2.5), relating to interdependent activities.

Thus a company might help a major supplier to reduce its costs and subsequently has the opportunity to source at lower costs. The best example for the importance of such interdependent linkages of value chains is just-in-time (JIT) delivery. Various authors point out that the linkages between the various activities are of increasing importance (Porter 1985, Johnson et al 1989, Kotler 1991, Thompson 1991).

Figure 2.5 The generic value chain system



In the last decade, the role of suppliers respectively the relationship between customers and suppliers changed significantly. Suppliers manage more and more activities and responsibilities. Firms aim at looking at the supply chain, in a holistic way. The demand for managing supply chains more effectively increased in the last decade. Hall (1999) stresses the importance of collaborative relationships between suppliers and customers and thus supporting a partnership relationship. The factor 'time' has become increasingly a critical issue, new rules of competition emerged. The increasing international trade leads to the fact that components are obtained and distributed world-wide. All this requires appropriate supply chain management processes. The supply chain represents a network organisation involving upstream and downstream linkages, producing value in terms of products and services. As more and more firms tend to concentrate on core businesses and thus outsource certain activities, the trend goes more to the existence of 'virtual' or 'network' organisations (Parker et al 1997, Christopher 1998). Furthermore, the trend leads to a material flow from a multitude of suppliers, requiring a higher degree of integration and co-ordination. Hall (1999) would prefer to talk about 'demand' instead of 'supply' and 'network' instead of 'chain', which seems to describe the situation best. Yet it is interesting to note that Christopher (1998) argues that one should rather talk about competition between supply chains than between firms. Aitken (1998) refers to a supply chain as a *'network of connected and interdependent organisations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users'*. Parker et al (1997) in their work point out that a true supply chain management approach even moves towards a learning organisation.

Generally, strategy can be seen as the translation of the determined objectives, the way of achieving goals. Pearce et al (1985) suggest eleven basic strategic options a firm may decide upon concentration, market

development, product development, innovation, horizontal or vertical integration, joint ventures, concentric or conglomerate diversification, retrenchment, and divestiture (Johnson et al 1989, Ansoff 1965, Thompson 1993).

Referring to strategic instruments for the choice and achievement of a strategy the picture is quite diverse. The 'Portfolio-Analysis' method proves to be an extremely important tool. The most important of these methods are:-

- *Ansoff Matrix (see Figure 2.6)*

The potential market growth can be evaluated. The matrix offers four options. The options are shown with the level of risk involved with each option. The '*market penetration* approach', where the company operates with their existing products on its existing market involves the smallest risk. The next options, which are increasingly more risky, are *market development* and *product development*, where the company changes only one variable (e.g. new market with existing products). The *diversification* approach has the maximum risk, where the company introduces new products in new markets (Ansoff 1965).

- *General Electric Matrix (see Figure 2.6)*

It represents a multifactor portfolio matrix. The businesses can be rated according to *market attractiveness* (high, medium, low) and *competitive position* (strong, average, weak). The matrix is appropriate for the assessment of SBUs. The market attractiveness and competitive position depend on several factors, which are weighted. The matrix offers three strategic approaches: (i) invest/grow, (ii) selectivity/earnings and (iii) harvest/divest.

- *Boston Consulting Group (BCG) (see Figure 2.6)*

This matrix allows an assessment of products according to the relative market share held by the company (Boston Consulting Group 1977). The BCG-matrix offers four cells. The *question mark* represents the introduction phase of a product (low share, high growth). The *stars* represent the growth phase (high share, high growth). The *cash cow* represents the maturity phase of a product (high share, low growth) and the *dogs* represent the decline phase (low share, low growth).

Other methods are: -

- *Gap-Analysis (see Figure 2.6)*

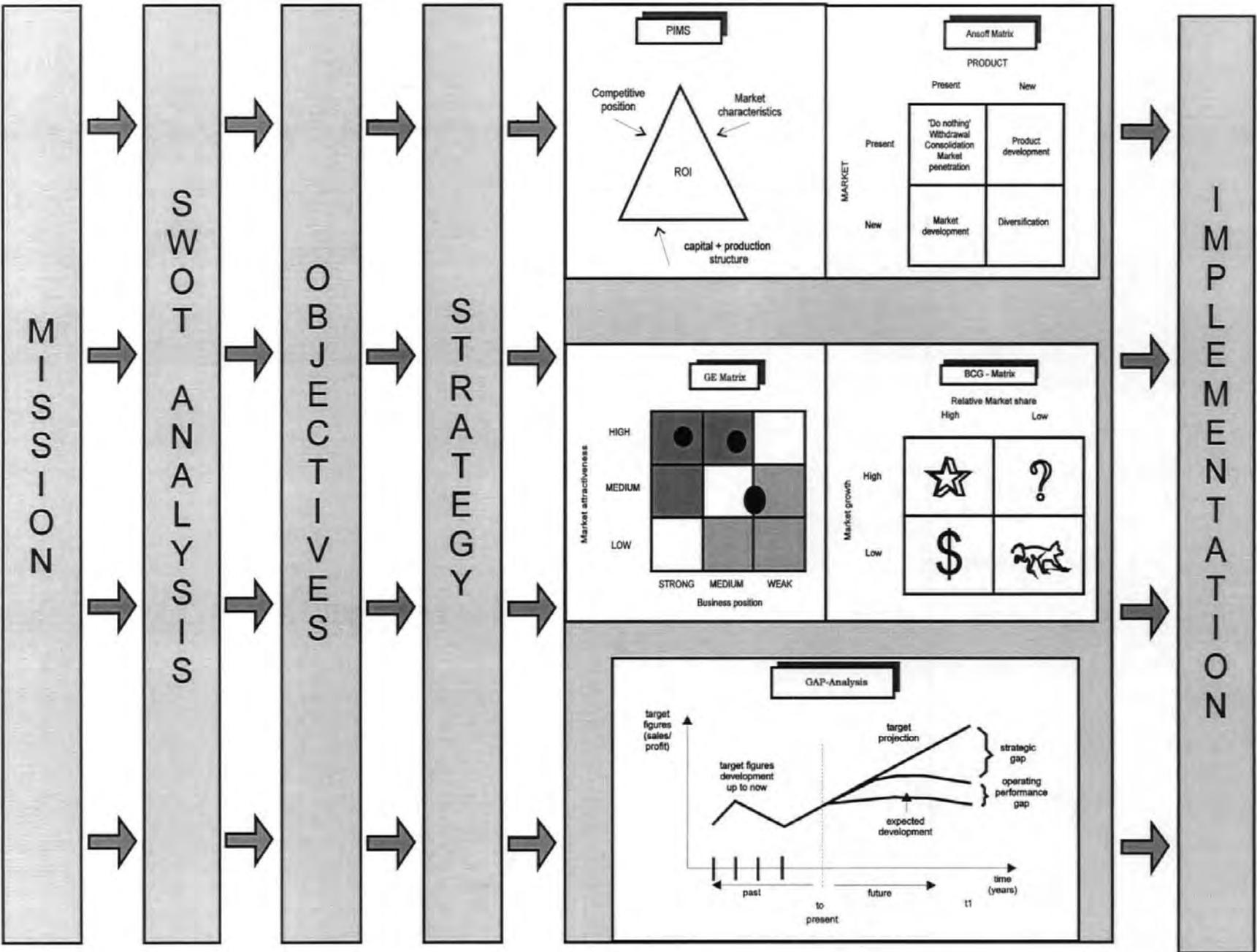
This is seen as the classic instrument for strategic planning. Its purpose is to recognise strategic problems early (e.g. through a S.W.O.T. analysis) to initiate counter-actions.

- *PIMS-Project (see Figure 2.6)*

(Profit Impact on Market Strategies)

The model aims at identifying crucial factors and how each factor is related to performance. PIMS e.g. can be used to help forecasting profits, aid to make effective allocation of capital, manpower and other scarce resources. It can assist to manage managerial performance and can be used to appraise new business opportunities (Welge 1985, Porter 1985).

Figure 2.6 Strategic management process ('Portfolio-analysis' methods)



## **VI. Implementation (Figure 2.3)**

The question "how do we make the strategy work?" is to be answered. This can be seen as the fourth basic cornerstone of strategic planning.

Having decided on the strategy to pursue, a plan for implementation has to be evaluated that exploits the existing competencies leading to the achievement of objectives and moves within the business mission (Greenley 1986). Giles (1991) identifies the process of planning and implementation as a powerful vehicle to bring about a change within the organisation. He argues that an effective strategy requires visibility, consistency and direct bearing on customers. He describes the implementation phase as being

*"...concerned with putting strategy into practice. It can be described as the execution of tactics both internally and externally so that the organisation moves in the desired strategic direction".*

In the absence of appropriate implementation mechanisms, strategic planning simply becomes "paralysed by analysis". Ansoff (1984) and several other authors suggest that a more comprehensive management concept is needed, which will assure an effective and timely implementation of strategic plans by taking into account also organisational aspects.

## **VII. Feedback and Control (Figure 2.3)**

As already stressed by Lorange et al (1974) control systems are increasingly of great importance to strategic management, especially due to the complexity and dynamic of the external environment and the increasing diversification of businesses and markets. Feedback and control is of prime importance. It is required to review the management process and assess the extent to which the objectives are achieved. The process has to be seen as a dynamic system requiring continuous monitoring of the process as well as the environment (Pearce et al 1985, Hinterhuber 1992, Thompson 1993). It is important that the company takes the appropriate action quickly enough.

It can be concluded that 'speed', 'time' and a more proactive and future oriented management approach is required in order to cope with the rapidly changing environment. Therefore, it can be argued that something beyond or a more different approach to the traditional strategic management may be necessary. Entrepreneurship represents an emerging management approach, of great interest to researchers and industry.

### **2.3 An emerging spirit of strategic management: Entrepreneurship**

The dynamics and changes of national and global markets and technologies have led to the emerging of the entrepreneurial spirit. Drucker (1984) emphasises the burst of entrepreneurial activities due to the rapid evolution of technology and knowledge, demographic trends, the venture capital market and the fact that the American industry began to learn how to manage entrepreneurship. Entrepreneurship has entered the academic and non-academic area, new academic journals emerged, courses at universities have been established, etc. (Stevenson et al 1990).

In the emerging years, the term entrepreneurship has merely been associated with a person who starts a new business. Nowadays, commonly used terms in the literature are: 'corporate entrepreneurship', 'organisational entrepreneurship', 'intrapreneurship' and 'entrepreneurial management'.

Stevenson et al (1990) refer to the earliest interpretation of the word 'entrepreneurship' by Richard Cantillon (1725) who states that entrepreneurship ' *bears the risk of buying at a certain price and selling at an uncertain price*'. Jean Baptiste Say (1803) states that the entrepreneur is "*the protagonist of economic activity in general*" bringing together the factors of production. Beaudou (1797) describes entrepreneurship as a person bearing risks, planning, supervising, organising and owning. Schumpeter (1934) interprets an entrepreneur as someone "*who carries out new combinations*" determining the new combinations as the introduction of a new good, new method of production, opening up new markets, new sources of supply and carrying out new organisations in an industry. In this context, the spirit of entrepreneurship was associated with innovation. Also Schendel et al (1979) identifies areas of further research in order to test and further develop 'strategic management'. One of their issues was 'entrepreneurship'. Several other authors relate Entrepreneurship to 'growth' (Drucker 1985), 'innovation'

(Backman 1983) and 'flexibility' (Birch 1987). Vesper (1984) identifies three types of corporate venturing: *new strategic direction, initiative from below the organisation and autonomous business creation*.

Stevenson et al (1990, 1995) develop an interesting view of corporate entrepreneurship proposing the following interpretation:

*"Entrepreneurship is a process by which individuals - either on their own or inside organisations - pursue opportunities without regard to alienable resources they currently control".*

Furthermore they outline the following six propositions: -

- An entrepreneurial organisation is that which pursues opportunity, regardless of resources currently controlled.
- The degree to which a firm is entrepreneurial depends on the attitude of individuals within the firm.
- The firms' entrepreneurial behaviour is positively correlated to the efforts to place individuals in a position to detect opportunities, to train and reward them.
- Firms, which make a conscious effort to lessen negative consequences of failure when opportunities are pursued, will exhibit a higher degree of entrepreneurship.
- Next to the success rate the amount of entrepreneurial behaviour will be a function of the employees' ability to exploit opportunities.
- Organisations, which facilitate the emergence of informal internal and external networks, and allow the gradual allocation and sharing of resources, will exhibit a higher degree of entrepreneurial behaviour.

They further point out that firms may adopt either an entrepreneurial style or an administrative style. Issues, which may urge the firm to be more entrepreneurial or administrative oriented, are outlined in Table 2.4.

←					→	
<b>Entrepreneurial</b>					<b>Administrative</b>	
<b>focus</b>					<b>focus</b>	
	<b>Characteristics</b>	<b>Pressures</b>	<b>Characteristics</b>	<b>Pressures</b>		
<b>A</b> <b>Strategic orientation</b>	Driven by perception of opportunity	Dismissing opportunities  Rapidly changing technology, consumer economics, social values and political rules	Driven by controlled resources	Social contrasts  Performance measurement criteria  Planning systems and cycles		
<b>B</b> <b>Commitment to seize opportunities</b>	Revolutionary, with short duration	Action orientation  Narrow decision windows  Acceptance of reasonable risks  Few decision constituencies	Evolutionary, with long duration	Acknowledgement of multiple constituencies  Negotiation about strategic course  Risk reduction  Co-ordination with existing resource base		
<b>C</b> <b>Commitment of resources</b>	Many stages, with minimal exposure at each stage	Lack of predictable resource needs  Lack of control over the environment  Social demands for appropriate use of resources  Foreign competition  Demands for more efficient resource use	A single stage, with complete commitment out of decision	Need to reduce risk  Incentive compensation  Turnover in managers  Capital budgeting systems  Formal planning systems		
<b>D</b> <b>Control of resources</b>	Episodic use or rent of required resources	Increased resource specialisation  Long resource life compared with need  Risk of obsolescence  Risk inherent in the identified opportunity  Inflexibility of permanent commitment to resources	Ownership or employment of required resources	Power, status and financial rewards  Co-ordination of activity  Efficiency measures  Inertia and cost of change  Industry structures		
<b>E</b> <b>Management structures</b>	Flat, with multiple informal networks	Co-ordination of key non-controlled resources  Challenge to hierarchy  Employees' desire for independence	Hierarchy	Need for clearly defined authority and responsibility  Organisational culture  Reward systems  Management theory		

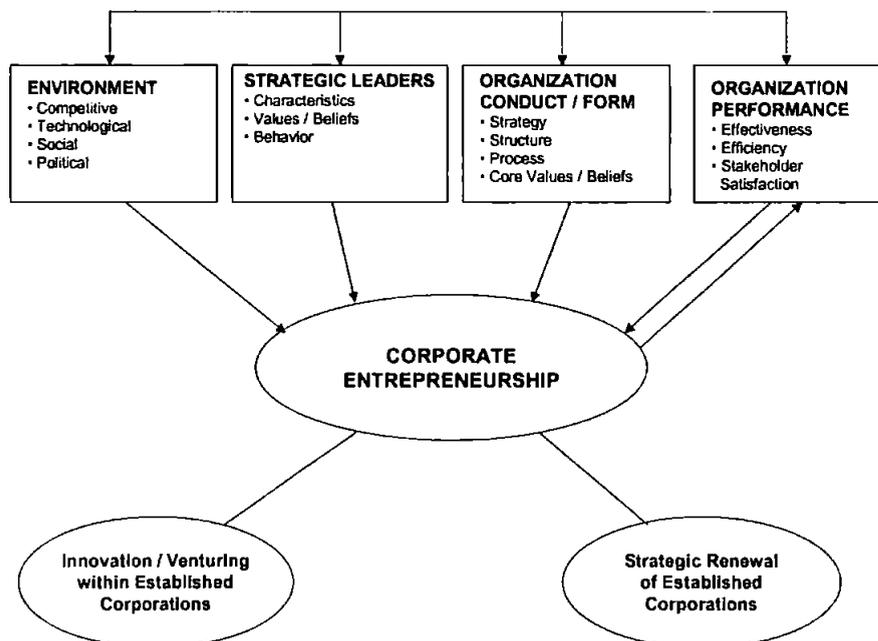
adopted from Stevenson et al (1995)

**Table 2.4 The entrepreneurial culture vs. the administrative culture**

Guth et al (1990) describe corporate entrepreneurship in a broader view more related to business generation, like

*"Corporate entrepreneurship involves the notion of birth of new businesses within on-going businesses, and beyond that, involves the transformation of stagnant, on-going businesses in need of revival or transformation."*

They argue that a transformation, a new combination of resources from an 'old' to 'new' firm reflects entrepreneurial behaviour. They argue that strategic renewal includes activities such as refocusing a business competitively, introducing major changes in marketing or distribution, redirecting product development and reshaping operations (Ellsworth 1985, Guth et al 1990). However, Miller (1983) in his work states that being entrepreneurial requires firms to do more than just perform simple changes to technology or product-lines or imitate competitors and that entrepreneurs are not necessarily financially sound. Guth et al try to establish a relation between corporate entrepreneurship and the elements of strategic management (Figure 2.7). They emphasise the need to maintain an equilibrium between all the elements of strategic management.



adopted from Guth et al (1990)

**Figure 2.7 Relation between entrepreneurship and strategic management**

Based on this framework Guth et al identify six issues to be further inquired: -

- *Environment influences corporate entrepreneurship*  
The more hostile the environment the more entrepreneurial the business.
- *Strategic leaders influence corporate entrepreneurship*  
Management style of managers has an impact on the whole organisation.
- *Organisation form/conduct influences corporate entrepreneurship*
- *Bureaucratic structures and processes are regarded as non-supportive.*
- *Business performance influences corporate entrepreneurship*  
Excess resources may be more supportive to innovation.
- Corporate *entrepreneurship* influences performance

A slightly different view of corporate entrepreneurship is given by Sopford et al (1995) who point out that three different types exist: -

- The creation of new businesses within an existing organisation also called corporate venturing or intrapreneurship (Burgelman 1983, Kuratko et al 1990).
- The transformation or renewal of existing organisations through the renewal of key ideas (Kanter 1983).
- Changing the 'rules of competition' in its industry. The behaviour is also associated to a 'frame-breaking change' (Schumpeter 1934, Stevenson et al 1985).

With regard to entrepreneurship as a management style Covin et al (1990) outline characters of style a firm may adopt. They argue that the style depends on the degree to which extent management is willing to: -

- *risk taking*

To pursue risk-opportunities with the objective to achieve high returns.

- *proactivity*

To try to introduce products, services, technologies first and thus induce actions of competitors, rather than responding to competitors.

- *innovation*

Concentration on R & D. Time-based innovations, time-based product introduction. Introduce research and development activities without any timely delay.

These characters have also been outlined by Miller (1983) in his work. It can be argued that the entrepreneurial strategic orientation is roughly similar to the 'prospector firm' of Miles et al (1978) and the 'entrepreneurial organisation' as outlined by Mintzberg (1973).

Hisrich (1992) describes entrepreneurship as

*„the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological, and social risks, and receiving the resulting rewards of monetary and personal satisfaction“.*

Interestingly, Sahlman et al (1992) outline how entrepreneurship is characterised by managers. They relate entrepreneurship to being innovative, flexible, dynamic, risk taking, creative and growth orientated. The entrepreneurial style is pursued in order to aggressively gain or maintain a competitive advantage.

The more *conservative* management style stands for characteristics as non-risk taking, non-proactive and non-innovative efforts. These companies will pursue a more cautious, competitive orientation. Companies may decide to

imitate competitors' moves rather than initiate the first move. Companies are declared to be mainly internally orientated and pursue a reactive and short-term strategic approach (Klandt 1993). It can be argued that this strategic orientation is roughly similar to the 'defender firm' of Miles et al (1978) and the 'adaptive organisation' by Mintzberg (1973).

However, it can be concluded that despite the diversity of terms and types of entrepreneurship, entrepreneurship can be regarded as commonly based on an *innovative and proactive stance, creation of new capabilities and seeking for opportunities* (Schumpeter 1934, Kirzner 1973, Sopford et al 1995). Sopford et al (1995) outline attributes which are common to all types of entrepreneurship: *proactiveness* (Mintzberg 1973, Miller et al 1984, Covin et al 1990), *aspiration beyond current capabilities* (Hamel et al 1989, Stevenson 1990), *team orientation* (Burgelman 1983, Kanter 1983), *capability to resolve dilemmas, and learning capability* (Senge 1990).

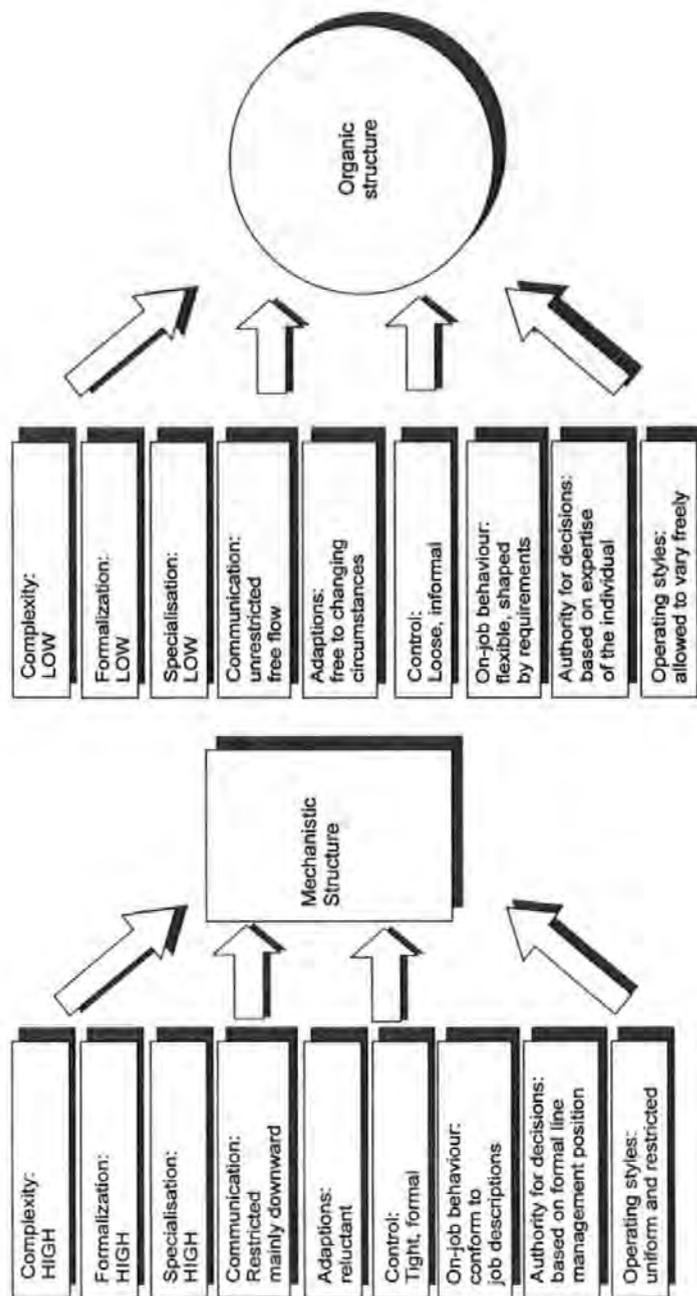
In the context of entrepreneurship, Kuratko et al (1990) define intrapreneurship as a way to enable or improve innovative abilities among employees. Intrapreneurship is identified as "*entrepreneurship inside of a corporation where individuals will champion new ideas from development to reality*". Kuratko et al stress the need for an appropriate environment within a firm supporting entrepreneurial behaviour (see also Miller 1983, Covin et al 1990). Miller (1983) revealed that depending on the type of firm a significant relationship between entrepreneurial behaviour and several other internal variables can be concluded. This is further supported by Kanter (1985) and Fry (1987) who also identified several factors, which can be related to success or failure of developing an entrepreneurial environment. Possible factors, which are needed to enhance an entrepreneurial environment, are: *use of rewards, appropriate management support, resources availability, organisational structure* and the willingness to take *risk*.

The work of Kuratko et al (1990) on the intrapreneurial assessment instrument (IAI) stress the need for further issues: *a rewarding system, allow failures* and *maintain a flexible organisation* in order to enable the development of an innovative climate. According to this, they develop a concept of an 'intrapreneurial strategy' in order to create the appropriate innovative environment and thus encourage employees to be more entrepreneurial.

It can be stated that entrepreneurship is not confined to an individual, but affected by the firm's norm, culture and structure. Covin et al (1990) state that a successful firm pursuing an entrepreneurial behaviour needs an appropriate supportive culture and organisational structure (Gibb 1999). It can be argued that companies have to be able to modify its organisational structure appropriately in order to deal with the emerging challenges (Volberda 1997). A research conducted by Covin et al (1988) reveals that organic structures promote entrepreneurial behaviour and enables the firm to respond rapidly to changes of the environment rather than mechanistic structures.

The organisational structure may vary on the continuum from a relatively *organic* and *mechanistic* organisational structure (Burns et al 1961, Thompson 1967, Mintzberg 1979, Nystrom et al 1981, Baron et al 1990, Gordon 1993). Figure 2.8 outlines features of the organisational structure.

An organic structure tends to be more flexible, informal and offers high speed in response. This structure corresponds roughly to the 'adhocracies' mentioned by Mintzberg (1983). The mechanistic structure tends to be more traditional, bureaucratic and formal, which may not encourage creativity and innovation and it reduces the adaptability and responsiveness of a company. Some companies e.g. which pursue mass production tend to be more effective with mechanistic structures. Organic structures are seen to be more appropriate for innovative and proactive management approaches.



**Figure 2.8 Mechanistic and organic structures**

The Harvard Business Review magazine asked a number of managers who are involved in managing entrepreneurial environments what issues they consider important. They (several authors 1995) point out that an appropriate culture in terms of *promoting personal freedom, management's ability to trust people and high involvement of employees* is required. However, several issues such as appropriate risk/reward ratios within the incentive structures, corporate goals related to new ventures, flat organisations and pushing down decision-

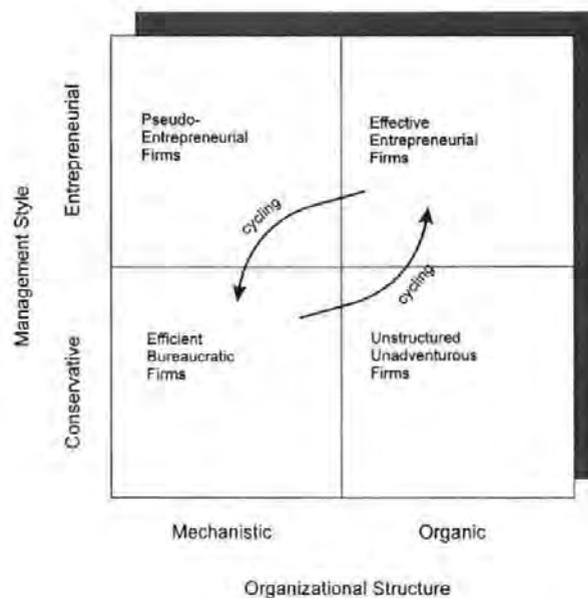
making into the organisation are necessary. They stress those two issues, the continuous communication and encouragement of customer-oriented behaviour are seen as critical issues for change. It is argued that understanding the customer is a key to innovation and entrepreneurial success.

According to their study, Covin et al (1990) conclude that

*“entrepreneurial firm behaviour correlates positively with firm performance in the presence of an organic organisational structure. Entrepreneurial firm behaviour correlates negatively with firm performance in the presence of a mechanistic organisational structure.”*

Thompson (1993) argues that the management style and the supporting organisational structure have an impact on the companies’ performance. Child (1972) already stated earlier that companies’ timely response has a significant impact on their performance which requires an appropriate style and structure.

Covin et al (1990) emphasise that it is of utmost importance for management to maintain an equilibrium between the organisational structure of the company and the type of entrepreneurial behaviour. According to this, they suggest four types of management styles and organisational structures (Figure 2.9).



adopted from Covin et al (1990)

Figure 2.9 Organicity and Entrepreneurship

The portfolio of Covin et al (1990) classifies companies in the following stages:

- ***Effective Entrepreneurial***

Companies are able to develop advantages through flexibility. They have an organic organisational structure and pursue an entrepreneurial approach. Low bureaucratic barriers encourage innovations (Burns et al 1961, Mintzberg 1979). The structure offers the opportunity of rapid response to a hostile environment (Lawrence et al 1967)

- ***Pseudo Entrepreneurial***

Companies show willingness to high-risk projects and innovation but may be hampered by rigid organisational structures. It can be interpreted that companies do not have the ability to take complete advantage of the entrepreneurial orientation, as it is not supported by its structure. However, they argue that companies may choose this structure in order to increase the predictability in an uncertain environment. Stevenson et al (1985) put forward that companies may emphasise the importance of clearly defined roles and centralised decision processes in order to ensure planning, organising and directing activities.

- ***Efficient Bureaucratic***

Companies, which face a more stable and predictable environment, may decide to pursue a more conservative style. This is supported by a mechanistic organisational structure to ensure efficiency. The environment may not require companies to respond quickly. In stable and less predictable environments, less internal communication, more centralisation and more rigid strategies and thus less entrepreneurship is required (Khandwalla 1977).

- ***Unstructured Unadventurous***

Companies have an adaptable organisational structure. However, they do not take complete advantage of this flexible structure due to their conservative

style. They may not be efficient in performing standardised tasks, which may be required by a conservative management style.

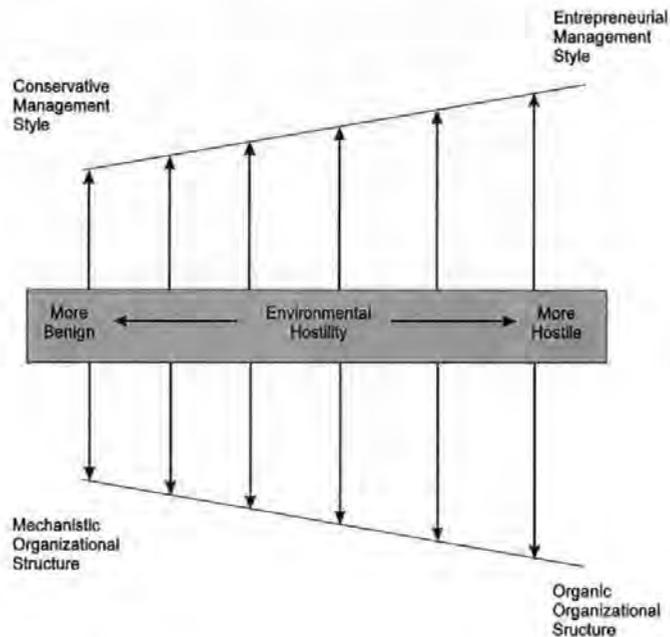
Covin et al point out that effective-entrepreneurial companies and efficient-bureaucratic companies pursue an organisational structure and a management style, which can be declared as coincident. The structure a company has decided upon supports the management style pursued and thus can be utilised effectively. Covin et al determine the effective entrepreneurial as well as the efficient bureaucratic approach as being appropriate for the short- and long-run success.

It can be concluded that it is necessary to manage both dimensions simultaneously in order to survive or even grow in a constantly changing environment. The organisational style has to change in order to match appropriately with the specific management style a company has decided upon. This has already been stated by Khandwalla (1977) who stresses that a successful management consists of achieving the best possible fit of the management style and the organisational structure in relation to its environment.

Several authors outlined that the business environment has an increasing impact on the management style and organisational structure (Figure 2.10). It is argued that a hostile environment triggers an entrepreneurial behaviour (Burns et al 1961, Chandler 1962, Lawrence et al 1967, and Thompson 1967, Covin et al 1990).

Hisrich (1992) argues that the term entrepreneurship evolved over the time as the business environment became more dynamic and complex. A hostile environment is characterised by intense competition, precarious industry

setting and a relative lack of exploitable opportunities, whereas a benign environment offers richness in investment and marketing opportunities.



adopted from Covin et al (1990)

**Figure 2.10 The impact of environmental hostility**

Miller (1983) conducted a study in order to analyse the relationship between management style and the hostility of a company's environment. He determines a positive correlation between the entrepreneurial style (in terms of innovation, risk-taking and proactiveness) and environmental hostility. These results are further shared by Khandwalla (1977), Singh (1968), Zahra et al (1988). A further investigation by Miller et al (1983) reveals that a strong relationship exists between the environmental dimension (dynamics, hostility and heterogeneity) and the degree of analysis and innovation in successful firms.

A research among small firms conducted by Covin et al (1989) tries to determine to which degree environmental hostility influences firm's performance. They come to the conclusion that small firms with high entrepreneurial orientation and firms with high organicity indices (organic structures) perform best in hostile environments whereas small conservative

firms perform best in more benign environments. Stopford et al (1995) analysed 10 firms facing difficulties and operating in hostile environments. They collected data in between 1985-90. Based on this investigation they conclude, that these firms were able to drop past behaviours and adopt a strategic approach of fostering entrepreneurship. Furthermore, they detected that seven firms had transformed to an organic firm according to the definition given by Miller 1983.

It may be argued that hostile environments require firms to be highly flexible, proactive and anticipatory. Klandt (1993) defines flexibility as

*“the degree to which an organisation possesses a verity of actual and potential procedures, and the rapidity by which it can implement these procedures, in order to increase the steering capacity of the management and improve the steerability of the organisation”.*

Several authors argue that the opportunity for greater speed and flexibility is supported by shallow hierarchies and open communication or in other words by an organic organisational structure which offers the best potentials to respond rapidly to environmental forces. Companies serving a well-known and relatively stable market can be quite successful having a mechanistic structure, as rapid response and flexibility may not be required (Burns et al 1961, Lawrence et al 1967). This is further supported by Khandwalla (1977) who reveals that high-performing companies in intense competitive markets adopt an organic structure, whereas companies, which face low competitive pressure in the market, adopt more mechanistic structures. Chakravarthy et al (1998) argue that new organisational forms have to be utilised in order to cope with 'hyper'-competitive environments. They point out that traditional bureaucratic organisations are not state-of-the-art anymore. In their work they refer to an 'entrepreneurial network', which requires fundamental changes in the behaviour of all corporate members.

Nevertheless, there are also opposing voices from various authors who have reached different conclusions. Normann (1971) conducted a research on product-development projects in Swedish companies and conclude that organic structure does not always enhance innovation. Furthermore, Robertson (1972) in his research did not found any support for an organic versus mechanistic argument as regards successful and unsuccessful innovations.

However, it should be mentioned that the choice of an organisational structure does not have to lie at one of the two extremes. On the one hand, a business unit may require innovation, creativity and flexibility in order to cope with the changing environment. But on the other hand some divisions of the firm where sufficient penetration has been achieved may require a degree of centralisation and formalisation. Nystrom et al (1981) refer to a two-stage process. The first stage relates to the initiation of a process and the second stage stands for the implementation of a process. Thus, an organic structure may be more appropriate for proposal generation and a mechanistic structure for the implementation of proposals. Hence this stresses the flexibility - stability dilemma, as for different stages different structures may be appropriate. Covin et al (1990) also argue that firms may organise divisions as if there were different organisational structures due to the fact that each division may face different environmental conditions.

An interesting statement of Nystrom et al (1981) states that

*„...organisations should never reach static equilibria. They may reach temporary equilibria; but as time passes, information-processing requirements always change, and organisational configurations should evolve to match these new requirements“.*

Klandt (1993) who emphasises that companies have to prevent themselves from 'overshooting' and probably becoming a 'chaotic' structure, shares this view. Covin et al (1990) furthermore point out that the four business types

should be seen as a dynamic process rather than being static conditions. Management has to be able to cycle between the stages which depends on the circumstances the company faces, emphasising that cycling requires a change in both dimensions simultaneously (Covin et al 1990). They argue that successful firms manage to cycle between being 'effective entrepreneurial' and 'efficient bureaucratic'.

They outline five implications for management in being able to successfully adopt and maintain a management style supported by organisational structures: -

- *Diagnose your environment*

It is important to understand the surrounding environment.

- *Diagnose your business*

Assess the firm's actual behaviour and the organisational structure it has.

- *Manage your style and structure*

Initiate change if it is required to match the environment.

- *Cycle*

Determine short- and long-term strategies for cycling behaviour.

- *Monitor*

It is important to monitor the rapidly changing environment.

Maidique et al (1984) also point out that successful high-technology firms

*„manage differently at different times in the evolutionary cycle of the firm.....it alternates periods of consolidation and continuity ..... that can lead to dramatic changes in the firm's strategies, structure, controls, and distribution of power...“*

Finally, it can be concluded that maintaining an equilibrium between management style and organisational structure, depending on the

environmental hostility, will have an impact on the company's success (Covin et al 1990).

The need for entrepreneurial capacities is further emphasised (Burkinshaw 1997, Gibb 1999). Entrepreneurship relates to the entrepreneurial design of organisations; it is about creating an entrepreneurial culture within an organisation. Gibb (1999) in his work outlines several components of entrepreneurial management. The stakeholder approach as well as organisational learning are seen as key components of entrepreneurial management. Furthermore, a business and social community responsibility is also regarded as a key component.

## **2.4 Social responsibility and business ethics as part of strategic management**

The late 1970s are marked by keywords like "social responsibility, morals and ethics" of companies (i.a. Davis 1973, Zenisek 1979, Carroll 1979, Davis et al 1975). This can be regarded as the socio-cultural approach. Firms need to achieve a satisfaction of various demands rather than exclusively produce and distribute products and services. Firms need to be increasingly oriented towards the values and concerns of their stakeholders, which are closely involved with the firm and have an increasing influence on the firm's success. The stakeholder responsibility goes beyond the economic responsibility; being responsible for impacts of the business on the society.

During the 1970s the call for social responsibility increased in importance, demanding that firms also have to follow social objectives among economic objectives. A "new lifestyle" has been called for, based on changes of management values. Values like materialism, domination of nature and egoism have to diminish in importance, in favour of values like solidarity, modesty, spontaneity and a friendly behaviour towards nature (Wenke et al 1978). During the 1970s, the discussion concerning social responsibility has concentrated on the degree to which companies have to take over responsibility, which exceeds economic performance (Strebel 1980). Referring to the literature the picture of what is covered by the term 'social responsibility' is very diverse.

It appears to be necessary to outline the difference between „Ethics“ and „Social Responsibility“ more in general. Business ethics is about the fact that businesses should behave in accordance with defined rules of moral philosophy. The defined rules may consist of what is to be defined as „right“ and „wrong“. In some situations, one may come to the same conclusion independently of the classification if it belongs to 'ethics' or 'social

responsibility'. Several authors argue that ethics provide more coherent demands than social responsibility. However, it can be concluded that both terms leave enough room for interpretations.

Pfriem (1986) in his book on the relationship of ethic and economy refers to Aristotle who called for natural economies and warned against the endless desire to satisfy needs. According to Hess (1988) a company behaves ethically if it succeeds to maintain an equilibrium between the following groups: *product - market - customer, human, capital and ecology*.

Concerning 'ethics' the crucial problem lies in defining what is 'good' or 'bad' (Hutchinson et al 1997). Welford (1995) stresses the difficulty of defining the term business ethics. He argues that the definition depends on the values of individuals, the culture and on the formally existing codes of conduct (Wheelen et al 1986). Ethics need to be translated into codes of conduct, communication and information (Welford 1997). Relating ethics to an organisation, Welford refers to the 'actual value system' representing the moral climate of staff having an influence on the firms' behaviour. Furthermore, he emphasises the need for a 'value system', which represents a minimum level of ethics to be fulfilled by firms. Business needs to have a clear set of values. Concerning the term 'ethics' various terms such as moral, ethical, good, efficient, rational, effective, fair, best and improved are discussed resulting in totally different meanings.

Hosmer (1994) in his work summarises ten of the most cited principles expressed in applied ethical terms: -

- Self-interest (ethical egoism)
- Personal virtues (Aristotle)
- Religious injunctions (St. Augustine and St. Thomas Aquines)

- Government requirements (Hobbes and Locke)
- Utilitarian benefits (Bentham and Mill)
- Universal rules (Kant)
- Individual rights (Jefferson and King)
- Economic efficiency (Smith, Friedman and Blinder)
- Distributive justice (Rawls)
- Contributive liberty (Nozick)

Furthermore, Hutchinson et al (1997) give a detailed description of the word 'ethics' and outline the major meta-theories on ethic. They also stress the problem of defining the codes of conduct classifying what is moral, however, agreeing that ethics is more concerned about moral choices. They express the following description of business ethics, as:

*„the systematic study of moral (ethical) matters pertaining to business, industry or related activities, institutions, or practices - or beliefs“  
(Donaldson 1992)*

and

*„ethics that may be defined as the study of what is good or right for human beings. It asks what goals people ought to pursue and what actions they ought to perform. Business ethics is a branch of applied ethics; it studies the relationship of what is good and right to business“  
(Hoffmann and Moore 1990).*

Kuratko et al (1998) define ethics as a set of principles recommending behavioural codes that explain what is good or bad and may additionally cover moral obligations which may go beyond legal limits. They further argue that universal principles can not exist due to the dynamic and ever changing environment, so that the definition of universal principles have to be determined dynamically rather than static.

Social responsibility is related to the social relationship between businesses and the society (i.a. Davis 1973, Picot 1977, Ulrich 1978, Zenisek 1979,

Caroll 1979, Davis et al 1975, Wartick et al 1985, Koontz et al 1988). According to Picot (1977) social responsibility represents a behaviour that is related to the avoidance of problems in areas which are seen as important for society (e.g. preservation of the nature and living conditions). He argues that the objective of social responsibility can only be achieved through renunciation of middle and long term opportunities of profitability. Furthermore, he argues that a company can only successfully pursue this objective as long as the company does not face any fierce competition - especially from those companies, which do not pursue a policy of 'social responsibility'.

Friedman (1970) refers to social responsibility of firms as a purely economic issue. Other authors see social responsibility to be based more on ethical foundations. Steiner (1972) in his work on social responsibility states that social responsibility is related to the social contract (a set of accepted relationships, obligations and duties) between business and the society in which it operates. He further outlines a concept of social responsibility, which ranges from 'traditional economic production', 'government dictated', and 'voluntary area' to 'expectations beyond reality'. Caroll (1979) in his work refers to four aspects of social responsibility, which should be taken into consideration, i.e. the economic, legal, ethical and discretionary categories of firms' performance. Zenisek (1979) stresses the fit between society's expectations and business' ethics.

A further - more broader - definition of social responsibility is given by Davis et al (1975) who define social responsibility as „*the managerial obligation to take action to protect and improve both the welfare of society as a whole and the interest of organisation*“. Furthermore, Wartick et al (1985) outline that social responsibility is determined by the society. The task of a firm consists in identifying and analysing societies' expectations related to the firms' responsibilities and then determining an approach for being responsive to

changing demands and thus being able to implement an appropriate response to social issues.

However the majority of authors agree that a firm's social responsibility have to go beyond legal duties (Davis 1973, Carroll 1979, Zenisek 1979). Alexander et al (1974) point out that a firm's reputation is also strongly led by the reputation of being socially responsible and thus represents a crucial issue of the firm's success. Bowman (1974) and Albach (1976) also come to the conclusion that social responsibility is of utmost importance for the firm's viability. A deterioration of the stakeholders' view of a firm's social responsibility may have a negative impact on the firms' reputation (Bowman et al 1975). This is also supported by Donaldson et al (1983) who point out that firms should be concerned with more than purely making money, emphasising the need to consider concerns of their stakeholder. Clarkson (1995) also identifies the orientation towards the stakeholder as an appropriate approach for being socially responsible. In context with the environmental debate several authors increasingly demand firms to perform social audits, supporting transparency and accountability (e.g. Welford and Jones 1996, Welford 1997, Sillanpää 1998).

Ackerman (1973) identifies three generic steps concerning a management approach of social responsibility: allocation of responsibilities, executive performance evaluation and management through systems. Furthermore, Kay (1993) outlines three ways of how social responsibility can be related to strategic management. Social responsibility represents an input to strategy and is a source of strategic choice and actions in order to develop a strategic plan. It is also part of the infrastructure that supports the value chain and thus represents a mainstream management task. Preece et al (1995) defines social responsibility as a supportive issue of management by utilising the value chain for the assessment of the firm's social responsibility. Kuratko et al (1998)

state that social responsibility represents an obligation of business to society, covering various areas (social, ecological, etc.). A framework developed by Prakesh-Sethi (1996) classifies social responsibility into three categories which may represent a firms' social intensity (Table 2.5).

<b>Dimension of Behaviour</b>	<b>Stage One: Social obligation</b>	<b>Stage Two: Social Responsibility</b>	<b>Stage Three: Social Responsiveness</b>
<b>Response to social pressures</b>	<ul style="list-style-type: none"> <li>• Maintains low public profile, but if attacked uses PR methods to upgrade its public image.</li> <li>• Denies any deficiencies.</li> <li>• Blames public dissatisfaction on ignorance or failure to understand corporate functions.</li> <li>• Discloses information only where legally required</li> </ul>	<ul style="list-style-type: none"> <li>• Accepts responsibility for solving current problems.</li> <li>• Will admit deficiencies in former practices and attempt top persuade public that its current practices meet social norms</li> <li>• Attitude toward critics conciliatory.</li> <li>• Freer information disclosures than stage one.</li> </ul>	<ul style="list-style-type: none"> <li>• Willingly discusses activities with outside groups.</li> <li>• Makes information freely available to public.</li> <li>• Accepts formal and informal inputs from outside groups in decision making.</li> <li>• Is willing to be publicly evaluated for its various activities</li> </ul>
<b>Philanthropy</b>	<ul style="list-style-type: none"> <li>• Contributes only when direct benefit to it clearly shown; otherwise, views contributions as responsibility of individual employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Contributes to noncontroversial and established causes.</li> <li>• Matches employee contributions</li> </ul>	<ul style="list-style-type: none"> <li>• Activities of stage two plus support and contributions to new, controversial groups whose needs it sees as unfulfilled and increasingly important.</li> </ul>
<b>Firm's general reaction</b>	<ul style="list-style-type: none"> <li>• Simply react to legal obligations</li> </ul>	<ul style="list-style-type: none"> <li>• Actively respond and accept responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Proactive and willing to be evaluated by the public</li> </ul>

adopted with alterations from Kuratko et al (1998)

**Table 2.5 Stages of social responsibility**

A plethora of assessments concerning the association of social responsibility and the firm's financial performance can be found in the literature. Two main strands of thoughts can be distinguished. On the one hand, several authors state that firms being socially responsible experience a competitive disadvantage due to increasing costs (Vance 1975, Ullmann 1985, etc.) and on the other hand it is argued that firms' social responsibility leads to a higher productivity due to employees' commitment and identification (i.a. Moskowitz 1972, Soloman et al 1985).

A research performed by Owen et al (1993) reveal that firms believe that social responsibility has an impact on market share and thus on competitive advantage. Moreover, Burke et al (1996) state that social responsibility should be seen as a long-term decision, since win-win situations are recognisable. However, it is argued that the crucial point is in maintaining an equilibrium between monetary and social objectives. Several empirical studies examine the relationship between social responsibility and financial performance. Aupperle et al (1985) conducted a study in order to analyse the relationship between corporate social responsibility and profitability. In their article, several studies, which were conducted in this context, are summarised. They argue that many studies identify a relationship between social responsibility and profitability, however those, which were more methodologically, did not support a relationship. The studies differed in their research methodology applied and in the measures of social responsibility and financial performance. Aupperle et al utilised the following components: economic, legal, ethical and discretionary concerns in order to come up to a definition of corporate social responsibility given by Carroll (1979). Their study concluded that no statistically significant relationship between social responsibility and profitability exists and therefore it can be argued that socially responsible firms are not more profitable than other firms. In contrast, McGuire et al (1988) point out that their results indicate a relationship between a firm's prior performance and corporate social responsibility and furthermore the results indicate an association between measures of risk and social responsibility.

However, it can be concluded that being the best in providing quality products and services is not enough to establish a positive corporate image. Klassen et al (1996) point out that an environmental award presented to a firm, noted by the public has an impact on the market value of the firm. Moreover, Hosmer (1994) points out that ethics should be incorporated into strategic

management, as firms should aim at establishing trust and loyalty on part of their stakeholders (Barnard 1938, Simon 1947).

Generally it can be said, that discussions within the literature varies between social responsibility resulting in a competitive disadvantage, image damage, or being an integrated part of business philosophy, and an image improvement up to providing competitive advantage. Moreover Peters and Waterman (1982) point out that ethical behaviour and social responsibility produces not just survival but excellence.

However, literature on social responsibility e.g. as buying criteria of consumers is rare. Some authors (Anderson et al 1972, Webster 1975, etc.) point out that social responsibility can also be identified as a non-economic buying criterion by consumers.

Over the years, the discussion concerning ecological issue is being increasingly associated with the social responsibility of a firm. Welford (1995) refers environmental management to ethics as a '*standard of right conduct*'. Kuratko et al (1998) assess the environmental issue as one of the major challenges of social responsibility. They further emphasise that the environmental issue constitutes an enormous challenge for entrepreneurs in respect to the development of socially responsible organisations. They argue that entrepreneurs need to pave the way for new approaches. Moreover, they point out that the term „ecovision“ (developed by Shareef 1991) represents a leadership style for innovative corporations. They state that 'ecovision' encourages open and flexible structures encompassing the whole organisation and the environment, as social demands evolve.

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## 2 Concept of Strategic Management

### 2.1 *Historical development of strategic management*

Surely, Aristotle was not speaking of management when he said:

*"All men seek one goal: success or happiness. The only way to achieve true success is to express yourself completely in service to society. First, have a definite, clear, practical ideal - a goal, an objective. Second, have the necessary means to achieve your ends - wisdom, money, materials and methods. Third, adjust your means to that end."*

but he contributed an important statement to management philosophy.

Until the 1950s, the main task of management was seen in the integration and co-ordination of business functions, e.g. procurement, production, sales, planning and control. In later decades, such functions became increasingly independent which established a need for an 'administrative function' for co-ordinating and integrating these functions (Taylor 1911). This administrative function was to be taken up by the managerial staff (Burnham 1941). Moreover, it was argued that in the administrative approach of management at this time there was no space for creative interventions in the structure and behaviour of the company. The term "strategy" did not appear in this context and hence co-ordination and administration of the business was the executive task of management. This can be seen as a rather simple approach not taking into account the more long term, future-orientated view.

Table 2.1 summarises the early stages and main approaches in management evolution (Koontz et al 1988, Megginson et al 1986, Lock et al 1988).

**Table 2.1 Management evolution**

Mechanistic/scientific approach	Humanistic/behavioural approach	Contingency approach
<p>- Efficient operations and workers were added to factors of production, like land or equipment. Main responsibilities were plan, direct and control actions of subordinates to achieve the highest output.</p>	<p>- Emphasising favourable treatment of employees.</p>	<p>- Due to continuous changes like technological changes, managers must be ready to face new threats and make rapid decisions.</p>
<ul style="list-style-type: none"> <li>• <b><u>Taylor F. (1859-1915)</u></b> Major concern was to increase efficiency in production and share the gains with employees. The approach was directed to the lowest operating level. Later it was called the 'scientific management'.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Sheldon O. (1894-1951)</u></b> Statement of philosophy of management. Emphasising that a business has a 'soul' and 'social responsibility'.</li> </ul>	<ul style="list-style-type: none"> <li>- Decisions and actions determined by current situational elements. Different conditions require the application of various management techniques.</li> </ul>
<ul style="list-style-type: none"> <li>• <b><u>Fayol H. (1841-1925)</u></b> Referred as the father for modern management theory. Studies concerning universal principles. He outlined five basic functions of management: planning, organising, commanding, co-ordinating and controlling. He further outlined 14 flexible, not absolute principles of management.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Hawthorne(1924-1932)</u></b> Result was the shift from individualistic ethic toward the social ethic and value of harmony in inter-group relationships. Changes in productivity due to social factors as morale, effective management and satisfactory interrelationships.</li> </ul>	<ul style="list-style-type: none"> <li>- Management was on the threshold of new and existing discoveries, in areas like organisation theory, strategic planning, management of change etc.</li> </ul>
<ul style="list-style-type: none"> <li>• <b><u>Gantt H. (1861-1919)</u></b> Emphasised the need to develop a 'harmonious cooperation'.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Follet M. (1868-1933)</u></b> One of the first social scientists to apply psychology to business.</li> </ul>	
<ul style="list-style-type: none"> <li>• <b><u>Barth C. (1860-1939)</u></b> Testing, developing and perfecting the mechanism of scientific management.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Barnard C. (1886-1961)</u></b> Saw an organisation as a system of directed objectives. Management had to formulate objectives and acquire resources to meet the objectives.</li> </ul>	
<ul style="list-style-type: none"> <li>• <b><u>Gilberth F. (1868-1924)</u></b> <b><u>Gilberth L. (1878-1972)</u></b> Expanded Taylor's ideas. Interest laid in efficiency and L. Gllberth focused in industrial psychology.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Münsterber (1836-1916)</u></b> "Father" of industrial psychology.</li> </ul>	
<ul style="list-style-type: none"> <li>• <b><u>Ford H. (1863-1947)</u></b> 1913 - 1914 the beginning of mass production.</li> </ul>		

The 1950s were marked by surplus demand. Companies focused their strategies on production and technology.

Drucker (1956) stresses the rapid technological and social progress, the enormous economic development and the cut back of work force. These trends were accelerated by the rapid move of becoming internationally more involved. Especially the American economy can be mentioned as an early example. This led to the awareness that leading a company successfully does not only depend on the correct analysis and control of technical and economical dimensions. The search for a definite and optimal solution, led to the fact that held believes in theories and management principles were increasingly questioned. A passive co-ordination and administration as the main task for management appeared to be increasingly unsatisfactory (Simon 1957, Child 1972).

A movement from a supplier's to a buyer's market marked the 1960s. The 'marketing philosophy' emerged from this movement. The environment offers business opportunities, which are seen as inexhaustible (Levitt 1960). Hence, the companies need a strategy in order to be able to take advantage of such opportunities. A discussion about the appropriate organisational structure emerged. Chandler (1962) emphasises that the organisational structure of a company should follow the strategy it has decided upon. This led to the 7S-Concept that was later introduced in the 1980s.

The demand for business planning emerged. Business planning is defined as the systematic thinking and determination of objectives, behaviour and measurements for the future. The purpose of business planning is to secure the future of the company, to achieve pre-defined business targets and to sustain and improve the company's economic position. For this purpose planning comprises several functions; the function of performance, order,

finding the optimum, creativity, security and flexibility (Sweet 1964, Hill 1966).

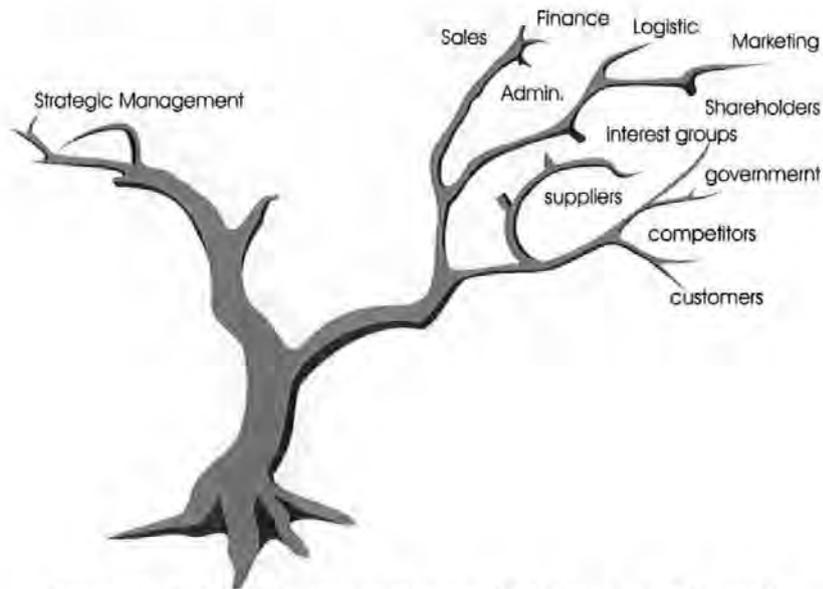
The 1970s and 1980s were characterised by the development of strategic methods and tools like the portfolio technique, experience curve, life-cycle approach and competitive statements by Porter (1980) and management analysis by Drucker (1980). Ecological, political and social "limits of growth" came to the fore in management discussion (Meadows et al 1971, Bohr 1979, Hirsch 1978). The optimism that economic problems can merely be solved by technology, planning and professional management technology disappeared.

Rapid and far-reaching changes of internal as well as external factors in the 70's led to the widening of strategic planning. Factors of influence, seen as relevant for successful management, like suppliers of resources, buyers of their output, and their direct competitors were taken into consideration (Gaelweiler 1976, Ulrich 1978, Dunst 1979). This led to the Porter's contending forces model introduced later in the 1980s. The late 70s showed the most significant development in management, like 'long-range planning', 'new venture management' introducing internal and external considerations.

Ansoff (1976) claims that strategic problems of management are treated in the literature from the aspect of optimising specific sections (strategic marketing, strategic technology, strategic procurement, etc.). Whereas, strategic management should comprise planning, co-ordination and control aimed at all business activities, representing an all-encompassing task. The demand for a comprehensive strategic management approach emerged.

Strategic management does not only represent the creation of a strategy or a plan, but also mental attitude at all managerial levels. Andrews (1978) stressing the need for a strategic concept comprising the link between

individual functional business areas also supports this. These perspectives can be illustrated as follows in Figure 2.1.



**Figure 2.1 The interdependence of all managerial levels**

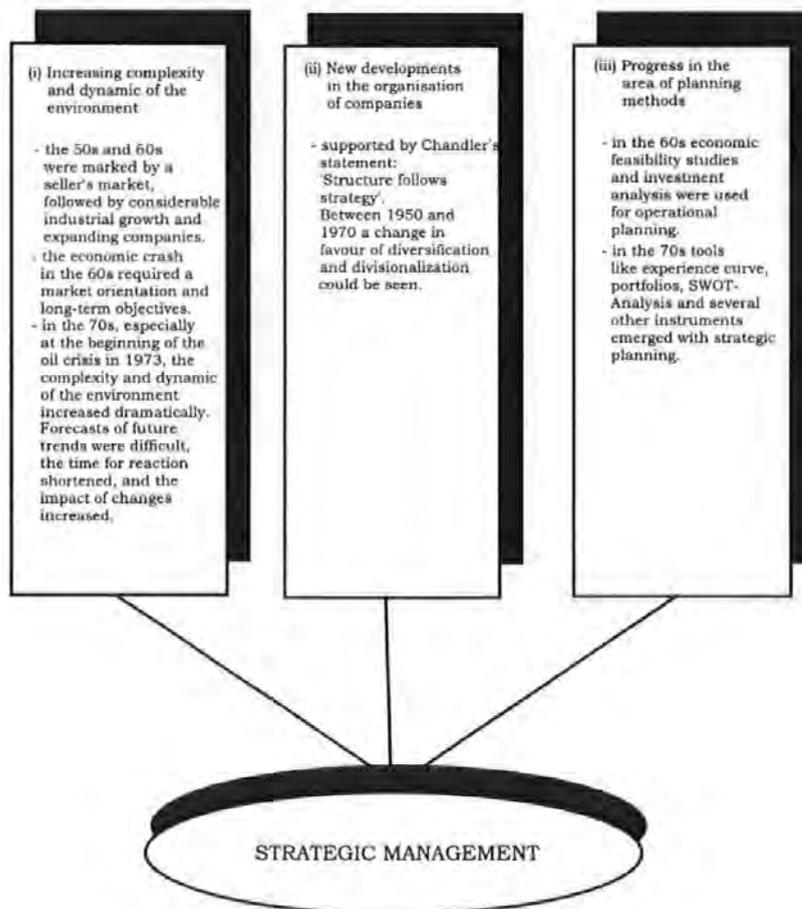
Gaelweiler (1976) describes the aim of strategic management as *"to secure the long term ability of survival and the future potential of success"*.

"Strategic management" and "Strategy" are the commonly used terms in the current management theory. "Strategic management" was named as an official discipline of management science in 1977 at a conference at the University of Pittsburgh/USA (Schendel and Hofer 1979). Strategic management integrates the institutional and functional sections of the theoretical management knowledge. As Schendel and Hofer argue, this represents the third development step of management science on its way of coping with the general difficulties of management, i.e. how to manage a company successfully (see also Kirsch et al 1979).

Companies have moved through four stages of orientation in their strategic planning over the years. In the first stage companies were 'product orientated', then they were 'customer orientated' and in the third stage 'competitor orientated'. Today companies pay attention to customers as well

as competitors, so it is said that companies now show a real 'market orientation' (Hinterhuber 1984, Raffeé 1985, Kotler 1991).

Kreikebaum (1981) summarises some factors, which triggered off the development of strategic management (see Figure 2.2). Peter Drucker (1980) postulates the end of economic continuity and the development of an age of discontinuities. The permanent changes in the company's environment force a continuous reorientation on the "*potential for success*" of a company in securing the existence and realisation of profits. As a result of a rapid increase of uncertainties and risks a company is faced with, a general development of a systematic strategic way of thinking can be recognised in the literature.



adopted by Kreikebaum (1981)

**Figure 2.2** Development in strategic management

In the 1980s, the term *strategic issue management* outlined by Ansoff (1980) emerged. The approach aims at changes in the environment which happen in a

matter of days or months and thus are very difficult to predict. His work stresses the need for already responding to 'weak' and not only to obvious signals which later may have a significant impact on the company. Peters and Waterman (1982) even emphasise the need for a 'real time' response of firms to changes in the environment and a quick internal reaction. They further stress the term 'strategic surprise management' which is likely to be the key term for the future.

Their much discussed investigation conducted by Peters and Waterman identified several characteristics of companies they consider to be excellent: -

- Orientation towards action.
- Learning about needs of customers.
- Promoting managerial autonomy.
- Focusing on the business they know best.
- Having a simple organisational structure.
- Centralised as well as decentralised organisations.
- Paying attention to people, resulting in higher productivity.
- Company philosophy based on values of their leaders.

Hofer et al (1978) identified competitive advantage as a company's unique position developed vis-à-vis its competitors. Ohmae (1982) further describes four basic ways how to sustain and gain competitive advantage representing the major objective of strategic management: -

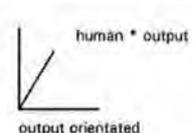
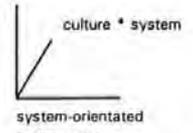
- Concentrate on know-how and resources where the company identifies a potential possibility to gain a competitive edge over its competitors.
- Exploit business units having a 'distinctive competence'.
- Pursue strategies concerning innovation.

- Continuous review of the business approach in order to initiate changes concerning the key success factors.

Turner (1991) defines competitive advantage as the creation of superior performance which is determined by the value the company is able to create for customers. Pümpin (1993), taking up the argument of developing competitive advantage states that it is important to be in a position to measure success of a company against the competitors by the existence of specific superior competencies.

Strategic management can be seen as an extension of strategic planning which places emphasis on both sides of the strategic balance sheet, the external as well as the internal perspective, attempting to maintain an equilibrium (Ansoff 1984). According to Chaffee (1985) strategic management refers to the choice of purpose (business objectives) and the appropriate methods (allocation of resources). He proposes the hypothesis that successful management consists of achieving the best possible fit ('fitness') of the company within its environment. The aim of management is to achieve a complete positioning of a business system in its environment by matching the development of internal capabilities with permanently changing external conditions (Pearce et al 1985, Malik 1986).

Table 2.2 summarises the strategic management approach moving from simple to comprehensive stages, from long range planning, strategic planning to strategic management (Hax et al 1984, Wütherich 1990).

	50th years	60th years	70th years	80 & 90th years
<b>relevant Management problems</b>	- provision of required production capacity - optimize input- and output values - Increasing efficiency by technology	- maintain one's hold on the consumer market - create a demand - to listen to consumer's desires	- operate in a business area, faced with dynamics and uncertainty (consumerism, eastern area,...)	- cope with the increasing complexity and dynamics in all areas of the business - maintain one's position in predatory competition
<b>Management understanding</b>	human-orientated human-relation movement  human * output output orientated		culture-orientated  culture * system system-orientated (cybernetic)	
<b>Stages of development of strategic approaches</b>	<div style="border: 1px solid black; padding: 5px; width: 80px; margin-bottom: 5px;">financial planning</div> <div style="border: 1px solid black; padding: 5px; width: 80px;">operational process and optimization</div>	<div style="border: 1px solid black; padding: 5px; width: 80px; margin-bottom: 5px;">long-term planning</div> <div style="border: 1px solid black; padding: 5px; width: 80px;">several years of growth orientated planning</div>	<div style="border: 1px solid black; padding: 5px; width: 80px; margin-bottom: 5px;">strategic planning</div> <div style="border: 1px solid black; padding: 5px; width: 80px;">improvement of reaction to market and competitive trends</div>	<div style="border: 1px solid black; padding: 5px; width: 80px; margin-bottom: 5px;">strategic management</div> <div style="border: 1px solid black; padding: 5px; width: 80px;">active resources planning in order to gain competitive advantage</div>

adopted with alterations from Wütherich (1990)

**Table 2.2 Development of the strategic think-tank**

However, several areas of concern are outlined by Pearce et al (1985) concerning strategic management: -

- Stating the mission (about the purpose, philosophy, etc.).
- Assessing the internal factors of the company to determine the strengths and weaknesses.
- Assessing the environment of the company to determine the opportunities and threats.
- Analysing options uncovered by the 'fit' of internal factors to the environment.
- Identifying desired options uncovered by the 'fit'.
- Strategic choice of a set of objectives.
- Implementing the strategy, the company has decided upon.
- Continuous control of the process and the assessed factors evaluated in the previous stages.

Pearce et al further refer to seven large-scale business studies in the United States, providing the evidence that companies implementing a long-term strategic approach and employing the concept of strategic management were

more successful than those without. The need for adopting a strategic process is further supported by Wheelen et al (1986) who point out that the process comprises three interacting stages, the 'strategy formulation', 'strategy implementation' and 'evaluation and control' stage.

Idenburg (1993) suggests different styles of strategy development processes. He describes two fundamental dimensions, goal orientation and process orientation, outlining different views of the strategy development process: -

- *Rational planning*

It represents a strategic planning process, assuming that people act in a rational way. The process covers the definition and determination of a mission, evaluation of strengths, weaknesses, opportunities and threats, choice of a strategy and deciding on the implementation. Authors like Ansoff (1984) and Porter (1980,1985) support this view. Idenburg argues that this view is based on assumptions of a more or less predictable environment.

- *Planning as guided learning process*

Representing a process of continuous adaptation (change, problem solving). It is argued that through goal orientation such unpredictable uncertainties can not be covered satisfactorily. This process represents a continuous reflection of the past and the present in order to learn from the experience. Other authors sharing this view are Senge (1990), etc.

- *Logical incrementalism*

It represents an incremental process, each phase after phase having its own internal logic covering elements of both goal and process orientation. This is often found in mergers and acquisitions. Authors like Quinn (1980) come to the same conclusion.

- *Emergent strategy*

It is argued that it is not possible to formulate definite objectives in such a dynamic and complex environment. The main requirement is flexibility. Mintzberg (1987) termed this approach 'emergent strategy'. Objectives have to be adjusted to continuous changes in the environment.

Idenburg emphasises that effective strategies should comprise rational attitudes as well as flexibility and learning experiences.

In the 1990s, management faced increasingly rapid and dynamic changes in the environment. Hahn (1991) outlines major developments that have an impact on management concepts: -

- Increased globalisation.
- Intensified competition.
- Higher prices of raw materials.
- Product life cycles will shorten.
- Increasing demand for R & D and innovation.
- Increased flexibility within a company is required.
- Implementation of inter-industry and international co-operations.

As stressed by Boehler et al (1985) companies need to be prepared for rapid changes in the environment. Companies have to: -

- identify the long-term trend early, to reduce the intrinsic risk (by using an early-identification-system),
- shape the risks (or new opportunities) by actively influencing the market,
- increase the speed of reaction and adaptability, being flexible,

- exchange the short-term view by a strategic concept for management in order to increase the potential for success,
- not only extrapolate past values into the future, but be oriented to consumer's needs and problems to achieve a long-term competitive position.

Other authors also support this view (e.g. Drucker 1984, Turner 1991). Lock et al (1988) put forward several developments in their 'Handbook of Management' which as he claims leads increasingly to a shift in the managerial role and to an increased complexity of the business in the last quarter of the century. It is emphasised that the external environment has a crucial impact on companies. Pümpin (1989) goes further, arguing that "management situations" show new shapes as a lot of things are getting more integrated, fragmented, competent from the lower levels of business, ecological and thus more ethical, integral and thus getting more complicated, risky, global, and sensitive to time aspects. New management concepts are required in order to remain successful. They have to involve shareholders, employees and other groups having a close relationship with the company.

Discussions on organisational and cultural issues increased during the 90s. As regards the development of strategic management, Wilson (1994) comes to the conclusion that the most provocative discovery is that the organisation and the culture of a company are seen as critical aspects for the execution of strategies. He argues that e.g. bureaucracy or poor communications are seen as barriers to change and thus to the implementation of strategies. He further emphasises that motivation, behaviour and values of management play an important role with regard to the company's performance and thus have an impact on success or failure of a strategy. Furthermore, he stresses that planning should base on continuous learning. Firms should be able to generate a *"willingness to respond, quickly and effectively, to change"*.

Organisational learning is seen as necessary, as business operates in an unstable and complex environment. This is also supported by Roome (1994), who refers to learning organisations, as a result of the increasing demand to adapt to the complex environmental situation (Peters et al 1982, Revans 1982). A major influence on organisational learning had been the theories of Argyris et al (1978). The results of the research on excellent firms (Peters and Waterman 1982) indicated that excellent firms are learning organisations. Senge (1990) in his work emphasises the fifth discipline - the systems thinking - as the cornerstone of how learning organisations think about the world. The fifth discipline framework of Senge encompasses personal mastery, sharing mental models, shared vision, team learning and systems thinking. His work further stresses the shift of minds from helpless reactors towards active participants and from reacting to the present towards creating the future. Pedler et al (1997) state that *'a learning organisation is an organisation that facilitates the learning of all its members and consciously transforms itself and its context'*. They also discuss the single and double loop energy flow, indicating that policies infuse operations and ideas infuse actions. Furthermore, a flow from individual to collective and action to operation and vice versa exists. The result is, that personal identity feeds firms' identity and vice versa. They emphasise that influence is both cause and effect rather than within the old management paradigm that are dominated by linear thought processes.

As the complexity, dynamic and hostility of business environments and the pressure from various external sources increase rapidly, firms are required to become faster and more flexible. As already stressed by Kast and Rosenzweig (1974): *"...management has a responsibility for maintaining a dynamic equilibrium...."* new approaches of management in terms of modern organisational structures are demanded in order to meet the challenges of tomorrow (Bleicher 1994). The company's competitive advantage is

increasingly influenced by the factor 'time'. Hammer et al (1993) argue that only few firms, facing stagnating or even shrinking markets showing an increased intensity of competition, plan, organise, implement and control systematically.

In this context, Godet (1998) emphasises that the company's structures will have to move from being adaptive to anticipation of environmental developments. He outlines several strategic consequences of environmental changes firms have to consider over time (Table 2.3)

Environment	Strategic consequences
1. Uncertainty	Adaptability and flexibility Pre-activity and pro-activity
2. Interdependence and complexity	Global vision and simple structures
3. International imbalance	Regulation through information and financial networks
4. Globalisation	Internationalisation of activities
5. Low and uncertain growth of ageing Europe	Fight for market share, productivity, differentiation, Innovation
6. Technological changes	Progress of process, more than products
7. Deregulation	New competitors
8. Economics of diversity	„Multi-small is possible“
Mass production of variety	Autonomous and responsible teams
1. Autonomy, differentiation	Entrepreneurship, intra-preneurship

adopted from Godet (1998)

**Table 2.3 Strategic consequences of changes in the environment**

Generally, it can be concluded that a strategic management process allows firms to envision its future development and develop the appropriate guidelines and objectives to achieve the firms' vision. Identifying its position on the competitive continuum, understanding and monitoring the business environment is of utmost importance (Porter 1980, Mintzberg 1987, Thompson 1993). The business environment will have an increasing impact on a company's competitive advantage, therefore it is vital for firms to understand and continuously monitor their environment. The increasing dynamic of environments requires firms to systematically identify and diagnose critical developments within and outside the firm. Firms have to

identify internal and external strengths and weaknesses thus being able to develop and sustain a competitive edge over competitors.

In order to react appropriately to changes in the environment firms need to utilise a systematic strategic approach allowing them to identify opportunities and threats early enough and according to the strategic significance take the appropriate actions. Chapter 2.2. will outline the core stages of a strategic management approach.

The following management theories such as 'stakeholder relations management', 'organisation development', 'learning organisation', 'leadership', 'core competencies' or 'shareholder value' emerged over the years representing crucial approaches applicable for the achievement of a company's mission and objectives (Hofer and Schendel 1978, Pümpin 1983, Freeman 1984, Wheelen et al 1986, Hamel et al 1989, Thompson 1993). Gomez (1993) points out 'Value management' as a new dimension of strategic management. Increasing the company's value will be the major challenge of management in the future. He argues that until the 80s the achievement of competitive advantage was the core target. Today the focus lies on the use of internal and external potentials of the company in order to increase a 'value'. Furthermore, he points out the importance of the 'Stakeholder-value-approach'.

As the environment gets increasingly dynamic and hostile, firms need to approach the environment in a different way. Chapter 2.3. outlines the emerging spirit of entrepreneurship. Furthermore, the discussion among the social and ethical responsibility of firms, which emerged over the years, will be outlined in the last chapter.

## **2.2    *The strategic management process***

The strategic management process represents a process through stages of analysis, formulation and implementation of objectives and strategy towards the achievement of a firms' vision.

Within the strategic management process, managerial staff firstly has to decide upon the company's mission. Secondly, the internal environment has to be analysed for *strengths* (S) and *weaknesses* (W) as well as the external environment for *opportunities* (O) and *threats* (T). This is carried out through a SWOT-analysis. The strategic factors gained from the SWOT-analysis have to be evaluated. Subsequently management is able to determine business objectives and strategies. After the choice of a strategy an appropriate implementation plan has to be outlined. The control function has to monitor the process continuously concerning the achievement of objectives and allows to be able to react flexibly to any changes in the internal as well as the external environment (Figure 2.3). With the assistance of environmental scanning, representing a process of systematically looking for external information, the company should be able to react ad-hoc. It is important to be informed in time about changes in the surrounding environment (Kreikebaum 1981, Wheelen et al 1986, Kriekamp 1987, Johnson et al 1989, Thompson 1993).

Each business should identify its particular "distinctive competence". It stresses the need for the primary choice of a key position for the company and emphasises the choice of a promising industry and product-market areas, geographical location and the choice of a main functional industry, in which a company operates.

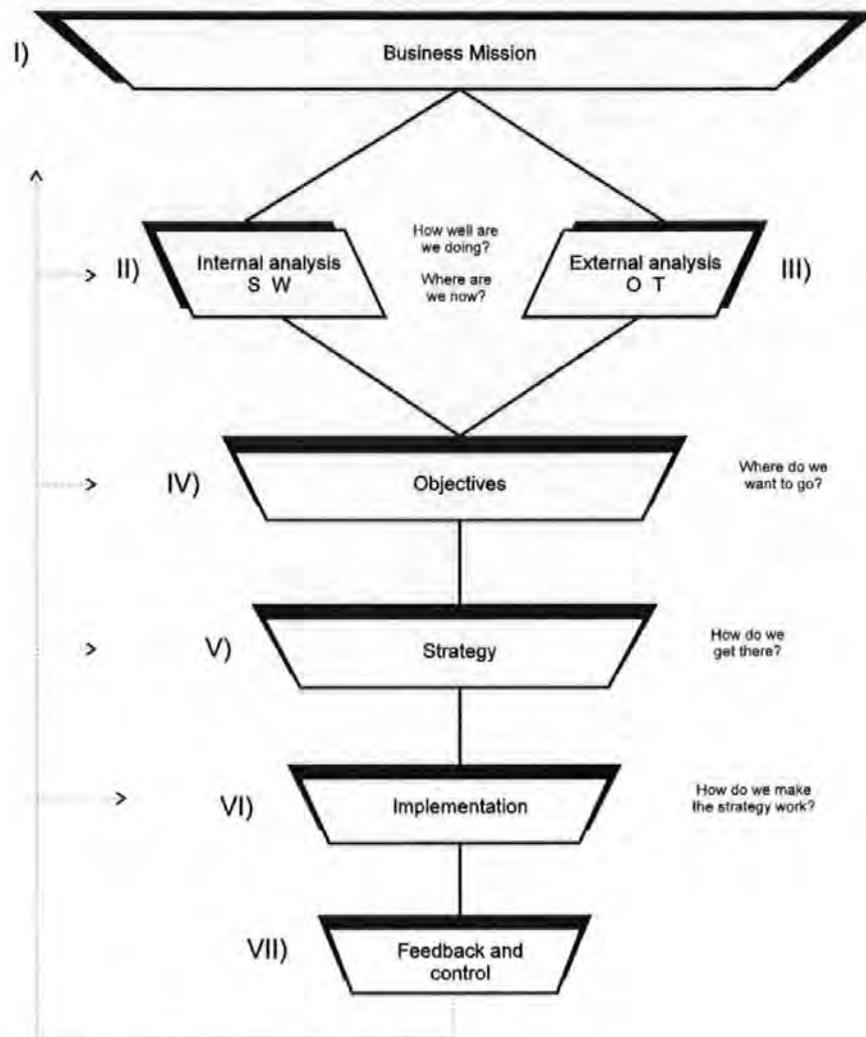


Figure 2.3 Strategic management process

### I. Business Mission (Figure 2.3)

Skipton (1985) describes the mission as the answer to the question, "what do we want to do?". Pearce et al (1985) define the business mission as a statement of the basic business purpose and business philosophy. It represents a statement or intention on products, market area and buyer segment. Contrary to this definition Johnson et al (1989) go further, arguing that according to Richards (1978) the mission represents a 'visionary projection' which should not include any statement on products and markets served by the company. Thompson (1993) later describes the mission as

*"the essential purpose of the organisation, concerning particularly why it is in existence, the nature of the business it is in, and the customers it seeks to serve and satisfy".*

## II. Internal Analysis (Strengths and Weaknesses) (Figure 2.3)

Internal resources have to be analysed in order to assess the performance and capability as well as the competence of a company. It is necessary to evaluate the performance of the company and to assess the capabilities of achieving its objectives.

Strategic planning for the future is only as good as the information on which it is based on. Several commonly used tools for the positioning of a company within a turbulent environment have been developed.

Heuristics for the internal analysis: -

- *Value chain (see Figure 2.4)*

The value chain is a tool to conduct the company's capabilities and identify potential sources of value enhancement.

The *primary* and also the *supporting activities* have to be analysed and evaluated. A strategy has to be sustained throughout the value chain (Porter 1985). The objective of any company should be to offer the greatest added value to its customers. The value chain approach goes even further comprising the suppliers and retailers value chain. A further value chain approach called the business system had been developed by McKinsey & Company.

- *7S-concept (see Figure 2.4)*

This concept allows to evaluate the 'soft-facts' and the 'hard-facts' and represents a systematic way of looking at the human software of the company (Watson 1983). It consists of seven components divided into the hard "S" (*strategy, structure and systems*) and the soft "S" (*style, skills, staff*).

Further tools such as 'experience curve' and 'product life cycle' also have to be considered as important tools for firms (Williamson 1970, Henderson 1974, Kotler 1991).

### **III. External Analysis (Opportunities and Threats) (Figure 2.3)**

Several questions arise: to which extent are the changes in the business environment (i) ascertainable, (ii) identifiable, (iii) predictable and (iv) verifiable? This concern mainly arises due to the increased complexity and turbulence of the social and economic environment requiring firms to be highly sensitive to changes. Therefore, an essential part of the strategic management process is the need for a very good understanding of the surrounding business environment. Hence, it is of utmost importance to systematically analyse the environment. Within the literature several idioms like environmental analysis, scanning, monitoring, forecasting are mentioned. Ansoff (1976) states that environmental analysis has the aim to take up and monitor signals from the business environment, which may have an impact on the firm. The aim is to identify issues - which may have an impact - at an early stage in order to be prepared for them (Aguilar 1967, Albach 1987, Preble 1978). This also supports the need to move towards a proactive business orientation, anticipating changes. Furthermore, the concentration should lie on the continuous monitoring of identified critical issues. The monitoring approach is also termed as a 'radar system' (Wilson 1983). Bates (1985) stresses the need for forecasting the future environment, which also requires looking at the past and current situation. Fahey et al (1977, 1981) outline three kinds of environmental scanning approaches the irregular, the periodic and the continuous. The irregular approach focuses on ad hoc analysis whereas the periodic approach aims at a regular analysis.

Environmental scanning can be regarded as a process of systematically scanning and monitoring external information. Firms should evaluate and

assess external information of the recent past and monitor and evaluate present issues and try to foresee the possible future impacts. In the time of dynamic and complex environments, environmental scanning represents a sensible issue requiring firms to systematically and continuously identify critical developments in the environment. More than ever firms need to be highly sensitive and responsive to environmental issue and according to critical developments take the appropriate actions of strategically significant issues. Therefore, it can be argued that through environmental scanning, monitoring and forecasting firms are more likely prepared to cope with and anticipate environmental changes. Matching opportunities with internal capabilities is a dynamic process as markets evolve, opportunities decline.

The external environment consists of macro and micro environmental forces. Macro oriented forces include e.g. social and economic factors. Micro oriented forces are more related to competitive issues a firm faces on a day-to-day basis, including stakeholders. It has to be emphasised that firms need to understand the various relationships, the different concerns, values and perceptions of stakeholders during the strategic management process. There is much wider range of individuals outside and inside a firm having an influence on business success. Freeman (1984) identified stakeholders as those groups „without whose support the organisation would cease to exist“. Thus, they are playing a vital role in the success of firms.

Heuristics for the external analysis: -

- *PEEST Analysis (see Figure 2.4)*

Market opportunities and threats can be analysed by using the PEEST analysis. The PEEST analysis examines the following external (macro) factors: political, economic, environmental, social and technological factors (Kubicek 1976, Bosemann et al

1986). It enables the company to react upon opportunities and threats in time.

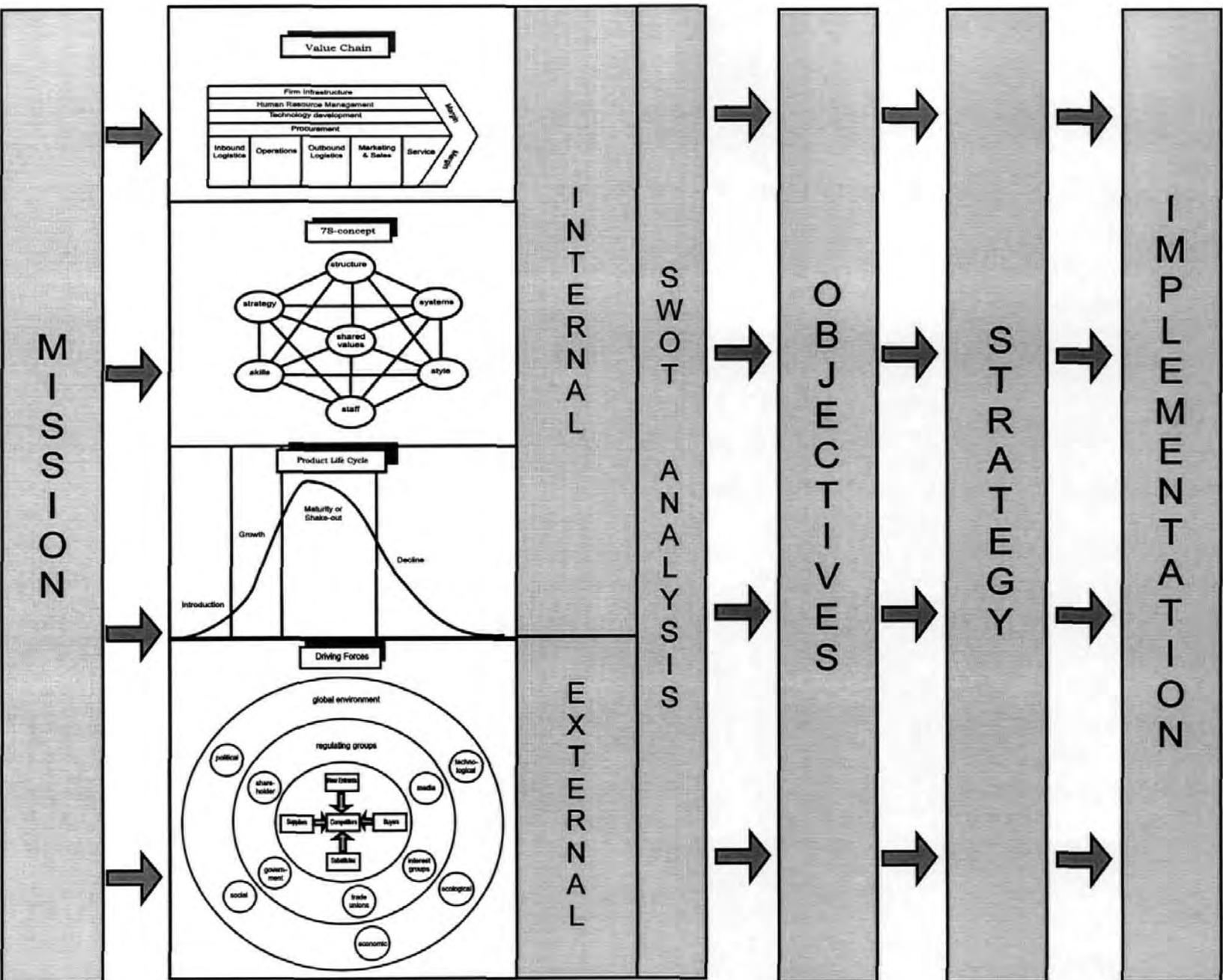
- *Porter's contending forces (1980) (see Figure 2.4)*

The company has to understand the forces having an influence on its environment in order to be able to achieve its targets. The contending forces isolated by Porter are: *threat of new entries* (capital requirements, economies of scale,..), *bargaining power of buyers* (few switching costs, concentration,..), *bargaining power of suppliers* (no substitute products, high switching costs,..), *pressure from substitute products* and *intensity of rivalry among existing competitors* (slow industry growth, high exit barriers, ..).

The data obtained from the internal and external analysis (SWOT-analysis) is then used to determine the strengths and weaknesses of a company in order to analyse the company's capability to take advantage of opportunities and to cope with existing threats in the market (Bosemann et al 1986, Johnson et al 1989, Kotler 1991). From the data the questions "How well are we doing?" and "Where are we now?" can be answered. These two questions are the first basic cornerstones of strategic planning.

The information derived from the SWOT-Analysis is assessed to give a competitive view and is then used to identify business objectives and following from this, strategies (Mauthe 1984, Sanderson 1989).

Figure 2.4 Strategic management process (Heuristics)



#### **IV. Objectives (Figure 2.3)**

The question "Where do we want to go?" has to be answered. This is the second basic cornerstone of strategic planning. Barnard (1938) referred to business objectives as an important component of management.

Objectives lead on to targets which are to be achieved in areas like profitability, competitive position, leadership in a business area, etc.. This coincides with determining a time scale stating by when targets should be achieved. Objectives should be suitable, feasible and acceptable (Hax 1984, Pearce et al 1985, Thompson 1993).

#### **V. Strategy (Figure 2.3)**

The question "How do we get there?" is to be answered. This can be called the third basic cornerstone of strategic planning.

Strategies describe how a company uses its existing and potential strengths to achieve its objectives (Kreikebaum 1981). Within the concept of strategic management, strategy represents:

*"the decision process that conjoins the organisation's capability with the opportunities and threats it faces in its environment" (Rowe et al 1982).*

Strategy is a method of how to achieve pre-defined objectives. The strategy resulting from the objectives should rarely change. The firm does not often start 'de novo' in its choice of strategy. However, within its strategy it still has to be flexible.

Porter (1985) outlines three generic strategic positions a company can choose:-

- *Cost leadership*

Through aggressive construction of efficient-scale facilities, reduction of costs through experience and 'economies of scale'.

- *Differentiation*

Adding value to products or services, which distinguish them from those of competitors and make them unique.

- *Focus*

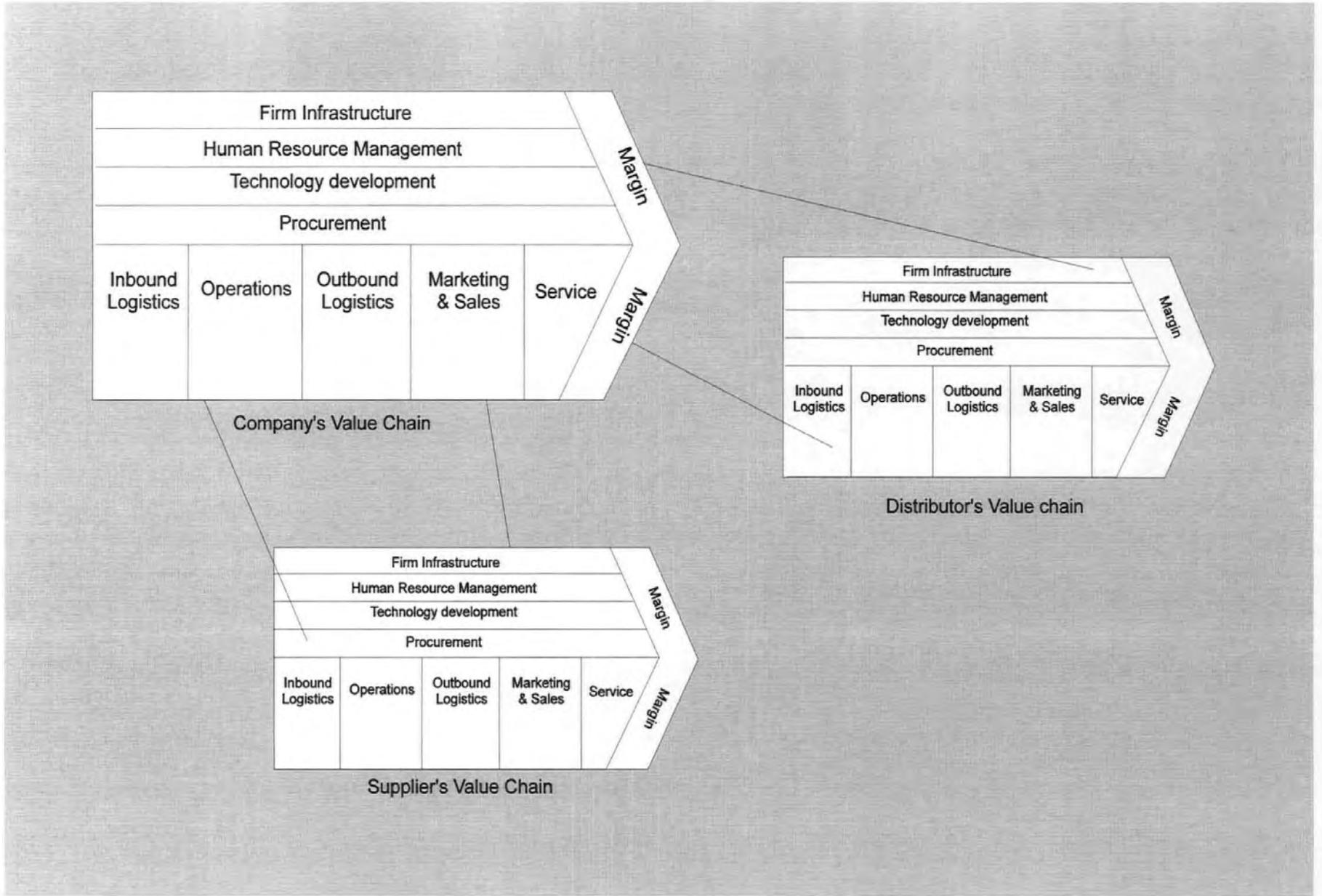
On a particular buyer group, segment of product line or geographic market. It can be pursued based on differentiation or cost leadership.

The choice of the generic strategy is important for a company to sustain its competitive advantage.

However, strategic success depends on the way a company behaves as a whole and the way functions are integrated. Companies need to look for competitive advantages beyond their own value chain, i.e. into the value chain of its suppliers, distributors and ultimately customers (Figure 2.5), relating to interdependent activities.

Thus a company might help a major supplier to reduce its costs and subsequently has the opportunity to source at lower costs. The best example for the importance of such interdependent linkages of value chains is just-in-time (JIT) delivery. Various authors point out that the linkages between the various activities are of increasing importance (Porter 1985, Johnson et al 1989, Kotler 1991, Thompson 1991).

Figure 2.5 The generic value chain system



In the last decade, the role of suppliers respectively the relationship between customers and suppliers changed significantly. Suppliers manage more and more activities and responsibilities. Firms aim at looking at the supply chain, in a holistic way. The demand for managing supply chains more effectively increased in the last decade. Hall (1999) stresses the importance of collaborative relationships between suppliers and customers and thus supporting a partnership relationship. The factor 'time' has become increasingly a critical issue, new rules of competition emerged. The increasing international trade leads to the fact that components are obtained and distributed world-wide. All this requires appropriate supply chain management processes. The supply chain represents a network organisation involving upstream and downstream linkages, producing value in terms of products and services. As more and more firms tend to concentrate on core businesses and thus outsource certain activities, the trend goes more to the existence of 'virtual' or 'network' organisations (Parker et al 1997, Christopher 1998). Furthermore, the trend leads to a material flow from a multitude of suppliers, requiring a higher degree of integration and co-ordination. Hall (1999) would prefer to talk about 'demand' instead of 'supply' and 'network' instead of 'chain', which seems to describe the situation best. Yet it is interesting to note that Christopher (1998) argues that one should rather talk about competition between supply chains than between firms. Aitken (1998) refers to a supply chain as a *'network of connected and interdependent organisations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users'*. Parker et al (1997) in their work point out that a true supply chain management approach even moves towards a learning organisation.

Generally, strategy can be seen as the translation of the determined objectives, the way of achieving goals. Pearce et al (1985) suggest eleven basic strategic options a firm may decide upon concentration, market

development, product development, innovation, horizontal or vertical integration, joint ventures, concentric or conglomerate diversification, retrenchment, and divestiture (Johnson et al 1989, Ansoff 1965, Thompson 1993).

Referring to strategic instruments for the choice and achievement of a strategy the picture is quite diverse. The 'Portfolio-Analysis' method proves to be an extremely important tool. The most important of these methods are:-

- *Ansoff Matrix (see Figure 2.6)*

The potential market growth can be evaluated. The matrix offers four options. The options are shown with the level of risk involved with each option. The '*market penetration* approach', where the company operates with their existing products on its existing market involves the smallest risk. The next options, which are increasingly more risky, are *market development* and *product development*, where the company changes only one variable (e.g. new market with existing products). The *diversification* approach has the maximum risk, where the company introduces new products in new markets (Ansoff 1965).

- *General Electric Matrix (see Figure 2.6)*

It represents a multifactor portfolio matrix. The businesses can be rated according to *market attractiveness* (high, medium, low) and *competitive position* (strong, average, weak). The matrix is appropriate for the assessment of SBUs. The market attractiveness and competitive position depend on several factors, which are weighted. The matrix offers three strategic approaches: (i) invest/grow, (ii) selectivity/earnings and (iii) harvest/divest.

- *Boston Consulting Group (BCG) (see Figure 2.6)*

This matrix allows an assessment of products according to the relative market share held by the company (Boston Consulting Group 1977). The BCG-matrix offers four cells. The *question mark* represents the introduction phase of a product (low share, high growth). The *stars* represent the growth phase (high share, high growth). The *cash cow* represents the maturity phase of a product (high share, low growth) and the *dogs* represent the decline phase (low share, low growth).

Other methods are: -

- *Gap-Analysis (see Figure 2.6)*

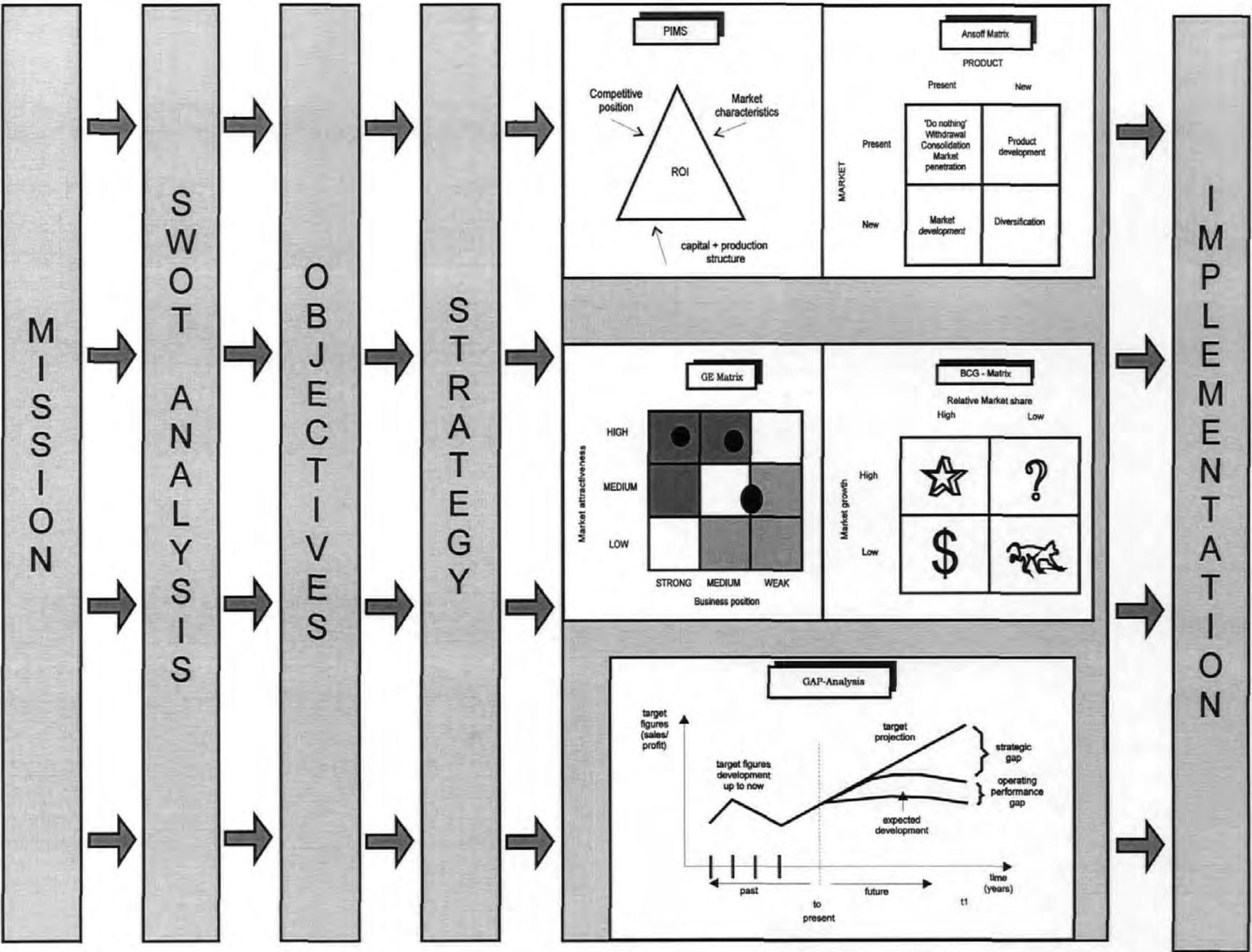
This is seen as the classic instrument for strategic planning. Its purpose is to recognise strategic problems early (e.g. through a S.W.O.T. analysis) to initiate counter-actions.

- *PIMS-Project (see Figure 2.6)*

(Profit Impact on Market Strategies)

The model aims at identifying crucial factors and how each factor is related to performance. PIMS e.g. can be used to help forecasting profits, aid to make effective allocation of capital, manpower and other scarce resources. It can assist to manage managerial performance and can be used to appraise new business opportunities (Welge 1985, Porter 1985).

Figure 2.6 Strategic management process ('Portfolio-analysis' methods)



## **VI. Implementation (Figure 2.3)**

The question "how do we make the strategy work?" is to be answered. This can be seen as the fourth basic cornerstone of strategic planning.

Having decided on the strategy to pursue, a plan for implementation has to be evaluated that exploits the existing competencies leading to the achievement of objectives and moves within the business mission (Greenley 1986). Giles (1991) identifies the process of planning and implementation as a powerful vehicle to bring about a change within the organisation. He argues that an effective strategy requires visibility, consistency and direct bearing on customers. He describes the implementation phase as being

*"...concerned with putting strategy into practice. It can be described as the execution of tactics both internally and externally so that the organisation moves in the desired strategic direction".*

In the absence of appropriate implementation mechanisms, strategic planning simply becomes "paralysed by analysis". Ansoff (1984) and several other authors suggest that a more comprehensive management concept is needed, which will assure an effective and timely implementation of strategic plans by taking into account also organisational aspects.

## **VII. Feedback and Control (Figure 2.3)**

As already stressed by Lorange et al (1974) control systems are increasingly of great importance to strategic management, especially due to the complexity and dynamic of the external environment and the increasing diversification of businesses and markets. Feedback and control is of prime importance. It is required to review the management process and assess the extent to which the objectives are achieved. The process has to be seen as a dynamic system requiring continuous monitoring of the process as well as the environment (Pearce et al 1985, Hinterhuber 1992, Thompson 1993). It is important that the company takes the appropriate action quickly enough.

It can be concluded that 'speed', 'time' and a more proactive and future oriented management approach is required in order to cope with the rapidly changing environment. Therefore, it can be argued that something beyond or a more different approach to the traditional strategic management may be necessary. Entrepreneurship represents an emerging management approach, of great interest to researchers and industry.

### **2.3 An emerging spirit of strategic management: Entrepreneurship**

The dynamics and changes of national and global markets and technologies have led to the emerging of the entrepreneurial spirit. Drucker (1984) emphasises the burst of entrepreneurial activities due to the rapid evolution of technology and knowledge, demographic trends, the venture capital market and the fact that the American industry began to learn how to manage entrepreneurship. Entrepreneurship has entered the academic and non-academic area, new academic journals emerged, courses at universities have been established, etc. (Stevenson et al 1990).

In the emerging years, the term entrepreneurship has merely been associated with a person who starts a new business. Nowadays, commonly used terms in the literature are: 'corporate entrepreneurship', 'organisational entrepreneurship', 'intrapreneurship' and 'entrepreneurial management'.

Stevenson et al (1990) refer to the earliest interpretation of the word 'entrepreneurship' by Richard Cantillon (1725) who states that entrepreneurship ' *bears the risk of buying at a certain price and selling at an uncertain price*'. Jean Baptiste Say (1803) states that the entrepreneur is "*the protagonist of economic activity in general*" bringing together the factors of production. Beaudeau (1797) describes entrepreneurship as a person bearing risks, planning, supervising, organising and owning. Schumpeter (1934) interprets an entrepreneur as someone "*who carries out new combinations*" determining the new combinations as the introduction of a new good, new method of production, opening up new markets, new sources of supply and carrying out new organisations in an industry. In this context, the spirit of entrepreneurship was associated with innovation. Also Schendel et al (1979) identifies areas of further research in order to test and further develop 'strategic management'. One of their issues was 'entrepreneurship'. Several other authors relate Entrepreneurship to 'growth' (Drucker 1985), 'innovation'

(Backman 1983) and 'flexibility' (Birch 1987). Vesper (1984) identifies three types of corporate venturing: *new strategic direction, initiative from below the organisation and autonomous business creation.*

Stevenson et al (1990, 1995) develop an interesting view of corporate entrepreneurship proposing the following interpretation:

*"Entrepreneurship is a process by which individuals - either on their own or inside organisations - pursue opportunities without regard to alienable resources they currently control".*

Furthermore they outline the following six propositions: -

- An entrepreneurial organisation is that which pursues opportunity, regardless of resources currently controlled.
- The degree to which a firm is entrepreneurial depends on the attitude of individuals within the firm.
- The firms' entrepreneurial behaviour is positively correlated to the efforts to place individuals in a position to detect opportunities, to train and reward them.
- Firms, which make a conscious effort to lessen negative consequences of failure when opportunities are pursued, will exhibit a higher degree of entrepreneurship.
- Next to the success rate the amount of entrepreneurial behaviour will be a function of the employees' ability to exploit opportunities.
- Organisations, which facilitate the emergence of informal internal and external networks, and allow the gradual allocation and sharing of resources, will exhibit a higher degree of entrepreneurial behaviour.

They further point out that firms may adopt either an entrepreneurial style or an administrative style. Issues, which may urge the firm to be more entrepreneurial or administrative oriented, are outlined in Table 2.4.

←		→		
Entrepreneurial		Administrative		
focus		focus		
	Characteristics	Pressures	Characteristics	Pressures
<b>A</b> <b>Strategic orientation</b>	Driven by perception of opportunity	Dismissing opportunities  Rapidly changing technology, consumer economics, social values and political rules	Driven by controlled resources	Social contrasts  Performance measurement criteria  Planning systems and cycles
<b>B</b> <b>Commitment to seize opportunities</b>	Revolutionary, with short duration	Action orientation  Narrow decision windows  Acceptance of reasonable risks  Few decision constituencies	Evolutionary, with long duration	Acknowledgement of multiple constituencies  Negotiation about strategic course  Risk reduction  Co-ordination with existing resource base
<b>C</b> <b>Commitment of resources</b>	Many stages, with minimal exposure at each stage	Lack of predictable resource needs  Lack of control over the environment  Social demands for appropriate use of resources  Foreign competition  Demands for more efficient resource use	A single stage, with complete commitment out of decision	Need to reduce risk  Incentive compensation  Turnover in managers  Capital budgeting systems  Formal planning systems
<b>D</b> <b>Control of resources</b>	Episodic use or rent of required resources	Increased resource specialisation  Long resource life compared with need  Risk of obsolescence  Risk inherent in the identified opportunity  Inflexibility of permanent commitment to resources	Ownership or employment of required resources	Power, status and financial rewards  Co-ordination of activity  Efficiency measures  Inertia and cost of change  Industry structures
<b>E</b> <b>Management structures</b>	Flat, with multiple informal networks	Co-ordination of key non-controlled resources  Challenge to hierarchy  Employees' desire for independence	Hierarchy	Need for clearly defined authority and responsibility  Organisational culture  Reward systems  Management theory

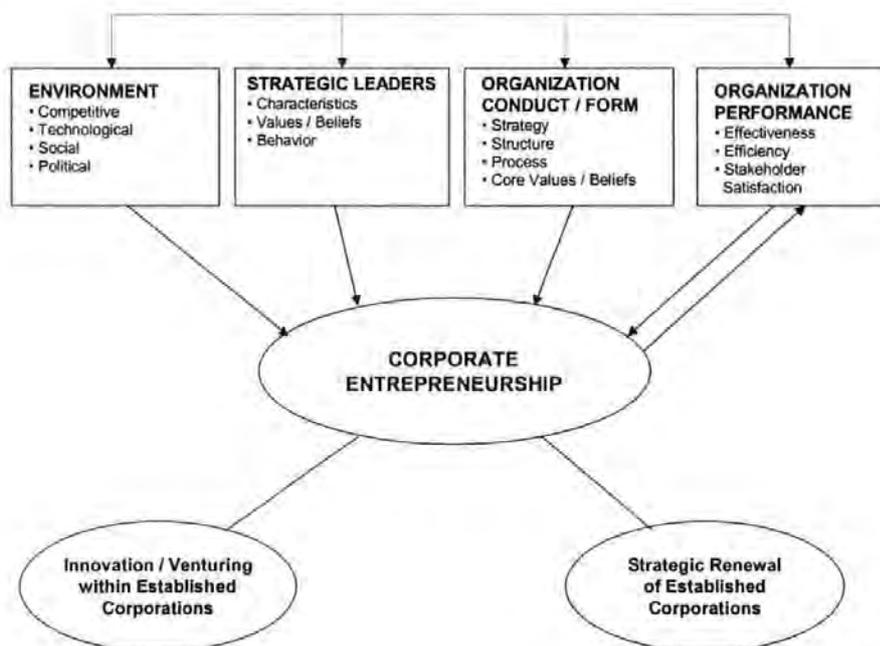
adopted from Stevenson et al (1995)

**Table 2.4 The entrepreneurial culture vs. the administrative culture**

Guth et al (1990) describe corporate entrepreneurship in a broader view more related to business generation, like

*“Corporate entrepreneurship involves the notion of birth of new businesses within on-going businesses, and beyond that, involves the transformation of stagnant, on-going businesses in need of revival or transformation.”*

They argue that a transformation, a new combination of resources from an 'old' to 'new' firm reflects entrepreneurial behaviour. They argue that strategic renewal includes activities such as refocusing a business competitively, introducing major changes in marketing or distribution, redirecting product development and reshaping operations (Ellsworth 1985, Guth et al 1990). However, Miller (1983) in his work states that being entrepreneurial requires firms to do more than just perform simple changes to technology or product-lines or imitate competitors and that entrepreneurs are not necessarily financially sound. Guth et al try to establish a relation between corporate entrepreneurship and the elements of strategic management (Figure 2.7). They emphasise the need to maintain an equilibrium between all the elements of strategic management.



adopted from Guth et al (1990)

**Figure 2.7 Relation between entrepreneurship and strategic management**

Based on this framework Guth et al identify six issues to be further inquired: -

- *Environment influences corporate entrepreneurship*  
The more hostile the environment the more entrepreneurial the business.
- *Strategic leaders influence corporate entrepreneurship*  
Management style of managers has an impact on the whole organisation.
- *Organisation form/conduct influences corporate entrepreneurship*
- *Bureaucratic structures and processes are regarded as non-supportive.*
- *Business performance influences corporate entrepreneurship*  
Excess resources may be more supportive to innovation.
- Corporate *entrepreneurship* influences performance

A slightly different view of corporate entrepreneurship is given by Sopford et al (1995) who point out that three different types exist: -

- The creation of new businesses within an existing organisation also called corporate venturing or intrapreneurship (Burgelman 1983, Kuratko et al 1990).
- The transformation or renewal of existing organisations through the renewal of key ideas (Kanter 1983).
- Changing the 'rules of competition' in its industry. The behaviour is also associated to a 'frame-breaking change' (Schumpeter 1934, Stevenson et al 1985).

With regard to entrepreneurship as a management style Covin et al (1990) outline characters of style a firm may adopt. They argue that the style depends on the degree to which extent management is willing to: -

- *risk taking*

To pursue risk-opportunities with the objective to achieve high returns.

- *proactivity*

To try to introduce products, services, technologies first and thus induce actions of competitors, rather than responding to competitors.

- *innovation*

Concentration on R & D. Time-based innovations, time-based product introduction. Introduce research and development activities without any timely delay.

These characters have also been outlined by Miller (1983) in his work. It can be argued that the entrepreneurial strategic orientation is roughly similar to the 'prospector firm' of Miles et al (1978) and the 'entrepreneurial organisation' as outlined by Mintzberg (1973).

Hisrich (1992) describes entrepreneurship as

*„the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological, and social risks, and receiving the resulting rewards of monetary and personal satisfaction“.*

Interestingly, Sahlman et al (1992) outline how entrepreneurship is characterised by managers. They relate entrepreneurship to being innovative, flexible, dynamic, risk taking, creative and growth orientated. The entrepreneurial style is pursued in order to aggressively gain or maintain a competitive advantage.

The more *conservative* management style stands for characteristics as non-risk taking, non-proactive and non-innovative efforts. These companies will pursue a more cautious, competitive orientation. Companies may decide to

imitate competitors' moves rather than initiate the first move. Companies are declared to be mainly internally orientated and pursue a reactive and short-term strategic approach (Klandt 1993). It can be argued that this strategic orientation is roughly similar to the 'defender firm' of Miles et al (1978) and the 'adaptive organisation' by Mintzberg (1973).

However, it can be concluded that despite the diversity of terms and types of entrepreneurship, entrepreneurship can be regarded as commonly based on an *innovative and proactive stance, creation of new capabilities and seeking for opportunities* (Schumpeter 1934, Kirzner 1973, Sopford et al 1995). Sopford et al (1995) outline attributes which are common to all types of entrepreneurship: *proactiveness* (Mintzberg 1973, Miller et al 1984, Covin et al 1990), *aspiration beyond current capabilities* (Hamel et al 1989, Stevenson 1990), *team orientation* (Burgelman 1983, Kanter 1983), *capability to resolve dilemmas, and learning capability* (Senge 1990).

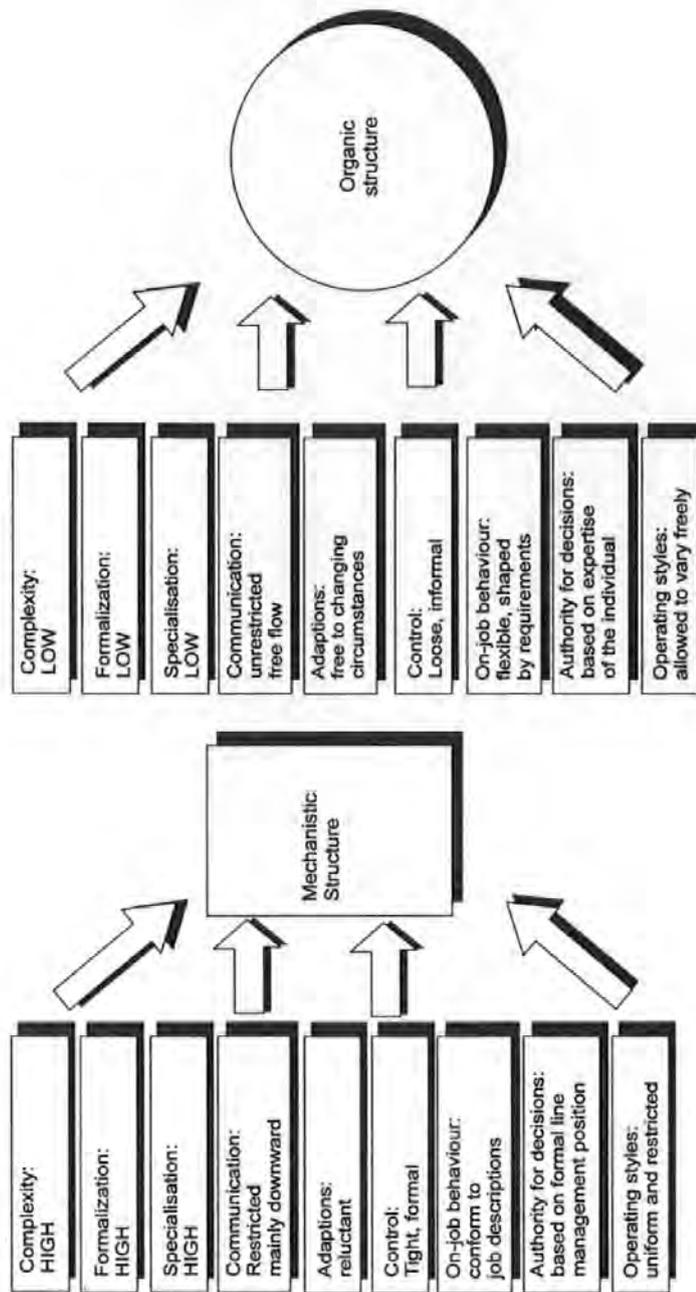
In the context of entrepreneurship, Kuratko et al (1990) define intrapreneurship as a way to enable or improve innovative abilities among employees. Intrapreneurship is identified as "*entrepreneurship inside of a corporation where individuals will champion new ideas from development to reality*". Kuratko et al stress the need for an appropriate environment within a firm supporting entrepreneurial behaviour (see also Miller 1983, Covin et al 1990). Miller (1983) revealed that depending on the type of firm a significant relationship between entrepreneurial behaviour and several other internal variables can be concluded. This is further supported by Kanter (1985) and Fry (1987) who also identified several factors, which can be related to success or failure of developing an entrepreneurial environment. Possible factors, which are needed to enhance an entrepreneurial environment, are: *use of rewards, appropriate management support, resources availability, organisational structure* and the willingness to take *risk*.

The work of Kuratko et al (1990) on the intrapreneurial assessment instrument (IAI) stress the need for further issues: *a rewarding system, allow failures* and *maintain a flexible organisation* in order to enable the development of an innovative climate. According to this, they develop a concept of an 'intrapreneurial strategy' in order to create the appropriate innovative environment and thus encourage employees to be more entrepreneurial.

It can be stated that entrepreneurship is not confined to an individual, but affected by the firm's norm, culture and structure. Covin et al (1990) state that a successful firm pursuing an entrepreneurial behaviour needs an appropriate supportive culture and organisational structure (Gibb 1999). It can be argued that companies have to be able to modify its organisational structure appropriately in order to deal with the emerging challenges (Volberda 1997). A research conducted by Covin et al (1988) reveals that organic structures promote entrepreneurial behaviour and enables the firm to respond rapidly to changes of the environment rather than mechanistic structures.

The organisational structure may vary on the continuum from a relatively *organic* and *mechanistic* organisational structure (Burns et al 1961, Thompson 1967, Mintzberg 1979, Nystrom et al 1981, Baron et al 1990, Gordon 1993). Figure 2.8 outlines features of the organisational structure.

An organic structure tends to be more flexible, informal and offers high speed in response. This structure corresponds roughly to the 'adhocracies' mentioned by Mintzberg (1983). The mechanistic structure tends to be more traditional, bureaucratic and formal, which may not encourage creativity and innovation and it reduces the adaptability and responsiveness of a company. Some companies e.g. which pursue mass production tend to be more effective with mechanistic structures. Organic structures are seen to be more appropriate for innovative and proactive management approaches.



adopted with alterations from Baron et al (1990)

**Figure 2.8 Mechanistic and organic structures**

The Harvard Business Review magazine asked a number of managers who are involved in managing entrepreneurial environments what issues they consider important. They (several authors 1995) point out that an appropriate culture in terms of *promoting personal freedom, management's ability to trust people and high involvement of employees* is required. However, several issues such as appropriate risk/reward ratios within the incentive structures, corporate goals related to new ventures, flat organisations and pushing down decision-

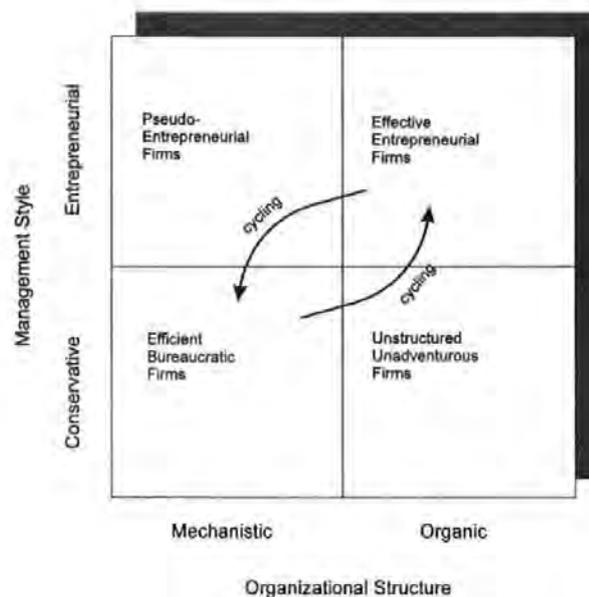
making into the organisation are necessary. They stress those two issues, the continuous communication and encouragement of customer-oriented behaviour are seen as critical issues for change. It is argued that understanding the customer is a key to innovation and entrepreneurial success.

According to their study, Covin et al (1990) conclude that

*“entrepreneurial firm behaviour correlates positively with firm performance in the presence of an organic organisational structure. Entrepreneurial firm behaviour correlates negatively with firm performance in the presence of a mechanistic organisational structure.”*

Thompson (1993) argues that the management style and the supporting organisational structure have an impact on the companies' performance. Child (1972) already stated earlier that companies' timely response has a significant impact on their performance which requires an appropriate style and structure.

Covin et al (1990) emphasise that it is of utmost importance for management to maintain an equilibrium between the organisational structure of the company and the type of entrepreneurial behaviour. According to this, they suggest four types of management styles and organisational structures (Figure 2.9).



adopted from Covin et al (1990)

Figure 2.9 Organicity and Entrepreneurship

The portfolio of Covin et al (1990) classifies companies in the following stages:

- ***Effective Entrepreneurial***

Companies are able to develop advantages through flexibility. They have an organic organisational structure and pursue an entrepreneurial approach. Low bureaucratic barriers encourage innovations (Burns et al 1961, Mintzberg 1979). The structure offers the opportunity of rapid response to a hostile environment (Lawrence et al 1967)

- ***Pseudo Entrepreneurial***

Companies show willingness to high-risk projects and innovation but may be hampered by rigid organisational structures. It can be interpreted that companies do not have the ability to take complete advantage of the entrepreneurial orientation, as it is not supported by its structure. However, they argue that companies may choose this structure in order to increase the predictability in an uncertain environment. Stevenson et al (1985) put forward that companies may emphasise the importance of clearly defined roles and centralised decision processes in order to ensure planning, organising and directing activities.

- ***Efficient Bureaucratic***

Companies, which face a more stable and predictable environment, may decide to pursue a more conservative style. This is supported by a mechanistic organisational structure to ensure efficiency. The environment may not require companies to respond quickly. In stable and less predictable environments, less internal communication, more centralisation and more rigid strategies and thus less entrepreneurship is required (Khandwalla 1977).

- ***Unstructured Unadventurous***

Companies have an adaptable organisational structure. However, they do not take complete advantage of this flexible structure due to their conservative

style. They may not be efficient in performing standardised tasks, which may be required by a conservative management style.

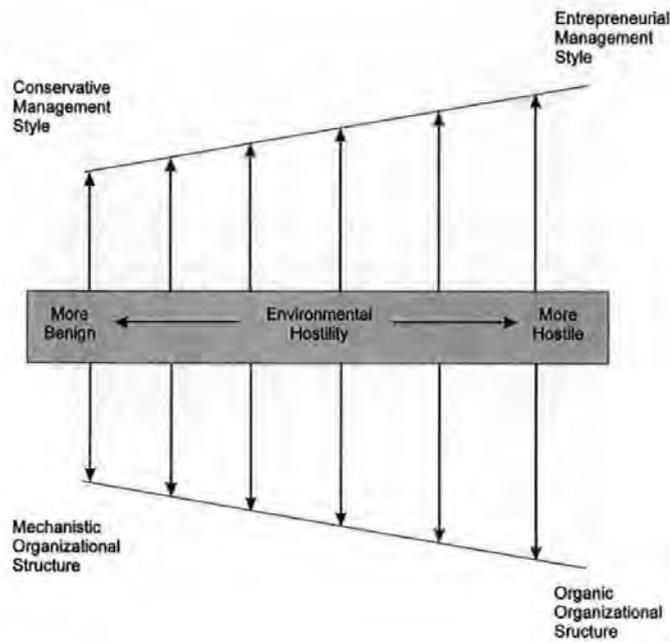
Covin et al point out that effective-entrepreneurial companies and efficient-bureaucratic companies pursue an organisational structure and a management style, which can be declared as coincident. The structure a company has decided upon supports the management style pursued and thus can be utilised effectively. Covin et al determine the effective entrepreneurial as well as the efficient bureaucratic approach as being appropriate for the short- and long-run success.

It can be concluded that it is necessary to manage both dimensions simultaneously in order to survive or even grow in a constantly changing environment. The organisational style has to change in order to match appropriately with the specific management style a company has decided upon. This has already been stated by Khandwalla (1977) who stresses that a successful management consists of achieving the best possible fit of the management style and the organisational structure in relation to its environment.

Several authors outlined that the business environment has an increasing impact on the management style and organisational structure (Figure 2.10). It is argued that a hostile environment triggers an entrepreneurial behaviour (Burns et al 1961, Chandler 1962, Lawrence et al 1967, and Thompson 1967, Covin et al 1990).

Hisrich (1992) argues that the term entrepreneurship evolved over the time as the business environment became more dynamic and complex. A hostile environment is characterised by intense competition, precarious industry

setting and a relative lack of exploitable opportunities, whereas a benign environment offers richness in investment and marketing opportunities.



adopted from Covin et al (1990)

**Figure 2.10 The impact of environmental hostility**

Miller (1983) conducted a study in order to analyse the relationship between management style and the hostility of a company's environment. He determines a positive correlation between the entrepreneurial style (in terms of innovation, risk-taking and proactiveness) and environmental hostility. These results are further shared by Khandwalla (1977), Singh (1968), Zahra et al (1988). A further investigation by Miller et al (1983) reveals that a strong relationship exists between the environmental dimension (dynamics, hostility and heterogeneity) and the degree of analysis and innovation in successful firms.

A research among small firms conducted by Covin et al (1989) tries to determine to which degree environmental hostility influences firm's performance. They come to the conclusion that small firms with high entrepreneurial orientation and firms with high organicity indices (organic structures) perform best in hostile environments whereas small conservative

firms perform best in more benign environments. Stopford et al (1995) analysed 10 firms facing difficulties and operating in hostile environments. They collected data in between 1985-90. Based on this investigation they conclude, that these firms were able to drop past behaviours and adopt a strategic approach of fostering entrepreneurship. Furthermore, they detected that seven firms had transformed to an organic firm according to the definition given by Miller 1983.

It may be argued that hostile environments require firms to be highly flexible, proactive and anticipatory. Klandt (1993) defines flexibility as

*“the degree to which an organisation possesses a verity of actual and potential procedures, and the rapidity by which it can implement these procedures, in order to increase the steering capacity of the management and improve the steerability of the organisation”.*

Several authors argue that the opportunity for greater speed and flexibility is supported by shallow hierarchies and open communication or in other words by an organic organisational structure which offers the best potentials to respond rapidly to environmental forces. Companies serving a well-known and relatively stable market can be quite successful having a mechanistic structure, as rapid response and flexibility may not be required (Burns et al 1961, Lawrence et al 1967). This is further supported by Khandwalla (1977) who reveals that high-performing companies in intense competitive markets adopt an organic structure, whereas companies, which face low competitive pressure in the market, adopt more mechanistic structures. Chakravarthy et al (1998) argue that new organisational forms have to be utilised in order to cope with 'hyper'-competitive environments. They point out that traditional bureaucratic organisations are not state-of-the-art anymore. In their work they refer to an 'entrepreneurial network', which requires fundamental changes in the behaviour of all corporate members.

Nevertheless, there are also opposing voices from various authors who have reached different conclusions. Normann (1971) conducted a research on product-development projects in Swedish companies and conclude that organic structure does not always enhance innovation. Furthermore, Robertson (1972) in his research did not found any support for an organic versus mechanistic argument as regards successful and unsuccessful innovations.

However, it should be mentioned that the choice of an organisational structure does not have to lie at one of the two extremes. On the one hand, a business unit may require innovation, creativity and flexibility in order to cope with the changing environment. But on the other hand some divisions of the firm where sufficient penetration has been achieved may require a degree of centralisation and formalisation. Nystrom et al (1981) refer to a two-stage process. The first stage relates to the initiation of a process and the second stage stands for the implementation of a process. Thus, an organic structure may be more appropriate for proposal generation and a mechanistic structure for the implementation of proposals. Hence this stresses the flexibility - stability dilemma, as for different stages different structures may be appropriate. Covin et al (1990) also argue that firms may organise divisions as if there were different organisational structures due to the fact that each division may face different environmental conditions.

An interesting statement of Nystrom et al (1981) states that

*„...organisations should never reach static equilibria. They may reach temporary equilibria; but as time passes, information-processing requirements always change, and organisational configurations should evolve to match these new requirements“.*

Klandt (1993) who emphasises that companies have to prevent themselves from 'overshooting' and probably becoming a 'chaotic' structure, shares this view. Covin et al (1990) furthermore point out that the four business types

should be seen as a dynamic process rather than being static conditions. Management has to be able to cycle between the stages which depends on the circumstances the company faces, emphasising that cycling requires a change in both dimensions simultaneously (Covin et al 1990). They argue that successful firms manage to cycle between being 'effective entrepreneurial' and 'efficient bureaucratic'.

They outline five implications for management in being able to successfully adopt and maintain a management style supported by organisational structures: -

- *Diagnose your environment*  
It is important to understand the surrounding environment.
- *Diagnose your business*  
Assess the firm's actual behaviour and the organisational structure it has.
- *Manage your style and structure*  
Initiate change if it is required to match the environment.
- *Cycle*  
Determine short- and long-term strategies for cycling behaviour.
- *Monitor*  
It is important to monitor the rapidly changing environment.

Maidique et al (1984) also point out that successful high-technology firms

*„manage differently at different times in the evolutionary cycle of the firm.....it alternates periods of consolidation and continuity ..... that can lead to dramatic changes in the firm's strategies, structure, controls, and distribution of power..."*

Finally, it can be concluded that maintaining an equilibrium between management style and organisational structure, depending on the

environmental hostility, will have an impact on the company's success (Covin et al 1990).

The need for entrepreneurial capacities is further emphasised (Burkinshaw 1997, Gibb 1999). Entrepreneurship relates to the entrepreneurial design of organisations; it is about creating an entrepreneurial culture within an organisation. Gibb (1999) in his work outlines several components of entrepreneurial management. The stakeholder approach as well as organisational learning are seen as key components of entrepreneurial management. Furthermore, a business and social community responsibility is also regarded as a key component.

## **2.4 Social responsibility and business ethics as part of strategic management**

The late 1970s are marked by keywords like "social responsibility, morals and ethics" of companies (i.a. Davis 1973, Zenisek 1979, Carroll 1979, Davis et al 1975). This can be regarded as the socio-cultural approach. Firms need to achieve a satisfaction of various demands rather than exclusively produce and distribute products and services. Firms need to be increasingly oriented towards the values and concerns of their stakeholders, which are closely involved with the firm and have an increasing influence on the firm's success. The stakeholder responsibility goes beyond the economic responsibility; being responsible for impacts of the business on the society.

During the 1970s the call for social responsibility increased in importance, demanding that firms also have to follow social objectives among economic objectives. A "new lifestyle" has been called for, based on changes of management values. Values like materialism, domination of nature and egoism have to diminish in importance, in favour of values like solidarity, modesty, spontaneity and a friendly behaviour towards nature (Wenke et al 1978). During the 1970s, the discussion concerning social responsibility has concentrated on the degree to which companies have to take over responsibility, which exceeds economic performance (Strebel 1980). Referring to the literature the picture of what is covered by the term 'social responsibility' is very diverse.

It appears to be necessary to outline the difference between „Ethics“ and „Social Responsibility“ more in general. Business ethics is about the fact that businesses should behave in accordance with defined rules of moral philosophy. The defined rules may consist of what is to be defined as „right“ and „wrong“. In some situations, one may come to the same conclusion independently of the classification if it belongs to 'ethics' or 'social

responsibility'. Several authors argue that ethics provide more coherent demands than social responsibility. However, it can be concluded that both terms leave enough room for interpretations.

Pfriem (1986) in his book on the relationship of ethic and economy refers to Aristotle who called for natural economies and warned against the endless desire to satisfy needs. According to Hess (1988) a company behaves ethically if it succeeds to maintain an equilibrium between the following groups: *product - market - customer, human, capital and ecology*.

Concerning 'ethics' the crucial problem lies in defining what is 'good' or 'bad' (Hutchinson et al 1997). Welford (1995) stresses the difficulty of defining the term business ethics. He argues that the definition depends on the values of individuals, the culture and on the formally existing codes of conduct (Wheelen et al 1986). Ethics need to be translated into codes of conduct, communication and information (Welford 1997). Relating ethics to an organisation, Welford refers to the 'actual value system' representing the moral climate of staff having an influence on the firms' behaviour. Furthermore, he emphasises the need for a 'value system', which represents a minimum level of ethics to be fulfilled by firms. Business needs to have a clear set of values. Concerning the term 'ethics' various terms such as moral, ethical, good, efficient, rational, effective, fair, best and improved are discussed resulting in totally different meanings.

Hosmer (1994) in his work summarises ten of the most cited principles expressed in applied ethical terms: -

- Self-interest (ethical egoism)
- Personal virtues (Aristotle)
- Religious injunctions (St. Augustine and St. Thomas Aquines)

- Government requirements (Hobbes and Locke)
- Utilitarian benefits (Bentham and Mill)
- Universal rules (Kant)
- Individual rights (Jefferson and King)
- Economic efficiency (Smith, Friedman and Blinder)
- Distributive justice (Rawls)
- Contributive liberty (Nozick)

Furthermore, Hutchinson et al (1997) give a detailed description of the word 'ethics' and outline the major meta-theories on ethic. They also stress the problem of defining the codes of conduct classifying what is moral, however, agreeing that ethics is more concerned about moral choices. They express the following description of business ethics, as:

*„the systematic study of moral (ethical) matters pertaining to business, industry or related activities, institutions, or practices - or beliefs“  
(Donaldson 1992)*

and

*„ethics that may be defined as the study of what is good or right for human beings. It asks what goals people ought to pursue and what actions they ought to perform. Business ethics is a branch of applied ethics; it studies the relationship of what is good and right to business“  
(Hoffmann and Moore 1990).*

Kuratko et al (1998) define ethics as a set of principles recommending behavioural codes that explain what is good or bad and may additionally cover moral obligations which may go beyond legal limits. They further argue that universal principles can not exist due to the dynamic and ever changing environment, so that the definition of universal principles have to be determined dynamically rather than static.

Social responsibility is related to the social relationship between businesses and the society (i.a. Davis 1973, Picot 1977, Ulrich 1978, Zenisek 1979,

Caroll 1979, Davis et al 1975, Wartick et al 1985, Koontz et al 1988). According to Picot (1977) social responsibility represents a behaviour that is related to the avoidance of problems in areas which are seen as important for society (e.g. preservation of the nature and living conditions). He argues that the objective of social responsibility can only be achieved through renunciation of middle and long term opportunities of profitability. Furthermore, he argues that a company can only successfully pursue this objective as long as the company does not face any fierce competition - especially from those companies, which do not pursue a policy of 'social responsibility'.

Friedman (1970) refers to social responsibility of firms as a purely economic issue. Other authors see social responsibility to be based more on ethical foundations. Steiner (1972) in his work on social responsibility states that social responsibility is related to the social contract (a set of accepted relationships, obligations and duties) between business and the society in which it operates. He further outlines a concept of social responsibility, which ranges from 'traditional economic production', 'government dictated', and 'voluntary area' to 'expectations beyond reality'. Caroll (1979) in his work refers to four aspects of social responsibility, which should be taken into consideration, i.e. the economic, legal, ethical and discretionary categories of firms' performance. Zenisek (1979) stresses the fit between society's expectations and business' ethics.

A further - more broader - definition of social responsibility is given by Davis et al (1975) who define social responsibility as „*the managerial obligation to take action to protect and improve both the welfare of society as a whole and the interest of organisation*“. Furthermore, Wartick et al (1985) outline that social responsibility is determined by the society. The task of a firm consists in identifying and analysing societies' expectations related to the firms' responsibilities and then determining an approach for being responsive to

changing demands and thus being able to implement an appropriate response to social issues.

However the majority of authors agree that a firm's social responsibility have to go beyond legal duties (Davis 1973, Carroll 1979, Zenisek 1979). Alexander et al (1974) point out that a firm's reputation is also strongly led by the reputation of being socially responsible and thus represents a crucial issue of the firm's success. Bowman (1974) and Albach (1976) also come to the conclusion that social responsibility is of utmost importance for the firm's viability. A deterioration of the stakeholders' view of a firm's social responsibility may have a negative impact on the firms' reputation (Bowman et al 1975). This is also supported by Donaldson et al (1983) who point out that firms should be concerned with more than purely making money, emphasising the need to consider concerns of their stakeholder. Clarkson (1995) also identifies the orientation towards the stakeholder as an appropriate approach for being socially responsible. In context with the environmental debate several authors increasingly demand firms to perform social audits, supporting transparency and accountability (e.g. Welford and Jones 1996, Welford 1997, Sillanpää 1998).

Ackerman (1973) identifies three generic steps concerning a management approach of social responsibility: allocation of responsibilities, executive performance evaluation and management through systems. Furthermore, Kay (1993) outlines three ways of how social responsibility can be related to strategic management. Social responsibility represents an input to strategy and is a source of strategic choice and actions in order to develop a strategic plan. It is also part of the infrastructure that supports the value chain and thus represents a mainstream management task. Preece et al (1995) defines social responsibility as a supportive issue of management by utilising the value chain for the assessment of the firm's social responsibility. Kuratko et al (1998)

state that social responsibility represents an obligation of business to society, covering various areas (social, ecological, etc.). A framework developed by Prakesh-Sethi (1996) classifies social responsibility into three categories which may represent a firms' social intensity (Table 2.5).

<b>Dimension of Behaviour</b>	<b>Stage One: Social obligation</b>	<b>Stage Two: Social Responsibility</b>	<b>Stage Three: Social Responsiveness</b>
<b>Response to social pressures</b>	<ul style="list-style-type: none"> <li>• Maintains low public profile, but if attacked uses PR methods to upgrade its public image.</li> <li>• Denies any deficiencies.</li> <li>• Blames public dissatisfaction on ignorance or failure to understand corporate functions.</li> <li>• Discloses information only where legally required</li> </ul>	<ul style="list-style-type: none"> <li>• Accepts responsibility for solving current problems.</li> <li>• Will admit deficiencies in former practices and attempt top persuade public that its current practices meet social norms</li> <li>• Attitude toward critics conciliatory.</li> <li>• Freer information disclosures than stage one.</li> </ul>	<ul style="list-style-type: none"> <li>• Willingly discusses activities with outside groups.</li> <li>• Makes information freely available to public.</li> <li>• Accepts formal and informal inputs from outside groups in decision making.</li> <li>• Is willing to be publicly evaluated for its various activities</li> </ul>
<b>Philanthropy</b>	<ul style="list-style-type: none"> <li>• Contributes only when direct benefit to it clearly shown; otherwise, views contributions as responsibility of individual employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Contributes to noncontroversial and established causes.</li> <li>• Matches employee contributions</li> </ul>	<ul style="list-style-type: none"> <li>• Activities of stage two plus support and contributions to new, controversial groups whose needs it sees as unfulfilled and increasingly important.</li> </ul>
<b>Firm's general reaction</b>	<ul style="list-style-type: none"> <li>• Simply react to legal obligations</li> </ul>	<ul style="list-style-type: none"> <li>• Actively respond and accept responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Proactive and willing to be evaluated by the public</li> </ul>

adopted with alterations from Kuratko et al (1998)

**Table 2.5 Stages of social responsibility**

A plethora of assessments concerning the association of social responsibility and the firm's financial performance can be found in the literature. Two main strands of thoughts can be distinguished. On the one hand, several authors state that firms being socially responsible experience a competitive disadvantage due to increasing costs (Vance 1975, Ullmann 1985, etc.) and on the other hand it is argued that firms' social responsibility leads to a higher productivity due to employees' commitment and identification (i.a. Moskowitz 1972, Soloman et al 1985).

A research performed by Owen et al (1993) reveal that firms believe that social responsibility has an impact on market share and thus on competitive advantage. Moreover, Burke et al (1996) state that social responsibility should be seen as a long-term decision, since win-win situations are recognisable. However, it is argued that the crucial point is in maintaining an equilibrium between monetary and social objectives. Several empirical studies examine the relationship between social responsibility and financial performance. Aupperle et al (1985) conducted a study in order to analyse the relationship between corporate social responsibility and profitability. In their article, several studies, which were conducted in this context, are summarised. They argue that many studies identify a relationship between social responsibility and profitability, however those, which were more methodologically, did not support a relationship. The studies differed in their research methodology applied and in the measures of social responsibility and financial performance. Aupperle et al utilised the following components: economic, legal, ethical and discretionary concerns in order to come up to a definition of corporate social responsibility given by Carroll (1979). Their study concluded that no statistically significant relationship between social responsibility and profitability exists and therefore it can be argued that socially responsible firms are not more profitable than other firms. In contrast, McGuire et al (1988) point out that their results indicate a relationship between a firm's prior performance and corporate social responsibility and furthermore the results indicate an association between measures of risk and social responsibility.

However, it can be concluded that being the best in providing quality products and services is not enough to establish a positive corporate image. Klassen et al (1996) point out that an environmental award presented to a firm, noted by the public has an impact on the market value of the firm. Moreover, Hosmer (1994) points out that ethics should be incorporated into strategic

management, as firms should aim at establishing trust and loyalty on part of their stakeholders (Barnard 1938, Simon 1947).

Generally it can be said, that discussions within the literature varies between social responsibility resulting in a competitive disadvantage, image damage, or being an integrated part of business philosophy, and an image improvement up to providing competitive advantage. Moreover Peters and Waterman (1982) point out that ethical behaviour and social responsibility produces not just survival but excellence.

However, literature on social responsibility e.g. as buying criteria of consumers is rare. Some authors (Anderson et al 1972, Webster 1975, etc.) point out that social responsibility can also be identified as a non-economic buying criterion by consumers.

Over the years, the discussion concerning ecological issue is being increasingly associated with the social responsibility of a firm. Welford (1995) refers environmental management to ethics as a '*standard of right conduct*'. Kuratko et al (1998) assess the environmental issue as one of the major challenges of social responsibility. They further emphasise that the environmental issue constitutes an enormous challenge for entrepreneurs in respect to the development of socially responsible organisations. They argue that entrepreneurs need to pave the way for new approaches. Moreover, they point out that the term „ecovision“ (developed by Shareef 1991) represents a leadership style for innovative corporations. They state that 'ecovision' encourages open and flexible structures encompassing the whole organisation and the environment, as social demands evolve.

### 3 The ecological challenge

The Greek word 'oikos' from which the term ecology stems, originally translates 'home', 'house' or 'household'. It describes the surrounding environment of human beings (Mogel 1984). Hence, the term "ecology" is the science of the relationship between human beings and their environment (Brockhaus 1949).

A plethora of different definitions of the term environment exist in the literature and the term environment is used in many contexts:

*Generally it can be said that environment means the totality of existential factors hence factors which determine the physical, psychological, technical, economical and social conditions and relationships of human beings.*

Jacob (1994) proposes the hypothesis that

*"environmental problems are interpreted as proof of the need for an alternative ecological world view based on the idea that mankind are part of the living system and that human interaction with the rest of nature should be dictated by this imperative".*

The generic term 'environment' comprises sociological, biological, physical and ecological components (Wicke 1989). Following this definition, the terms "ecology" and "environment" will be handled synonymously throughout this and following chapters.

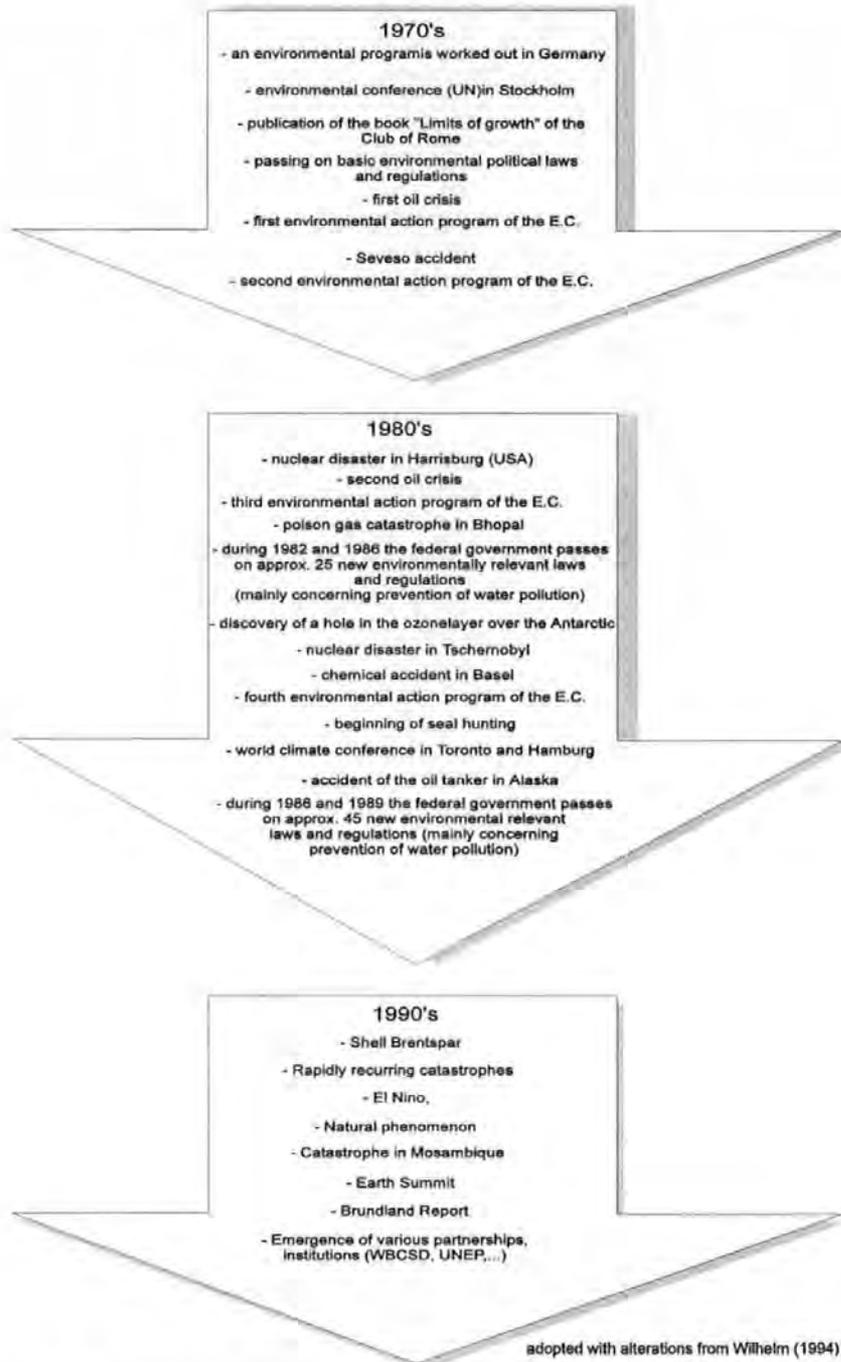
The major concern of an economy is that, on the one hand, it is faced with limited resources on the "input" side and, on the other hand, with ecological pollution on the "output" side. Resources are not inexhaustible but finite. This represents a physical limit to growth (Malthus 1970, Ehrlich 1971). It can be assumed that the consumption of non-renewable resources will increase exponentially as the world population will increase exponentially (Zorn 1979). At the present stage of technological development environmental pollution reaches an ecological limit that affects living conditions on the "spaceship

Earth" (Wegehenkel 1989). Waste, industrial effluents, exhaust fumes and toxic substances are the result of modern production processes. By spoiling the natural biological cycle, which provides the basis of man's livelihood, the human being destroys the prerequisite for its existence (Bookchin 1974).

Production as a corporate division stands particularly under pressure by the increasing public interest in ecology. This is especially visible by having a closer look at the change in the psychological meaning of the term "smoking chimney". In the post-war period, the population was pleased to see the chimney smoking. "The smoking chimney" stood synonymously for the economic miracle, growth and prosperity. Today the smoking chimney stands synonymously for terms like ecological pollution, desulphurization plant, etc..

During the 70s, news of the dramatic and numerous accidents in the environment (first oil-tanker accidents, contaminated lakes, etc.) have increased. In 1972, Meadows published a study called "Limits of growth". He referred to the limitation of resources, increased ecological pollution and the exponential growth of the population. He calculated an economic and social collapse by the 21st century.

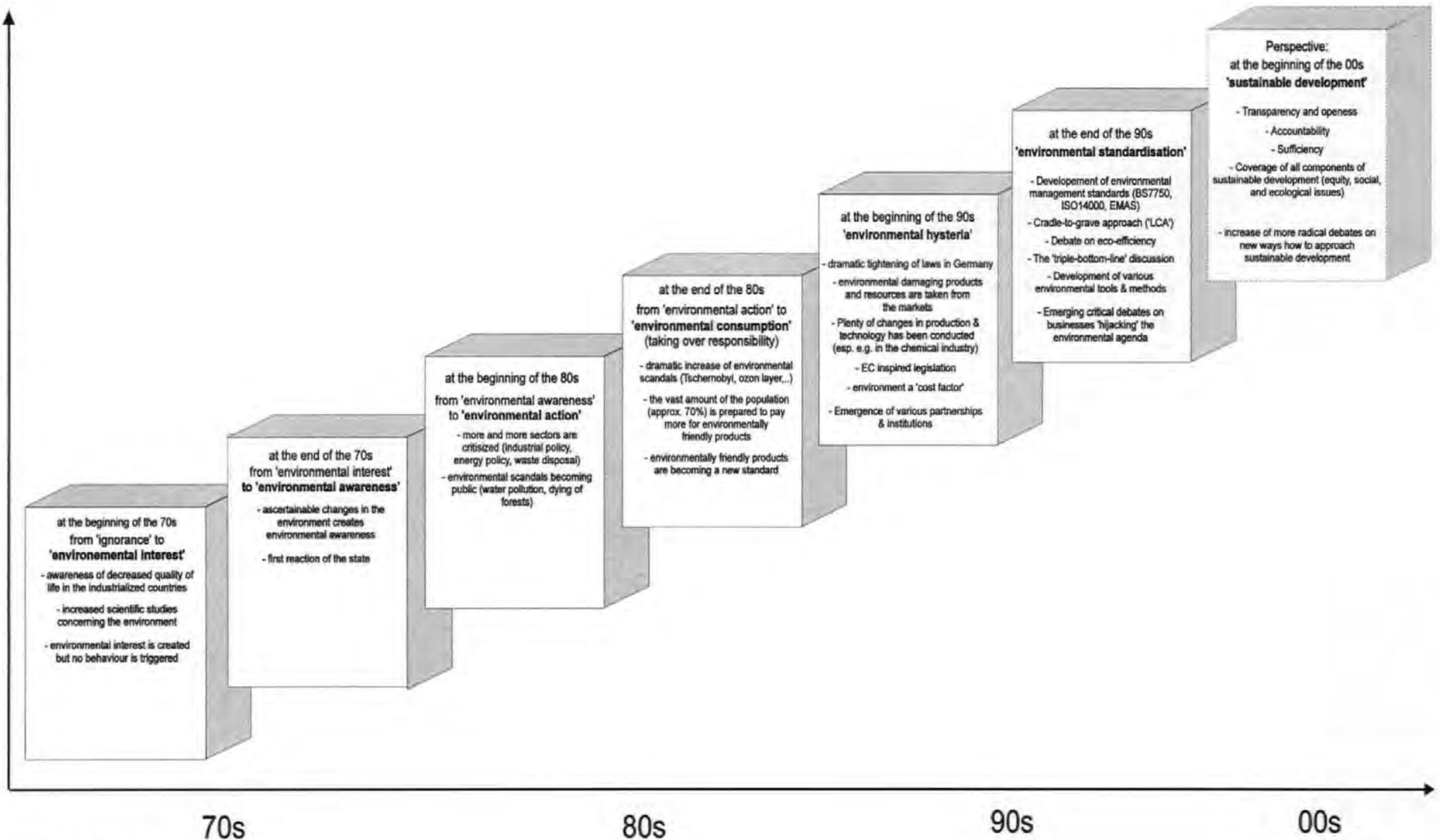
During the 80s ecological protection increased in ethical value and importance. The limits of growth became the major concern coupled with an increasingly disastrous waste situation and the awareness of preventing air- and water pollution (Brand 1982, Wilhelm 1994). Figure 3.1 outlines the phases of the environmental development. Within the last three decades, it has been realised that the population is getting more and more aware of the ecological consequences (Hopfenbeck 1990).



**Figure 3.1 The Environmental development**

Figure 3.2 summarises the phases of environmental awareness. The 90s are marked by developments of standards and an increasing debate on the contribution of business to the environmental development. Businesses are coming under critique. Concerning the achievement of sustainable development; there is still a long way to go, but it might be that not enough time is left.

Figure 3.2 Phases of environmental awareness



adopted with alterations from Sietz(1992)

### **3.1 *The ecological scenario***

According to a study carried out by the Fraunhofer-Institut für Systemtechnik und Innovationsforschung (1994), the world-temperature will rise by at least 1,8 °C by the year 2030. The rise of the earth's temperature is a result of the greenhouse effect (Redclift 1995). The sea level will rise by 18 cm and the output of carbon dioxide will double. It is a fact that the output of carbon dioxide increased by 25 percent since the beginning of industrialisation and the sea-level rose by 10 cm at least. The Federal Environment Agency states that the German government pays already 50 billion DM a year for the removal and the avoidance of environmental damages (Huhndorf 1994).

A wide range of publications (UN agency reports, World Bank reports, World Watch papers, etc.) describe the ecological situation and its damage. According to the vast amount of publications, information and data concerning environmental pollution, it will be aimed to show a broad overview of the key factors of environmental pollution.

#### **Ground / Soil**

The soil as a production factor is polluted by harmful industrial substances and waste-products. It is contaminated with dangerous waste from the past which is especially the case in the Eastern part of Germany and in the Eastern Bloc countries. Loss of agricultural land and soils, habitats and species as well as biodiversity are the result. The extinctions of species are rated at 100 a day (UNEP, Brown 1995, Dudley et al 1995, Reid 1995, Redclift 1995).

#### **Deforestation**

The rates of deforestation has accelerated. The forest expanse in the developing countries reduced by approx. 50 % in the last 20 years. In the Northern industrial countries the tree population is endangered to a proportion of 50 % (Statistisches Bundesamt 1991). The loss of tropical forests is rated

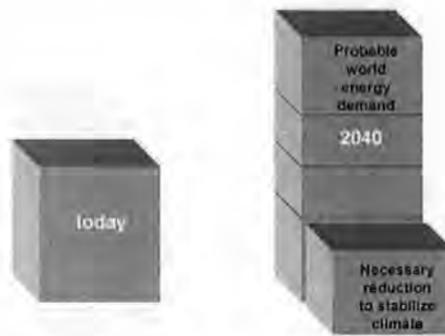
at 170.000 square kilometres per annum. On the one hand, developed nations associate forests with the 'lung' of the planet and developing nations associate them with a source of income (Redclift 1995).

### **Population**

The world population accounts to approx. 6 thousand million people. The projection is that it will reach approx. 8.5 thousand million people by 2025, with a yearly increase of approx. 100 million (OECD 1991). The UNO world-conference held in Cairo in 1994 discussed the population explosion and ways to limit its increase. Several conferences followed with the objective to cope with this issue. The increasing population leads to an increasing consumption of both renewable and non-renewable resources. The industrial production has increased 50 times since 1900. The major challenge of the future will be closing the widening gap of growing demand and diminishing resources (Reid 1995, Redclift 1995). A further problem will increase in importance over the years; the pressure of migration. Europe's proportion of the world population is constantly shrinking. More and more people aiming at equal wealth will migrate to towns, cities and regions. These issues will further provide a challenge to sustainable development. Consumption patterns have to change. Industries also have to take over the responsibility to educate customers in their behaviour (Welford 1997).

### **Air pollution**

The chimneys and exhaust pipes in Germany let approx. 16 million tons of toxic and harmful substances into the air (BUND 1988). Air is seen as part of human food like water. Climatologists demand that the global CO<sup>2</sup> and other greenhouse gas emissions should be reduced by at least a factor 2. However, forecasts reveal that the consumption may double during the next 40-50 years. This would require a productivity improvement by 300% in order to close the gap (Figure 3.3).



adopted by European Commission Report (1995)

**Figure 3.3 CO<sup>2</sup> and other gas emissions**

### **Depletion of the ozone layer**

In the 1970s, concerns about the depletion of the ozone layer emerged. Holes in the ozone layer have been detected, as well as a thinning of the layer. The impacts out of this situation are still not clear, however, It is argued that it will have severe effects on the food chain (Redclift 1995). It was estimated that the ozone layer depleted by 3% - 5% yearly between 1969 and 1988 in the Northern Hemisphere (OECD 1991). The depletion is mainly caused through the usage of CFC, which was an essential component in industrial and consumer goods areas (author anonymous 1987, 1989).

### **The greenhouse effect**

At the end of 1980, climatologists published that the greenhouse gases lead to a warming up of the earth. The burning of fossil fuels will trigger a climatic catastrophe (Greenpeace 1989, Leggett 1991). The temperature is estimated to rise by every decade. The global warming is caused by the usage of carbon dioxide, CFC and the ozone caused at the ground level (Bossel 1990). Germany produces approx. 50 times more carbon dioxide than India or China. Supposing the demand for refrigerators and cars etc. increases dramatically in China (in order reach the Western standard), it would be necessary to reduce the output of carbon dioxide produced by western countries by the amount of those developing countries. Consequently, this would lead to the fact that the output level of carbon dioxide is maintained which is contrary to the target of

reducing the output world-wide. Figure 3.4 summarises by 'whom' and 'how' the greenhouse effect is caused.

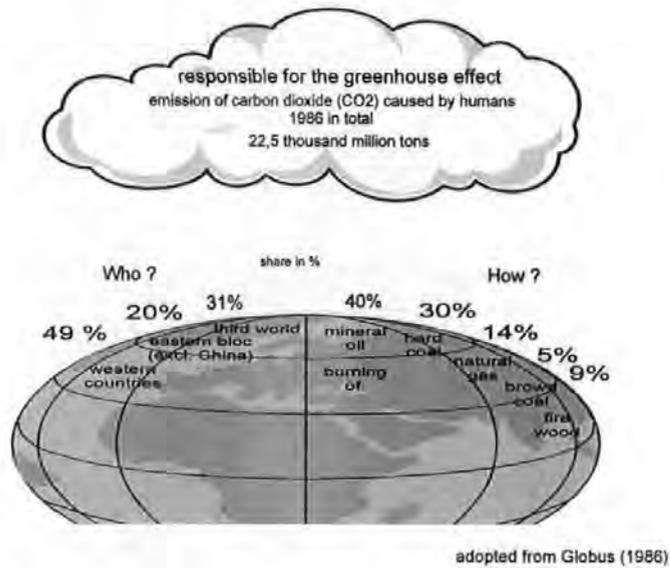


Figure 3.4 The greenhouse effect

### Water pollution

Industrial effluents pollute many inshore waters. Some are so badly soiled that they cannot recover in order to supply drinking water (BUND 1987). The rivers in Germany are still transporting toxins by the ton into the North Sea and are thus contributing to its contamination. This river pollution endangers people, because 60 % of the drinking water is filtered from the rivers. 40 % of the drinking water comes from ground water, which is polluted with pesticides from agriculture (BMZ 1993). Fish stocks decline, collapse of fisheries, and depletion of fresh water are the result of our behaviour (UNEP, Brown 1995, Dudley et al 1995, Reid 1995, Redclift 1995).

### Rubbish and Recycling

The volume of rubbish in Germany increased fivefold since 1950. Today approx. 30 million tons are produced yearly. Not only the volume changed but also the composition and nature of the waste material. Packaging made up 50 % of all rubbish. Disposable wrapping requires approximately twenty times more energy in the production. It needs more water and pollutes the air more

than reusable wrapping. Waste recycling is more important than waste disposal (Kopytziok 1992, Spiegel 1993). Since December 1991, the manufacturers and retailers in Germany have the obligation to return transport packaging in order to reuse or re-utilise them. Since April 1992, the outer packaging, mainly used for marketing reasons, has to be recycled. Since January 1993 the sales packaging has also to be taken back by retailers and producers. The packaging has to be reused and re-utilised as a matter of priority (Schedler 1991). Table 3.1 outlines the recording and re-utilisation quotas for packaging material enacted by the government in 1991.

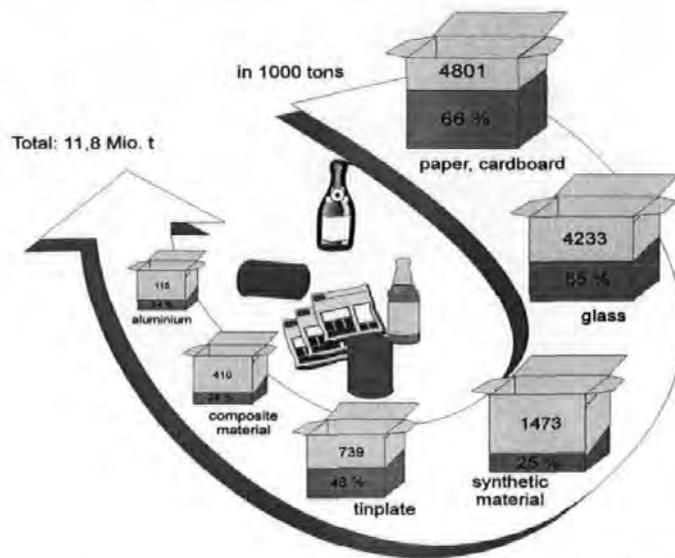
packaging material	1993		July 1995	
	recording quota %	utilization quota %	recording quota %	utilization quota %
glass	80	70	80	80
tinplate	40	85	80	80
aluminium	30	80	80	80
cardboard paper	30	80	80	80
synthetic material	30	30	80	80
composite material	20	30	80	80

adopted with alterations from Bundesgesetzblatt (1991)

**Table 3.1 Quotas for packaging material**

According to the government, the packaging material can also be collected through a third party instead of being collected at the shop. The industry established a nation-wide rubbish collection system named the "Duales System". The "Duales System" provides 'yellow' bins in which the consumer collects all rubbish provided with the "Grüner Punkt" (green dot). Licences have to be paid by the companies, which want to display the "Green dot" on their products, which guarantees that the products will be recycled. The packaging material is then collected and recycled by the "Duales System". According to an article in the Spiegel (1993) recycling is only the second best solution. Reduction and avoidance of rubbish and packaging or a solely usage of reusable packaging is preferable. Kopytziok (1992) argues that the process of recycling causes also new refuse and environmental pollution. In his

opinion, recycling does not lead to a reduction of the usage of resources and ecological pollution. It has the character of an "political alibi". He argues that the trend of recycling is only an argument to increase sales figures. In 1993, the German population used approx. 11,8 million tons packaging, representing 145 kilogram per head (Figure 3.5).



adopted from GVM (1994)

Figure 3.5 Usage of packaging material

### **3.2 *The Stakeholders***

As already mentioned in the previous chapter, the stakeholders increasingly influence the firms' business. Firms need to understand their stakeholders' values and concerns and have to consider them within their strategic orientation. Moreover, it is obvious that firms need to take responsibility for the business impacts on the society rather than just fulfilling the economic responsibility of shareholders.

The growing environmental awareness is often seen as a consequence of "consumerism". The aim of consumerism is to integrate consumer interests in companies' strategies. Especially companies in the consumer goods industry are blamed to have a negative influence on the environment. The environmental damage takes on alarming proportions which, in particular, is said to be the result of increasing consumption or the "throw-away-society". At the same time, the environmental awareness has a great influence on the performance and formulation of company's strategies.

A noticeable shift in the evolution of a stakeholder approach can be recognised (Kreikebaum 1980, Steger 1992, Coenenberg et al 1994, Dyckhoff et al 1994, Crosbie et al 1995, SustainAbility 1996, Fussler et al 1996). Crosbie et al (1995) go even further emphasising that the natural environment itself has become a major stakeholder. Business has to respond to and influence stakeholders with respect to sustainable development (Jones et al 1997). Environmental reporting has become a key issue. In recent years, a demand for corporate accountability increased, requiring firms to inform stakeholders about their progress towards environmental development. Moreover, the emergence of social audits offers a platform for stakeholder dialogue. Furthermore, Earl et al (1999) increasingly emphasise the need to consider stakeholders' views in environmental investment decisions.

## **Public and media**

A survey by Gruner & Jahr (1983) tried to examine the importance of environmental problems. The respondents rank the environmental problem as the most important among 33 other social and political variables. 94 % of the German population see the protection of the environment from pollution or destruction as a matter of great priority. Further studies like the BAT study, surveys from EMNID and the BMI study show the same results. Environmental awareness increased dramatically, whereas in the 70s economic problems like securing retirement, price stability, etc. had dominated public interest. Environmental protection had been ranked 9th in 1980 and in 1984, it was already ranked 2nd after unemployment. At the end of the 80s, environmental protection was seen as equally important to unemployment (Heyder 1989).

It may be argued that the population is getting aware of problems as soon as the problem touches their needs. Human beings have material needs like food, clothes, heating, housing, etc. The desire to satisfy these needs increases and gets broader as the wealth of human beings increases. These needs are also described as the "physiological needs" which are the most essential needs (Figure 3.6). When these basic material needs are satisfied, human beings reach for the next higher level of needs like security, self-affirmation and self-realisation (Weis 1979, Maslow 1976). As Maslow's hierarchy of needs shows, one will try to satisfy the most important needs (like hunger, thirst) first. When these are satisfied it will try to satisfy the next most important need e.g. for safety. Generally, it can be said that people's goals and values change (e.g. concerns about health and fitness etc.). Regardless of the person's position within the hierarchy of needs, it can be argued that "ecology" has become a vital aspect in humans' hierarchy of needs and can be possibly situated at all layers.



adopted from Kotler (1991)

**Figure 3.6 Maslow's hierarchy of needs**

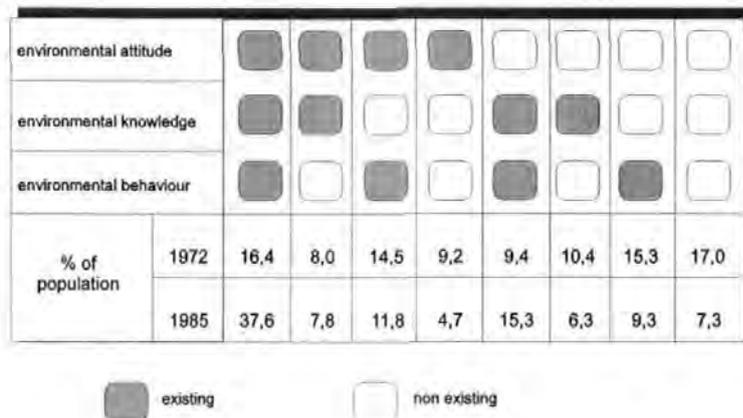
Frost (1993) summarises a range of goals most human beings try to reach: improved living standards, economic development, improved physical environment and environmental sustainability. According to a statement at the environmental forum AGU the environmental policy in Germany would have not been so progressive if the media did not exist and intervened. The media has the responsibility to inform and educate people, i.e. it is the public "watch dog".

Voss (1990) argues that ecological aspects are of prime interest to the public. A plethora of different magazines covering ecological issues exist in Germany (Heyder 1991). In the 60s, media reports covered mainly individual environmental aspects. During the 70s and 90s, the reports on ecological aspects, like catastrophes and big scandals have increased dramatically. During this period a general, pro-environmental trend emerged. At the same time, the population criticised that reports mainly showed negative aspects and showed rarely positive incidents (author anonymous 1991).

Due to an increasing number of reports by the media concerning environmental damages and catastrophes, a tough confrontation emerged between the public and government. Within the last years the media has become even more sensitive to ecological aspects (Haedrich 1982, Jung 1982). Environmental problems are reported quite aggressively causing public pressure.

## Consumers

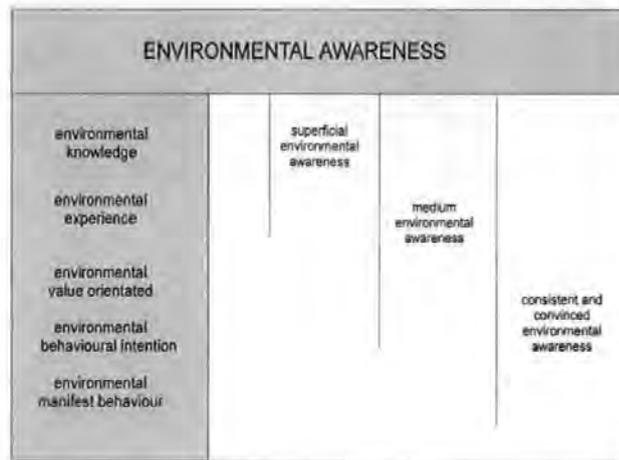
A study carried out by Meffert et al (1986) distinguishes between three categories of environmental awareness among consumers: attitude, knowledge, and behaviour (Figure 3.7). This categorisation is also applicable to other bodies (e.g. companies, etc.). The personality of individuals and the construction of their geographical, demographical, psycho-graphical and behavioural context, however, causes this awareness to vary throughout society.



adopted from Meffert et al (1985)

**Figure 3.7 Categories of environmental awareness**

Meffert describes "environmental awareness" as the insight of consumers into the ecological consequences of economic growth as well as a general willingness to find solutions for these problems (Burghold 1988). Figure 3.8 summarises the possible construction of environmental awareness proposed by Spada (1990).



adopted from Spada (1990)

**Figure 3.8 Significance of the term "environmental awareness"**

- *"environmental knowledge"*

This is the first stage to be achieved: knowledge of a problem through communication, investigation etc. One has to be aware of a problem in order to be able to develop an attitude.

- *"environmental experience"*

This could be seen as an emotional reaction like dissatisfaction with an ecological situation. This stage shows interdependence between human beings and their environment.

- *"environmental value orientated"*

This stage includes the attitude towards and the assessment of all activities by the population, institutions and companies affecting the ecological cycle. The behaviour is recognised as well as experienced. The negative and positive consequences can be evaluated and assessed.

- *"environmental behavioural intention "*

Spada (1990) proposes the hypothesis that the prerequisite for showing reaction is to first analyse and then assess the problem in order to be able to define an intention. However, he concludes

that the intention expressed only slightly correlates with actual everyday behaviour.

- *"environmental manifest behaviour"*

This stage shows the actual behaviour. Fietkau (1987) outlines four categories of reaction: -

- *resignation*: Feeling of helplessness and subjection. One tries to do what is possible.
- *compensation*: If one cannot influence the overall policy, then the individual tries to influence its closer (private) environment.
- *protest, looking for alternatives*: Trying to influence the policy by supporting political groups, "green" institutions, lobbies.
- *offensive action*: To take the initiative. Trying to incorporate the environmental aspect into private-, business live. The human being develops own ideas and procedures to protect and relieve its environment.

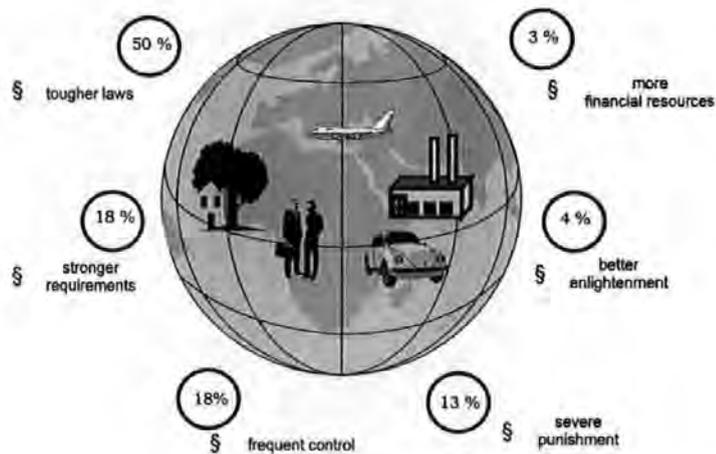
Consumers are getting more sensitive to the environment concerning their buying decisions (Wiedmann 1987). About 34% of consumers are environmentally active, e.g. consumers are increasingly prepared to pay a higher price for environmentally orientated products (Winter 1988, Klein 1990). As an example, products of the brand 'Frosch', representing environmentally orientated cleansing agents operating in a stagnating market, increased their market share within 3 years from 0,9% to 8%, with a yearly increasing rate of about 100%.

In the consumer goods industry, the question has arisen about what the consequences are on consumption and demand. It is argued that despite changes in the value system and an increasing environmental awareness, there

is still a gap between awareness and concrete buying patterns. The value "cleaner environment" will only have an effect on buying pattern, if the consumer is convinced that his behaviour will have an impact on the environmental situation (Adlwarth et al 1986). According to Heyder (1989) an influence on the behaviour can only be seen if the individual person is directly affected.

Moreover, Adlwarth et al (1986) argue that consumer behaviour concerning the purchase of environmentally friendly products will depend on the attitude towards products and their features as well as on the level of information the consumer receives as regards the ecological effects products have. They emphasise that the trend towards nature and ecology is accompanied by increasing hedonism, increased claims for higher quality and ecological relevance of products. Furthermore, in some consumer product areas consumers become more sensitive to higher prices. Such trends represent a conflict. Thus, they argue that further obstacles (e.g. personal and social facts) exist so that, in specific cases, the gap between attitude and action can be quite large (Gierl 1987).

Due to the increased public discussion concerning ecological pollution, buyers of consumer goods are especially sensitive to chemical engineering products and waste intensive products. Consumers demand more regulations, restrictions and distinctive environmental standards from the government, which will help to stop the continuous deterioration of the ecological situation (Liese 1986). This trend (increased regulations, restrictions, etc.) will lead to increasing consequences for companies, as they will have to comply with the requirements enacted by the government. According to the Emnid research in 1985, only one third of the population welcomed tougher regulations whereas in 1987 this figure had risen to 50 % of the population (Figure 3.9).



adopted with alterations from Winter (1988)

**Figure 3.9 More regulations required by population**

A study carried out by Gruner + Jahr (1993) concerning the responsibility for protecting the nature from pollution showed the following results: 54 % of the population see themselves as being responsible for achieving this target. At the same time 59 % state that the government is responsible for protecting the environment. Furthermore, 47 % state that the economy is responsible. Respondents named several bodies as being responsible for protecting the environment. As argued by Meffert (1985) the increasing attitude of consumers towards their own responsibility will support the buying decision to purchase environmentally friendly products with the objective to reduce environmental pollution.

### **Political forces**

According to Wegehenkel (1989) an ecological protection approach is in conflict with the system of a market economy and therefore it is necessary to approach the environmental problem by dirigism. Environmental protection has been embodied in Article 20a of the German constitution as the objective of the state. The German federal ministry for environment plans to develop an environmental statute book, which should comprise all key regulations currently spread over many single pieces of legislation. Firstly, the objective is to collect all these regulations and then simplify, harmonise and then develop further (Umweltbundesamt 1998). It is interesting to note, that according to the

statistics of the Umweltbundesamt (Federal ministry for the environment) the number of total known environmental offences increased by approx. 100% between 1985 and 1994 (Umweltbundesamt 1998).

The ecological orientation of the social market economy is one of the major challenges in the decades to come. Lambsdorff (1992) claims that after the re-organisation of the world, i.e. radical changes in Eastern Europe and after the gulf war, international environmental politics are challenged. He argues that environmental thinking is still not shaped completely in the 'minds' of people and thus the translation of environmental orientated initiatives is delayed considerably. Furthermore, he stresses the importance of ecological orientation by stressing the opportunities for the economy and the ability to strengthen competitiveness in the long run.

Within the environmental law, the development of new legislation is quite dynamic. Signs of changes at all political levels can be recognised due to the trend towards environmental awareness: -

- *Municipal*

It concerns decisions regarding waste management (e.g. by using different rubbish bins, providing containers for paper, glass bottles and metal (tins), etc.) and several other.

- *Nation-wide*

New regulations and rules emerge, for example the Abfallgesetz (waste law), Bundesemmissionsschutzgesetz (law for emission control), Wasserhaushaltsgesetz (law concerning waterusage in the household), Wasch - und Reinigungs-mittelgesetz (law concerning cleansing agents) and many more.

- *European-wide*

In the course of the current development, the European community tries to standardise the different national environmental laws on a European-wide standard. The European Court of Justice, in the case of Denmark concerning refillable bottles, gave quite an important statement:

*"...environmental considerations should take precedence over claims of free trade" (Caincross 1992).*

- *world-wide*

A unique trend in the environmental policy world-wide is emerging (Kirkpatrick 1990). An example provides the conference of the United Nations regarding environment and development (UNCED) in Rio de Janeiro. The conference outlined the approach referred to as "sustainable development" (Frost 1993, Jacob 1994). Further conferences, institutions and organisations followed.

Wilhelm (1994) outlines three basic principles, which were introduced in 1971 in the environmental program in Germany: -

- *"Vorsorgeprinzip"*

Principle to take precautions.

- *"Verursacherprinzip"*

Principle that the party responsible is liable for the damages.

- *"Kooperationsprinzip"*

Principle of co-operation with the persons affected.

A number of regulative instruments by the government exist like rules, approvals, conditions and bans, indicating that strict application of the "environmental tax" is required (Bonus 1983, Wilhelm 1994). Wheelen et al (1986) state that actions taken by government (enacting rules, approvals,

bans etc.) are bound to an effect on every company, as companies have to comply with the regulations enacted by the government. Governments can have two roles. Firstly, governments can promote actions to be taken by companies and secondly governments can constrain a strategy a company has decided upon.

Biedenkopf (1991) outlines a combination of political measures aimed to put the ecological dimension into effect. However, one important question arises: to which extent should governments intervene? Generally, it can be argued that governments can not be successful on its own. A co-operation between government, industry and the public is required.

A combination of the following political measures '*bans*', '*rules*' and '*regulative circuits*' exist: -

- '*Bans*' are necessary where increased pollution of the environment can not be accepted anymore. The key words are CFC-ban, chemical list.
- '*Rules*' refer especially to the application of specific technical possibilities, thus suggesting specific procedures like rules on exhaust emissions (e.g. catalytic converter). Bans and rules are seen as ineffective and bureaucratic as they mainly cause increased expenses (Wicke 1982). He argues that the government should set a goal and the procedure of achieving should be up to the industry.
- '*Regulative circuits*' have a regulative effect on the industry, representing one of the most effective measures. It leaves the creativity and freedom to the economy (Repenning 1983). An innovation process can be triggered by government action (Porter et al 1995).

On the consumer-side, eco-labelling has been used in order to provide consumer information. The 'Blue Angel' system in Germany was introduced in 1974 and after ten years up to 80% of the population recognised the label. Furthermore, the European Union introduced the regulation No. 880/92 authorising community wide eco-labelling with multiple criteria that facilitate life-cycle eco-labels (Bristow 1994). However, first withdrawals from any support for the eco-label process can be recognised (Crosbie et al 1995). The reason for this lies in the criteria being applied to eco-labelling (e.g. anti-animal testing coalitions).

Frost (1993) strongly advocates that government has to be the arbiter in order to balance development and ecological protection. He further argues that direct regulations are less effective than specific taxes and charges. He argues that regulations do not ensure that the task is allocated to those who can achieve it best. Volk (1992) refers to Hopfenbecks theory of the "Janus-faced" environmental problem marked by the following factors: The environmental effort can be seen as an after-care, arguing that nothing will happen without state-incentives and legal regulations.

Several authors generally demand government action. However, a trend toward more flexible approaches, using incentive programs and responsibility initiatives can be recognised (Fussler et al 1996, Murphy et al 1997). Porter et al (1995) stress the major drivers for regulations: they should create pressure that motivates, educates firms, encourages environmentally friendly technologies, creates a demand for environmental improvements and levels the playing-field, ensuring that a firm cannot take advantage of avoiding environmental investments. The need for increasing legislation is also shared by Welford et al (1996), who require a tougher legislation. Welford (1997) argues that businesses have to be encouraged towards sustainable

development either through internal capabilities and strategies or external interest groups.

Two main strands of thoughts can be recognised in the literature, those who argue that increased legislation has negative and those who argue that it has a positive impact on firms. Exploratory research using questionnaire material by Wubben (1999) looks at the impact of environmental legislation on competitiveness. The results indicate that environmental legislation does not have an impact on the long-term competitiveness, which, however, may depend on the firm's approach to a proactive strategy. The research does not completely support the hypothesis that legislation has a positive impact on short-term profitability. Another supportive empirical study has been conducted by Pickman (1998). The results revealed that innovation is a response to environmental regulation. Roberts (1995) also argues that firms preferably aim to anticipate future legislation. A very interesting point is stated by Holmberg (1998). He points out that the faster the market and legislation react, the smaller the difference will probably be between proactive and reactive firms. A further interesting viewpoint is that government can have a significant bargaining power - as being customer - by procuring from a sustainable viewpoint (New et al 1998).

### **Various interest groups**

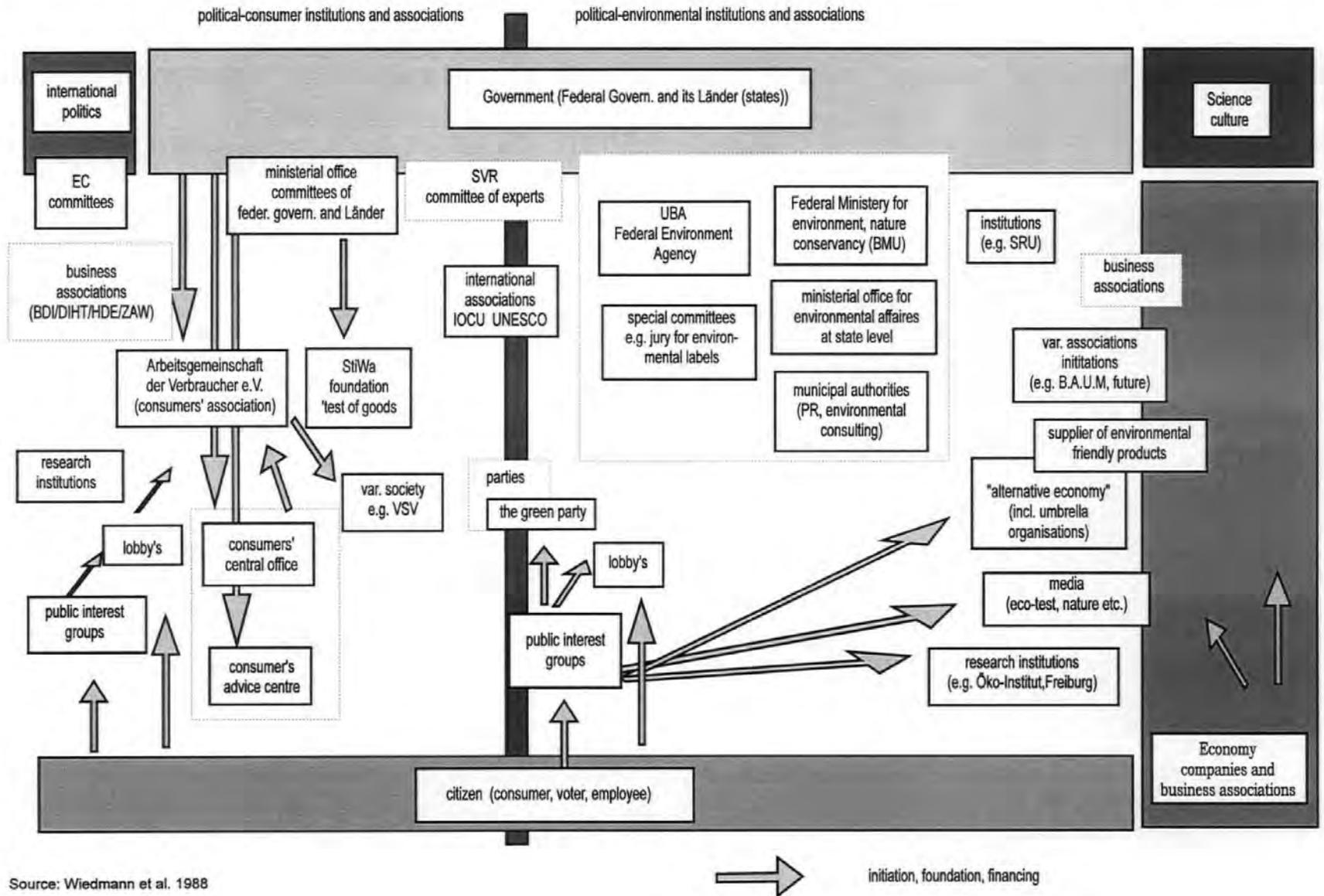
The environmental trend is also supported by various groups and environmental organisations such as 'Greenpeace', 'Robin Wood' etc (Table 3.2). The green parties are getting more powerful and represent a change agent (Welford 1997). These interest groups have a strong influence on government and industry. Interest groups put pressure on government forcing it to intensify regulations concerning ecological protection. They also put pressure on companies in that these have to accept responsibility for ecological pollution (Voss 1990).

Various interest groups emerged from the increased environmental awareness and, at the same time, from dissatisfaction with the government (Mayer-Tasch 1981, Sternstein 1982, Göppert 1991). In 1988, approx. 1400 environmental groups were registered according to the Umweltbundesamt (1988). The environmental and political-consumer interest groups represent a quite confusing network (Wiedmann 1988). Figure 3.10 tries to outline an overview of relationships between these specific associations.

	<p><b>Greenpeace e.V.</b>  <i>Foundation: 1972</i>  <i>Main focus: energy, air, chemical poisoning, tropical forests, atomic waste</i></p>
	<p><b>Deutscher Naturschutzring e.V.</b>  <i>Foundation: 1950</i>  <i>Main focus: traffic- and environmental tourism, bio-genetic engineering</i></p>
	<p><b>Naturschutzbund Deutschland e.V.</b>  <i>Foundation: 1899</i>  <i>Main focus: ecological protection in the German constitution, against big road construction projects</i></p>
	<p><b>Bundesverband Buergerinitiativen Umweltschutz e.V.</b>  <i>Foundation: 1972</i>  <i>Main focus: policy of peace, atomic/energy, rubbish, North Sea</i></p>
	<p><b>Robin Wood e.V.</b>  <i>Foundation: 1982</i>  <i>Main focus: deforestation, preservation of tropical forest, energy, traffic and rubbish area</i></p>
	<p><b>Rettet den Regenwald e.V.</b>  <i>Foundation: 1986</i>  <i>Main focus: protection of tropical forests and the people living there</i></p>
	<p><b>World Wide Fund for Nature e.V.</b>  <i>Foundation: 1961</i>  <i>Main focus: protection of forests, North and Baltic Sea</i></p>
	<p><b>Bund für Umwelt und Naturschutz Deutschland e.V.</b>  <i>Foundation: 1975</i>  <i>Main focus: energy/climate, traffic, rubbish, chemistry, successful influence on legislation</i></p>

Table 3.2 Important interest groups within the environmental movement

Figure 3.10 View of political - consumer and environmental institutions



Source: Wiedmann et al. 1988



initiation, foundation, financing

## **Suppliers**

The end-user demands increasingly environmentally orientated, biodegradable and recyclable materials. As the companies have to provide environmentally orientated products for the consumers, they require appropriate raw materials from their suppliers. However, depending on the bargaining power of suppliers (Porter 1980, Freemann 1990), the company will face problems if the supplier is not in the position to offer such raw materials. Nevertheless, a re-orientation among suppliers is necessary, due to this environmental development. This may lead to increased pressure on companies. As mentioned in the previous chapter supply chain management increased in importance. It can be concluded that the supply chain approach can be regarded as cross-functional and integrative offering great potential for environmental improvements (i.a. Green et al 1996, Lamming et al 1996).

## **Retailer**

The retailer has the function of a mediator between the producer and the consumer. According to the 'gate keeper' concept of Lewin (1963) the retailer has the control function. As the retailer has the direct contact with the consumer, it is likely that the consumer will contact the retailer first in case of a concern or complaint (Hansen 1988). Thus, the retailer has a great influence on the consumer as well as on the producer. The retailer can promote the production of environmentally orientated products on the producer side and can point out environmentally orientated products to the consumers at the same time. This situation is called the 'ecology push-strategy' and the 'ecology pull-strategy' (Hansen 1988).

## **Competitors**

In the last decades, dramatic changes required a change in the management approach. In the 50s the trend towards products 'made in Japan' increased, international markets and thus international competitors emerged, with

different cultures, rules etc., requiring a change in management strategies (Freeman 1984). A change in the environment will also require a change in the competitor's strategy (Henderson 1983). The behaviour of a competitor has a great influence on the opportunities and the competitive success of firms (Kubicek et al 1976). Furthermore, Kirchgeorg (1990) describes the competition of environmentally orientated products as an 'environmentally orientated intensity of competition'

### **3.3 Sustainable Development**

The environmental situation is still unsatisfactory. Even if the ecological impact may be reduced it will be overcompensated by the increased output and thus by the increased quantity utilised. This case can be especially found in the packaging and paper industry where the total consumption of paper is constantly increasing. Kopytziok (1992), taking up this argument, states that it is necessary to reduce the production of goods in order to reduce the usage of resources (moving from efficiency to sufficiency, see Chapter 4.). Adams (1990) supports Kopytziok's view arguing that it would be necessary to increase the output of consumer goods by 5 to 10 times, if the population would stabilise at about 8 thousand million people. Fussler et al (1996) refer to a statement of Schmidt-Bleek, indicating that we would need a dematerialization of economic processes by 90% in order to achieve a factor 10 of improvement.

Mentzel (1976) associates the situation on earth with the "spaceship Earth" on which the crew lives with limited supply of resources and thus growth is limited (Endres 1985). A 'quantitative growth' approach will not solve the ecological problem, as it is mainly the reason for the ecological situation (Kreikebaum 1981). The call for a 'qualitative growth' as a consequence of limited resources and increased ecological pollution is becoming louder (BUND 1988). 'Qualitative growth' stands for growth, which reduces and avoids environmental damages (Werner 1975, Mohr 1983, Jacob 1994). The use of energy and resources and the resulting environmental pollution should be reduced for every unit of output. Generally, growth stands for growth of the GNP, but the limits of GNP can be seen in the physical and material limits of nature (Bonus 1983).

In the 1970s, reform environmentalists have seen the globally unsustainable use of natural resources. The demand for conservation, restraint from

consumption and environmentally sustainable development of nations, industries and businesses has increased.

The range of issues covered by sustainable development comprise next to the global pollution, the intergenerational flow of capital and resources, the growing inequity between rich and poor as well as the concern about powerful trends which are undesirable like, industrialisation, increasing power of transnational organisations, etc. (Carley 1994). Sustainable development is focused on environmental protection, on equity and social matters.

The global inequity is increasing. In 1991 the world's richest countries (20%) had 61 times the income of the poorest countries. The existing inequity can also be related to health, wealth, consumption areas, etc. There is an increasing and necessary demand, to shift from solely covering environmental protection to a fundamental rethinking of how we behave and thus businesses, industries, etc. work. (Welford 1996, 1997, Elkington 1996). The social environment is a major component of sustainable development. The inequity between rich and poor in terms of income and consumption is increasing. It is stated that approx. 20% of the world's population lives in conditions of extreme poverty (Reid 1995). One of the major risk groups are children. The likelihood for a child born in the southern region to survive beyond the age of five is 15-20 times less likely than in the northern region. Moreover, the inequity between rich and poor in the North also continuous to widen. Homelessness, poor nutrition and health, crime, drugs and racial violence is increasing. Unemployment as a result of an increase in advanced technologies requiring less labour and the power of transnational corporations is becoming more threatening.

A plethora of definitions of sustainable development exist in the literature. Welford (1995) refers to the term 'sustainable growth' which is used in line

with 'sustainable use'. However, it has different meanings. 'Sustainable growth' contradicts with the statement that physical objects can grow indefinitely and 'sustainable use' applies only to renewable resources and relates to the fact that the resources should be used within their limits of renewal.

The World Commission on Environment and Development in 1987 defined a commonly used definition of sustainable development:

*„paths of human progress which meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs“*

Following to this the United Nations Conference in Rio de Janeiro on Environment and Development developed a programme for sustainability, the Agenda 21. The Brundtland report covers four sections: social and economic development, natural resources, fragile ecosystems and related human activities (Brundtland 1997). The 'Commission for Sustainable Development' has been established with the objective to monitor the progress. The International Chamber of Commerce has also developed a „Business Charter for Sustainable Development“ which outlines 16 principles for environmental management which companies should follow.

Shrivastava (1995) states that

*“Sustainable development involves control over population growth, providing world-wide food security, preserving ecosystem resources, and reorienting energy use and industry to ecologically sustainable directions. Sustainability means meeting our current needs without jeopardising the ability of future generations to meet theirs. It involves pacing the use of resources so that they can be renewed and maintained within a natural equilibrium“*

O'Conner (1997) relates the term 'sustain' to the following four areas: 'to uphold the course' of capitalist accumulation, 'to provide the necessities of

life', 'to endure without yielding' whose ways of life is being subverted by the wage and 'ecological sustainability'.

Hutchinson et al (1997) also refer to the diversity of definitions. Some authors talk about 'sustainable economic growth', others demand the conservation of market leadership using the term 'sustained economic growth'. They state that around 73 definitions of sustainability exist.

Thorsby (1993) defines six principles of 'sustainability' which are classified as desirable and ethical: -

- *Advancement of material and non-material well-being*

It is about the extension of the definition of economic growth.

- *Inter-generational equity*

The concern about the future generation

- *Intra-generational equity*

The demand for equal distribution of goods and resources.

- *Protection of biodiversity and the maintenance of ecological processes and systems*

- *Dealing cautiously with risk and uncertainty*

- *Recognition of global dimension*

Steger (1998) also referring to the diversity of definitions on sustainable development points out that in the 18s century the term 'sustainability' first came into use in forestry. It was demanded that the stock on timber should be maintained ad infinitum. He argues that the demand for maintaining the renewable and non-renewable resources should be understood as maintaining the 'functionality' and 'productivity' of stocks rather than keeping them constant. Next to the discussions among being green and its impact on the competitiveness, the discussion concerning eco-efficiency increased (see Chapter 4.).

Welford (1995) summarises three major issues concerning sustainable development, which should be addressed by industry: -

- *Environment*

The environment is an integral part of the economic process. The objective is to protect the environment and achieve a minimal usage of non-renewable resources and environmental pollution.

- *Equity*

Demand to increasingly deal with the issue of equity. It has to be kept in mind that the developing countries desire to obtain the western standard of living and that the gap between poverty and wealth is getting bigger (see also Hart 1997).

- *Futurity*

Economic factors are required to approach a long-term horizon and a more proactive approach should be pursued rather than reactive approach.

Gladwin et al (1995) come to a similar view. They point out that sustainable development has developed in terms of vision expression, value change, moral development, social reorganisation or transformational process. Although it is argued that the '*notion of sustainable development will remain fuzzy, elusive,...*', they outline some issues which are generally shared by a majority. They describe sustainable development as a process of achieving human development, covering components like *inclusiveness* (implying environmental and human systems over time and space), *connectivity* (stressing the necessity to achieve social and environmental goals in order to achieve economic goals), *equity* (providing fair distribution of resources and property rights), *prudence* (duties of care and prevention given the complex dynamics in ecological and social systems) and *security* (requiring a sage, healthy, high quality of life).

Within the Agenda 21 a starting point for the industry is outlined. The objectives of industry should be to change values and perceptions within an organisation: -

- Develop strategies in order to reduce the environmental impact of operations and products.
- Ensure responsible and ethical management of products and processes.
- Environmentally sound technologies should be made available to affiliates in developing countries.
- Support affiliates in achieving full compliance of local regulations and share information with government.
- Create partnership with smaller companies.
- Establish national councils for sustainable development.
- Increase research and development of new environmentally sound technologies.

Jaeger et al (1995) summarise the outcome of a workshop organised by the European Commission with the objective to discuss the perspectives, approaches, trends and appropriate actions concerning the issues of global environmental change and sustainable development. The participants emphasise the need for a radical change in policy making. The conventional economic development is not more adequate to support the environmental development and that new and unsolved policy issues have to be further developed. For example, they agreed that an environmental tax reform and appropriate environmental subsidies are imperative. They further outline five policy relevant topics: -

- Fostering the „sustainable“ synergies between environmental, economic and social policies.
- Diffusing the utilisation of indicators of performance concerning environmental costs and resources.

- Promoting the development and diffusion of cleaner technologies.
- Identifying and supplying instruments to overcome the distributive implications (job losses).
- Improving the interactions between local, national, European and international instruments concerning sustainable development and global environmental change.

The original concept of sustainable development has been applied to global and national levels. As already mentioned, there are voices requiring an increased involvement of government (e.g. Welford 1997). The Agenda 21 refers to the government as being the responsible body for achieving sustainable development (Welford 1995). O'Conner (1997) claims that being sustainable in capitalism is probably not possible, as capitalism is in a crisis and self-destructing. In his view it is necessary to introduce national taxes on resource inputs and outputs, value-added taxes on environmentally unfriendly products, and subsidies for alternative energy sources, technologies, etc. Regulations are needed to create pressure and thus motivate firms to innovate, improve environmental quality, etc. (Porter et al 1995).

Furthermore, it is argued that the increasing trend of internationalisation of world trade will seriously exacerbate the current situation of inequity and will lead to a worsening of the ecological situation (e.g. Welford 1995, Ekins 1998). Reid (1995) points out a very schizophrenic situation; the northern countries import beans and potatoes from a nation like Egypt, which has on its own problems with feeding their own population. It can be argued that an increase in world trade will not inevitably lead to an increase in equity. An equitable trade should ensure that a fair price is paid for workers, resources, etc. in the less developed countries (Redclift 1995). However, that this situation exists can no be admitted. Looking at the development of the trade development, it can be recognised that international trade stands above

environmental issues (Welford 1995). GATT negotiations and decisions undermine progress towards sustainable development (see also Crosbie et al 1995). Ekins (1998) points out that a major reason for this situation may be that the GATT has no general commitment to environment protection or sustainable development. On the other hand, opposing voices exist, arguing that free trade plays an important role in progress towards sustainable development (Schmidheiny 1992).

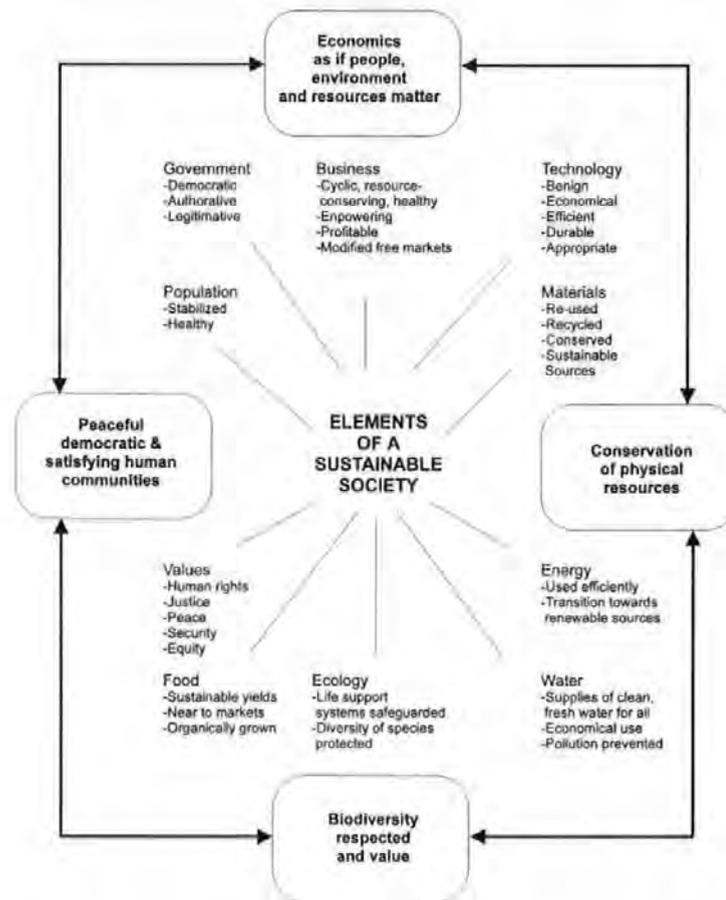
A further trend of global power can be observed. Approx. 500 firms control 70% of global trade (Worldwatch Institute 1994). Welford (1995) argues that transnational corporations are to be held responsible, especially for the transnational environmental damage. The increasing power of transnational corporations is not seen as supportive for sustainable development (e.g. Welford 1997). Their power is increasing, operating above laws. They have considerable political power especially in developing countries, as they provide jobs. Moreover, it can be argued that they lead to an increased exploitation of developing countries.

There is also a major train of researchers, which argue that political and economic interests dominate the environment of sustainable development. It also has a great influence on what has happened since the publication of the Brundtland report. Sandbrook (1993) points out that a majority of conferences and institutions concentrate on the impact of the environment on the world's economy and not vice versa. The discussions are more about how economic wealth can be maintained within the ecological boundary. It is further argued that the majority of sustainable development strategies merely concentrate on environmental aspects, not dealing with social issues. A further issue to be worried about is the fact that institutions as the WBCSD set up to achieve sustainable development, are mainly driven by business people. Welford

(1997) states that they are keen on turning sustainable development into a business opportunity.

Several authors argue that 'sustainable development' requires a fundamental change in attitude and values of consumers, companies and governments (Frost 1993, Jaeger et al 1995, Welford 1995). Reid (1995) referring to several other authors points out the need to change our individual attitude and - in the first line - ourselves. He refers to a statement by Max-Neef (1991) stating *'if I change myself, something may happen as a consequence that may lead to a change in the world'*. Moreover, Welford (1997) states that we ourselves are a major part of the problem and even though we are aware of the problems, we do not get moved, as it doesn't touch us deeply enough. Hutchinson (1996) also argues that a sustainable society has to be developed in order to achieve the objectives of 'sustainable development' (Figure 3.11).

The literature on environmental management talks increasingly about the integration of the sustainable development concept into the management perspective. The majority of literature is mainly based on how businesses can incorporate the ecological aspect into business activities. As environment is not the solely concern of sustainable development, there is a need to concentrate on all core components of sustainable development. Some authors deal with concepts how firms can contribute to sustainable development (Gladwin 1995, Welford 1997, James 1997, Roome 1998). Barrow (1999) emphasises that the objectives of sustainable development need to be realistic and should be based on workable strategies.



adopted from Hutchinson (1996)

**Figure 3.11 A vision of a sustainable society**

Some attempts appear to be rather simple, e.g. Shrivastava (1995) argues that the three generic strategies can be made ecologically sustainable by just integrating sustainability principles. Steger (1998) describes how a sustainable path might be pursued. Firstly, through the implementation of clean technologies and secondly through a change in the demand structure.

It is generally agreed that further strategies advising how to translate the conceptual theory of sustainable development into practice are needed (i.a. Welford 1995, Gladwin 1995, Roome 1998, Matten 1998). However, a fundamental new type of development and growth, which is environmentally and socially sustainable, is required. 'Business as usual' is not the solution to sustainability. A fundamental change in values, ideologies and ways how things are done is necessary.

After considering the trends of internationalisation, power of global players, increasing equity, or the statement by Steger (1998) that

*'the growth impulses resulting from the process of the European integration will lead to further deterioration of the environmental situation and that the growth rate of production is still greater than the growth rate of environmental progress'*

the question arises how companies can make a contribution towards a sustainable path. Hart (1997) points out that although the challenge is a matter of developing a sustainable global economy, corporations are *'the only organisations with the resources, technology, global reach and ultimately the motivation to achieve sustainability'*. A general believe exists that business and industry are the major cause of the environmental situation (UNCTAD 1996). Among several authors, it is generally agreed that businesses are also the centre of the solution. Lamming et al (1999) raise the doubts whether sustainable development can be properly applied at business and industry level. They argue that sustainable development is meaningful only at the global level. This does not suggest that firms should be released from their responsibility, however, as for social matters firms can merely deal with matters that can directly be influenced. Their discussion points out that the goals should be appropriate so that they encourage achievement, rather than setting superordinate goals. From this point of view, they suggest that firms should be held responsible for the environmental soundness (the interaction between economy and environment). Social matters, which can not be controlled by firms, should be related to societal institutions.

The research project will in the first line concentrate on the business response to environmental development. Thus, the following chapter mainly deals with environmental management approaches. The actual discussions on sustainable development comprising ecological, social and equity aspects will be reflected at the end of the following chapter.

## **4 "Environmentally" orientated management approach**

### **4.1 Development of „environmental“ management**

Weizsaecker (1986) emphasises that

*“... human beings can not dominate the natural environment, rather human beings are an integral part of a life-supported cycle...”.*

Three major strands of literature leading to a general understanding of environmental business behaviour can be discovered, the system approach, ecological issues being considered more strategic, and ecology being part of the firms' social responsibility (taking over responsibility for sustainable development).

During the 1970's, the literature is mainly related to specific ecological topics. The more technocratic approach of i.a. Eichhorn (1972), Schmidt (1974). is concerned with the impact of governmental measures and the instruments applicable for companies. In contrast, the technocratic approach of Isofert (1977) and Lange (1978) is examining the integration of ecological aspects into business model approaches. The late 1970s are marked by keywords like "social responsibility, morals and ethics" of companies concerning environmental issues. From the mid-1980s first approaches can be recognised as regards 'environmental orientated management' (Table 4.1). The 90s are driven by environmental management systems and the debate among eco-efficiency. During the 90s, a plethora of tools have been developed. By the end of the 90s, the discussion on environmental approaches being a core component of sustainable development increased. Several authors require firms to fundamentally change their core beliefs, values and behaviour, rather than purely changing current strategies. The demand for taking over responsibility for the overall sustainable development objectives increases.

Table 4.1 Selected approaches of environmentally protection in business and environmental orientated management

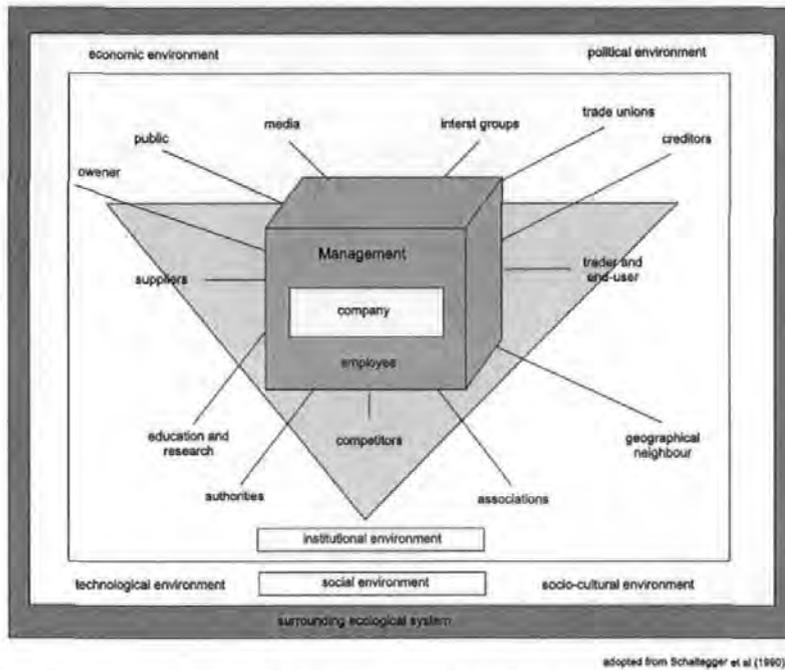
primary orientataion	technocratic approach			socio-cultural approach	strategic approach	evolutionary management approach	environmental management standards	'Sustainable Development'
	adaptive	partly problem related	systematic					
way of looking at the problem	in particular consequences of 'EP' state-measures from the company's view	optimal process control in the area of prevention of water pollution	integrated embedding of environmental restrictions looked at from the standpoint of being successful	socio-cultural aspects of corporate legal structures and corporate philosophy	market orientation of the 'EP' problem	co-evolution with the environment and the socio-economic area respectively	'systematically' approach the environmental issue  Eco-efficiency "Producing more with less"  Triple-bottom-line	- Comprising ecological, social, equity issues - Fundamental rethinking of how we behave - Sustaincentrism - challenge the profit-centred industrial organisations
authors	Eichhom (1972) v. Zwehl (1973) Schmidt (1974)	Ahrens (1974) Günther (1970) Kühner/ Hahn (1970) Meier (1972) Hahn (1972) Abendt (1972) Orth (1974) Ruf (1975)	Isfort (1977) Oepelt (1977) Lange (1978)	Picot (1977) Dierkes (1974) Müller- Wenk (1978) Fleischmann/ Paudtke (1977) Pfriem (1986) Fronek (1978) Ruppen (1979)	Steger (1988) Nüßgens (1974) Schreiner (1988) Pieroth/Wicke (1988) Winter 1987) Meffert et al (1986) Strebel (1980) Meffert/Ostmeier (1990)  Hopfenbeck (1990) Kirchgeorg (1990)	Ulrich (1985) Malik (1984) Sprüngli (1982) Dyllick (1982) Dyllick (1988)	Whitlaw (1997) Welford (1996) Fussler et al (1996) Schlatter (1999) Halme (1997) Elkington (1998) Roome (1994) Schmidheiny (1992) Dyllick (1999) Gladwin (1995)	Welford (1997) Roome (1998) Gladwin (1995) Jones (1996) Meima (1997)
status of environmental protection (EP)	environmental protection seen as cost-intensive and restrictions passed forward by state			'EP' within the framework of social responsibility of companies	'EP' as potential for success	ecology seen as an implicitly essential part of environment or of the socio-economic area		
models and instruments developed	adaptation instruments to state-measures	mathematical optimization models	systematic models for adaptation to environment	- ecological accounting  - company social balance  - society specific rendering of accounts	- ecological marketing  - ecological product / market strategies  - ecological risk management	- models of viable and evolutionary systems  - self-organisation of complex systems	- Life-cycle - BS7750 - ISO 14000 - EMAS - Audits - EIA - Eco-labelling - ....	- Transparency - Social Audits - Accountability - Sufficiency - Consumption pattern - ...

adopted with alterations from Hopfenbeck (1992)

#### 4.1.1 Evolutionary / System perspective

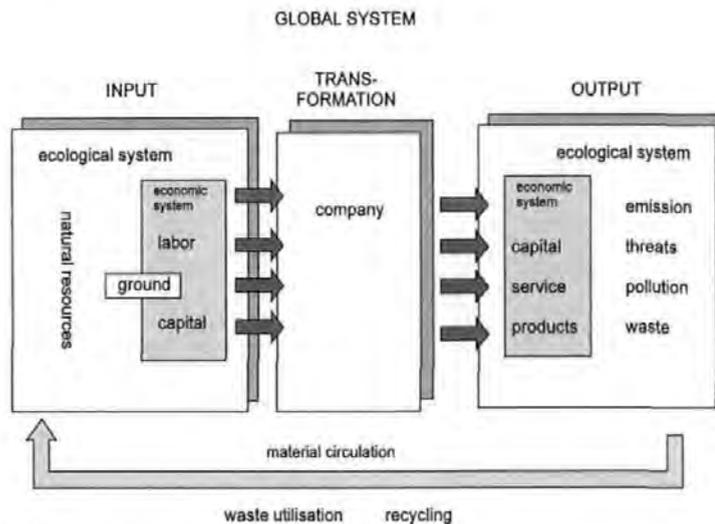
In recent years several authors (Sprüngli 1981, Ulrich 1985, Dyllik 1988, Burghold 1988, Senge 1990) point out the „evolutionary management approach“, which is also termed as the „model of viable systems“. The company is seen as a „self-organising organism“. Interestingly, it can be recognised that the „evolutionary approach“ shows an extraordinary link to ecological characteristics. This approach can be related to the ‘bio-sphere’ moving from evolution to co-evolution. As already said by Sprüngli (1981), *“human beings shape the environment and the environment shapes them”*. In contrast, Welford (1997) argues that the dependence is seen as one-sided.

The surrounding environment of a company plays an important role in the strategic business sphere. Dyllik (1992) notes that at the first stage environment was described as a ‘task environment’, which takes customers, competitors, suppliers, employees, shareholders, etc. within a strategic business plan into consideration. At the second stage the keyword environment was widened by the social aspect, which can be interpreted as the human and natural sphere. Dyllik argues that the company represents a sub-system of the comprehensive ecological system (global system) having an impact on all other systems (Figure 4.1). The global system comprises elements, which exist in relationship with each other. Ulrich (1970) also identifies a company as an open, dynamic and socio-technical system, which is closely linked to its surrounding environments.



**Figure 4.1 A business system within a comprehensive ecological system**

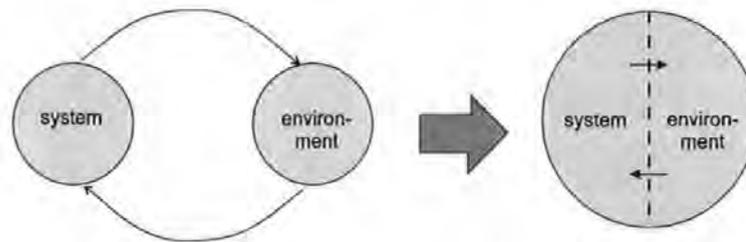
The global system is the number of all other systems from which a company obtains resources, relevant to maintain wealth and to which it passes on undesirable output of production processes. The company as a system should be seen as an integral part of the natural environment, which represents a global system (Figure 4.2).



**Figure 4.2 The global system of a company**

The company is not seen as a 'productive social' system anymore. It should rather be regarded as an evolutionary self-organising system. Hopfenbeck (1992) describes a company as an evolutionary system, which acts

interactively with other systems (Ulrich 1970, Schreiner 1988). Dyllik (1992) further emphasises the co-evolution of systems instead of their separate evolution (Figure 4.3). Dyllik (1992) puts forward that companies are part of the economic circulation as well as the natural material circulation. In the literature this approach is defined as the „system-approach“ (Ulrich 1970, Nüßgens 1974, Malik 1984, Raffée 1984, Burghold 1988).



adopted from Hopfenbeck (1992)

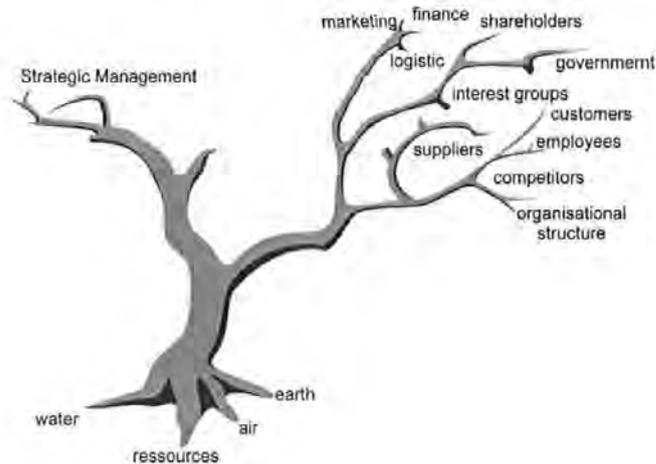
**Figure 4.3 A company within a integrated and interdependent system**

Environmental problems should be approached in terms of a broader system, using an open system model (Emerson et al 1997). In fact this area of discussion is where Senge (1990) is at his strongest. He favours a 'system thinking' representing a discipline for seeing wholes. Due to the increasing complexity, the need for systems thinking is necessary than ever before. He interestingly refers to systemic breakdowns in the ecological sphere, such as global warming, ozone depletion which all have no simple local cause.

An environmental approach is seen as a cross-disciplinary or cross-functional task. This creates a drive for an organisational reform as well as holistic and systemic thinking (Roome 1994). Roome (1993) also refers to the development of a systems approach. Welford (1995) concludes that businesses with the objective to maintain a competitive advantage may need to adopt a 'system thinking'.

Concerning the characters of a system, Schreiner (1988) outlines some features: dynamic, deterministic, complex, equilibrium, and flexible, which

may be related to features necessary for businesses. However, the objective to maintain equilibrium of the whole system (Figure 4.4) can be seen as the major task of management (Kast and Rosenzweig 1984). Welford (1995) further states that the 'earth's living system' should be seen as part of a 'supranational ecological system'.



**Figure 4.4 The roots of environmental issues**

#### **4.1.2 Social responsibility perspective**

Taking over responsibility for the environmental situation, is seen as a core matter of social responsibility. Nevertheless, several authors argue that the environmental issue should be approached in the light of a business approach and that it should be treated in a way like other business issues. Some authors (e.g. Lamming et al 1999) even argue that businesses are not in place to solve the world's problem. After all, they have to meet the expectations of their shareholders. However, a noticeable shift in the evolution of a stakeholder approach can be recognised (Steger 1992, Dyckhoff et al 1994, Crosbie et al 1995, SustainAbility 1996, Fussler et al 1996). Crosbie et al (1995) go even further arguing that the ecological environment represents a major stakeholder. Over the years the stakeholder approach got increasingly important in the context of sustainable development. The demand for social auditing increased

in recent years (Jones et al 1997, Sillanpää 1998). Social audits enable firms to go into dialogue with stakeholders. Furthermore, Zadek (1999) argues that the expectations and views of stakeholders have to be incorporated into social audits.

The question of how firms should respond to environmental issues can be seen in broad terms as part of the debate on corporate social responsibility.

*„From an economy based on physical growth and moral stagnation, we must shift to an economy based on physical equilibrium and moral improvement“  
(Daly, in: Simonis 1986)*

Schreiner (1988) concludes that the main target for an ecological policy should be the reconciliation of economic and ecological concerns. Whereas, the discussion among the triple-bottom-line emphasise the need to satisfy the economic, social and ecological dimension.

Firms are increasingly required to integrate ethical and social objectives into their strategic objectives. Environmental protection in terms of sustainable development is seen as an ethical and social objective, which should be considered by firms in their strategic orientation (i.a. Strebel 1980, Steinmann et al 1991, Ulrich 1991, Crosbie et al 1995, Welford 1995). Welford (1995) argues that an environmental approach should be based on a sound ethical ideology. This is supported by Hutchinson et al (1997). They state that firms operating within a physical and ethical framework have to consider the environmental issue as an ethical issue. This has further been confirmed by Steger (1998), who comes to the conclusion that environmental protection can be achieved through ethical obligations to which firms may be bound to rather than through normative and state-mandated rules. However he refuses to talk about 'sustainable corporations' and 'sustainable organisations', as the literature relates to divergent meanings of how sustainable development

should be approached. He prefers to talk about 'sustaining the corporation', which represents the equilibrium between society and firm.

In this context, it should be pointed out that the literature increasingly demands that environmental management should integrate the overall sustainable development concept (Strunz 1993, Meffert et al 1993, Gladwin 1995, Welford 1997, Hutchinson 1997, Strebel 1997, Roome 1998). Approaching sustainable development (ecological, social, equity, and futurity issues) requires more than merely adapting an environmental strategy. It requires a fundamental change at the decision-making level from 'reactionary action ethics' to 'proactive attitudinal ethics'. It requires fundamental changes in beliefs and behaviours. It requires questioning existing systems and values.

Some authors deal with concepts how firms can contribute to sustainable development (Gladwin 1995, Welford 1997, James 1997, Roome 1998). Hart (1997) outlines three stages concerning environmental strategies through which a firm has to move in order to achieve sustainable development: pollution prevention, product stewardship with a focus on all environmental impacts during the life-cycle of a product, and the utilisation of clean technology. However, in order to move through these stages a firm needs to have a vision of sustainability representing a 'road map to the future'. Several authors argue that a proactive, anticipatory environmental approach represents a central path towards sustainability. The objective is to reduce the environmental impact and the usage of non-renewable resources through e.g. product and technological alternatives and innovations. It is argued that firms need to take over product stewardship (Umwelt 98). However, looking at these views, it can be recognised that they mainly concentrate on the ecological issue, but treat it similarly to sustainable development.

Matten (1998) in his work states that the majority of literature merely refer to the conventional environmental management approach of 'Greening'.

However, he argues that the sustainable development approach is significantly different to the environmental management approach (Table 4.2). This is supported by e.g. Welford (1997), Roome (1998).

	<b>„Greening“ Environmental orientated management</b>	<b>„Sustaining“ Sustainable management</b>
<b>General imperative</b>	„Less than...“ - maxim	„As much as...“ - maxim
<b>Environmental detraction</b>	actual environmental pollution	potential environmental pollution (the risk)
<b>Sense mechanism of environmental detraction</b>	direct perceptible	indirect perceptible
<b>Public interest</b>	Emissions as an environmental damaging by-product of a production process	Products and production method. An environmental damaging by- product of a lifestyle
<b>Success criterion</b>	'Eco-efficiency'	'Modesty'
<b>Orientation</b>	Shareholder	Stakeholder

adopted with alterations by Matten (1998)

**Table 4.2 Environmental management behaviour towards sustainable development**

## 4.2 The environmental management perspective

It can be recognised that companies are becoming more sensitive towards ecological aspects as companies discover these to be "a threat as well as an opportunity". Companies are strongly influenced by their surrounding environment. Management decisions are increasingly influenced by ecological issues, which can lead to both, a narrowing or a widening of a company's room to manoeuvre (i.a. Liese 1986, Meffert 1986, Kirchgeorg 1990, Steger 1993, Hopfenbeck 1992). Sietz (1992) outlines stages of environmentally orientated management (Table 4.3).

Phase	Basic principles	Management	Organisation of environmental protection (E.P.)	Technology
<i>at the beginning of the 70s</i>	from 'ignorance' to 'environmental interest'	"suppression"	not existent	"ecology" = a free good
<i>at the end of the 70s</i>	from 'environmental interest' to 'environmental awareness'	products/procedures have to be justified as regards 'ecology'	restricted to technical solutions	'End-of-the-pipe' technology
<i>at the beginning of the 80s</i>	from 'environmental awareness' to 'environmental action'	first models for environmental management	beginning of the technocratic approach	
<i>at the end of the 80s</i>	from 'environmental action' to 'environmental consumption'	environmental protection a matter for the executive floor	environmental protection is systematised (first 'eco' balance sheet and audits)	opportunities of integrated environmental protection are recognised
<i>at the beginning of the 90s</i>	'environmental hysteria'	environmental protection recognised as strategy for the future. Demand for environmentally friendly products increased	new approaches are tested from the experience of pilot companies	integrated environmental protection gains acceptance. Demand for environmentally friendly products throughout the life-cycle
<i>at the end of the 90s</i>	'environmental standardisation'	EMAS, ISO 1400 Eco-efficiency Triple-bottom-line		Systematic approach Cradle-to-grave

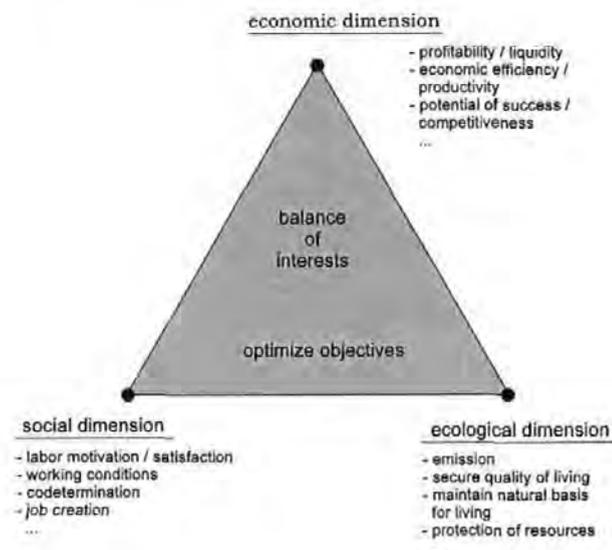
adopted with alterations from Sietz (1992)

**Table 4.3 Development of environmental management**

Two main strands of literature can be recognised concerning the environmental issue and its impact on business. The ones who argue that pursuing an environmental approach is in conflict with an economic business

approach and others who take a different view arguing that an environmental approach is part of the social responsibility and can be of advantage to a business and even result in a competitive advantage.

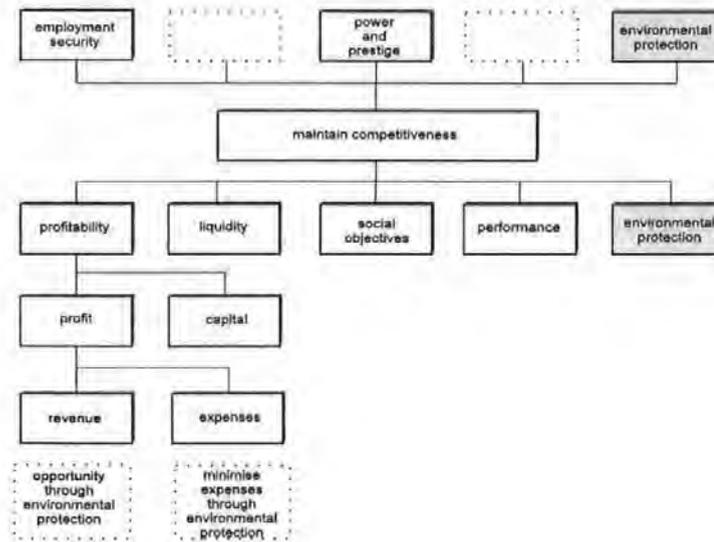
According to Gomez (1989) a company exists in the following areas of conflict: economic success, environmental friendliness and social responsibility. Figure 4.5 outlines the areas of conflict.



adopted from Hopfenbeck (1992)

**Figure 4.5 Areas of conflict in strategic management**

Jacob (1981) strongly advocates that it is of utmost importance to maintain an equilibrium between these three dimensions of possible conflicts. However, it can be argued that environmental objectives pursued by companies do not automatically have to stand in conflict with economic objectives (Figure 4.6). It appears reasonable to assume that an environmental policy should be targeted on a long-term scale and thus predestined to be successful when objectives are complementary. Furthermore 'soft' objectives like image, security, etc. are predestined to be complementary to ecological objectives. However, generally it can be argued that in most cases environmental objectives may lead to a long-term secure existence.



adopted with alterations from Hopfenbeck (1992)

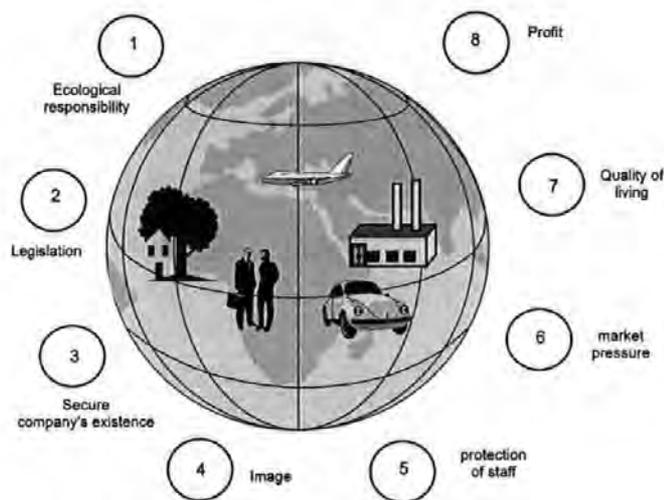
**Figure 4.6 Environmental protection on different objective levels**

Steger (1989) refers to a survey conducted on behalf of the Umweltbundesamt. The survey concludes that the majority of companies surveyed argue that environmental objectives are more likely to be complementary or neutral to long term business objectives. This is also supported through surveys by Töpfer (1985) and Meffert et al (1989).

The discussion among the triple bottom line emerged. Murphy et al (1997) refer to the triple bottom line of financial, legal and moral obligations. The moral bottom line is about taking over responsibility for all issues and not just for environmental impacts. In general, the triple bottom line is referred to the triangle of economic, social and environmental sustainability (Elkington 1998). The major problem lies in the objective to fulfil all three objectives (see also Hockerts 1998, Zadek 1999). Other authors (i.a. Schmidt 1974, Lange 1978, Strebel 1984, Schreiner 1988, Kreikebaum 1989, Winter 1990, Vieregge 1991) also support this view.

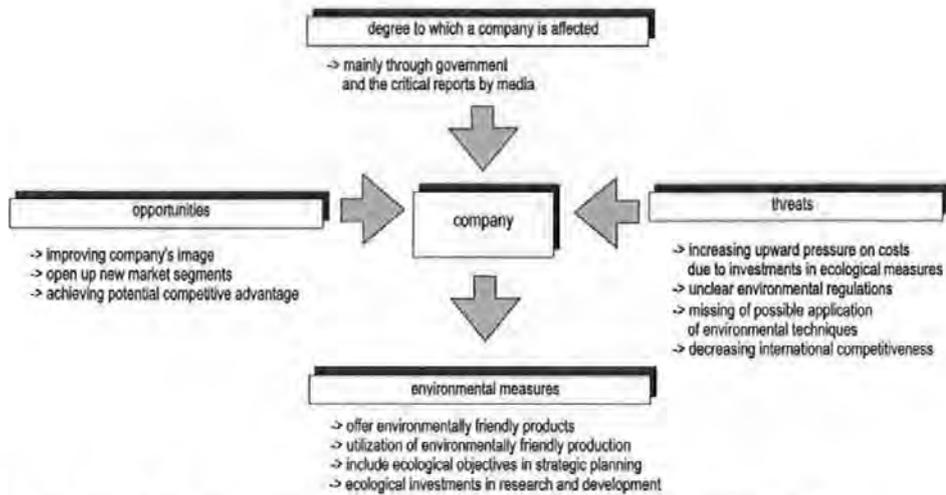
A survey conducted on behalf of BJU (Bund junger Unternehmer) in 1984. It revealed that approx. 20% of the companies surveyed agreed that it is worthwhile to do more than to comply with regulations. Moreover, 28% argue

that environmental measures lead to a long-term cost reduction (Freimann 1988). About 76% of the companies noticed increases in costs due to increased government regulations (Töpfer 1985). With regard to the "motivation to act", Winter (1993) refers to a survey of 'UBA-Unternehmensbefragung 1990'. Approx. 4% of the companies surveyed state that they pursue an environmental policy only for public relation reasons. 88% of the companies argue that a negative environmental image is not the desired objective and 71% of the companies pursue an environmental policy to secure their future existence (Figure 4.7).



**Figure 4.7 Motivations for an environmental policy**

Meffert et al (1987) conducted a survey in order to analyse companies' behaviour towards environmental protection. Figure 4.8 summarises the main arguments stated by the companies surveyed. The results also reveal that companies, which are increasingly affected by the environmental trend, are in a better position to assess their advantages and disadvantages.



**Figure 4.8 Survey "Environmental protection and company behaviour"**

Furthermore, they argue that the main reasons for companies behaving rather defensively are a lack of information concerning the possibilities of environmentally orientated strategies, existing short-term strategic approaches and a lack of a completely integrated environmental management concept. Steger (1992) outlines six factors, which might constrain an environmentally orientated strategic approach:-

- Underestimate temporal dynamic'
- 'Regulating pressure'
- Ambivalence of consumer behaviour'
- Afraid of „cultural revolution“
- Management of complexity'
- Environmental protection as an organisational problem'

Meffert et al (1993) referring to a survey conducted from 1987 until 1990, outline obstacles, which have been stated by the companies surveyed. 70% of the companies state that the process- and product related environmental investments are seen as the highest obstacle. The companies state further obstacles like, lack of information as regards environmental regulations and lack of time.

Sietz (1992) further stresses the need for restructuring existing managerial structures, changes in behaviour, emotions and functions etc. The environmental responsibility has to be taken over by all members of the organisation (Strunz 1993, Antes 1994). Winter (1993) argues that a company can be successful in the long run, if it is orientated towards the following principles: *quality, creativity, humanity, profitability, continuity, responsibility, solidarity, loyalty and environment* emphasising the importance to incorporate the environmental aspect at all strategic levels and activities (i.a. Meffert et al 1993, Biddle 1993, Albach 1994, Dodge 1997). However, they argue that the most decisive factor will be the 'fundamental moral philosophy' of companies.

Furthermore, environmental technologies are seen as a key to competitive advantage. Schumpeter (1950) states the perspective that technology is an essential part of gaining competitive advantage. Shrivastava (1995) suggests five environmental technology themes to be covered by firms:-

- Design for disassembly
- Manufacturing for the environment
- Total quality environmental management
- Industrial ecosystems
- Technology assessment

He points out that environmental technologies will have an influence on all organisational functions. Technological changes have to be considered along each stage of the value chain (Table 4.4).

Advantages	Barriers
<ul style="list-style-type: none"> <li>• Cost reduction</li> <li>• Revenue enhancement</li>   <li>• Supplier ties</li> <li>• Quality improvement</li> <li>• Competitive edge</li> <li>• Reduction of liabilities</li> <li>• Social and health benefits</li> <li>• Public image</li> <li>• Ahead of regulatory curve</li> </ul>	<ul style="list-style-type: none"> <li>• Costs of developing solutions</li> <li>• Lack of know-how and environmental information</li> <li>• Organisational inertia</li> <li>• Contradictory regulation</li> </ul>

**Table 4.4 Advantages and barriers of environmental technologies**

This is further supported by Porter et al (1995) who state that the environmental issue triggers off innovation and leads to an increasing technological standard which in the end results in an advantage for business such as lower costs and improved quality and value respectively. They argue that firms should see environmental improvements in terms of resource productivity. Anyhow, it can be argued that today, using resources productively indicates competitiveness rather than simply utilising resources. Innovation can be categorised in the introduction of new technologies in order to reduce costs of pollution and through the improvement of resource productivity. They further state that these approaches may result in an early-mover advantage for the firm.

Gege (1997) in his work outlines 1000 success stories of firms pursuing environmental policies. He points out that firms when approaching an intelligent and innovative environmental management approach, can achieve cost savings, increase returns and make an important contribution to 'sustainable economy' regardless of the industry and size of the firm. It can be argued that environmental activities may, in most cases, result in a business advantage.

Various authors point out that businesses are the only institution which have the power to ensure sustainability (e.g. Hawken 1994). Whereas, Gladwin et

al (1995) also point out that in order to harness this power, sustainable behaviour must become a source of competitive advantage. Sustainable development should be viewed as an opportunity (Hart et al 1999). Fussler et al (1996) go further arguing that the world will not change toward sustainable development if firms cannot make a profit.

Hssain (1999) in his review on the impact of "going green", points out that the frequently discussed win-win situation is less apparent for firms. There are also opposing voices arguing that competitive advantage and sustainable development are totally divergent, and that environmental issues should not be viewed merely as a strategic tool for gaining competitive advantage (Welford 1995). A sustainable development approach deals with global environmental, social and equity issues, whereas a competitive advantage approach is primarily about seizing opportunities (Welford 1996).

Taking up this argument, Murphy et al (1997) state that a partnership between business and environmental groups is more of an advantage and necessary in order to successfully approach the sustainable development path. The work of Wolff (1998) supports the view. He stresses that the green challenge is different to other challenges a firm is faced with. He argues that the problems are too complex so that the individual player can not solve them. As argued by Hartman et al (1999) environmental problems are too complex to be solved solely by government or business on their own. The challenge requires an interdisciplinary and collaborative approach. This view is also shared by Fussler et al (1996), who argue that collaborations between firms and within industries lead to the fact that learning processes can be speeded up (Crosbie et al 1995). Co-operations and alliances can act as a catalyst and result in increased environmental improvements (Jones et al 1997). At the conference of the Greening of Industry Network (1993), the need for partnerships were emphasised. Collaborations between firms, governments,

institutions and other stakeholder groups is central to partnerships. Co-operation and participation with workers has already been a major objective within the Agenda 21. However, Jones et al (1997) argue that based on co-operation and partnership and the pluralist structure, business have the best chance to introduce the necessary change.

Next to the discussions among being green and its impact on the competitiveness, the discussion concerning eco-efficiency increased (e.g. Schmidheiny 1992, Fussler et al 1996, von Weizsäcker et al 1997, DeSimone et al 1997, Schaltegger 1999). Two main trains of thoughts can be recognised. Those who argue that eco-efficiency provides a major path to sustainable development and others who state that eco-efficiency is mainly about reducing costs, representing a 'business-as-usual' approach. Eco-efficiency is about efficient usage of resources. Fussler et al (1996) state that eco-efficiency is

*'the delivery of competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing ecological impacts and resource intensity, through the life cycle, to a level at least in line with the earth's estimated carrying capacity'*

Resource productivity is fundamental to eco-efficiency. It is argued that ecology is not an undesirable cost factor, but a welcomed economic productivity factor (Dyllick 1999). The World Business Council for Sustainable Development, a group of large transnational corporations made eco-efficiency to their major objective. An eco-efficiency approach adopted by firms leads to improvements in the competitiveness (Schmidheiny et al 1996). Fussler et al (1996) even argue that eco-efficiency is a translation of sustainable development at the operational level, however, emphasising the need for breakthrough improvements. Welford (1997), on the other hand, criticises that eco-efficiency solely encourages technical and scientific solutions. An eco-efficiency approach offers more simple solutions, which are welcomed by

several industries. Furthermore, he attacks the views outlined in the book of Schmidheiny (1996) or statements like 'eco-efficiency leadership' results in 'creating more with less and coming out looking great' (Stigson 1995). He argues that such statements, respectively such a consciousness is 'amazing and alarming'. Eco-efficiency should be seen as a starting point with plenty of work left.

Schmidt-Bleek (1995) in his work stated that we need a dematerialization by a factor of 10. Thus, increasing eco-efficiency by a factor of 10 would require entirely new approaches. The demand for sufficiency emerged. Gladwin et al (1995) emphasize the need to concentrate on sufficiency rather than maximisation and eco-efficiency (see also Welford). It can be argued that if the southern regions strive for equal consumption levels than the northern regions, then eco-efficiency will not be sufficient. The argument that eco-efficiency is not sufficient to achieve sustainable development is supported by several authors (Sachs 1995, Welford 1996, Hutchinson et al 1997, Welford 1997). A shift from efficiency to sufficiency enters the debate. The demand of sufficiency is preventing unnecessary excess use and consumption. Some authors go even further. They demand that the "need" for a product should be questioned. Based on this issue, SustainAbility (1995) developed a tool called the 'Need Test' to be incorporated into strategic planning. This is also supported by Ehrenfeld (1998), who argues that eco-efficiency can not counter the absolute impacts by growth. In recent papers, Hockerts (1999) refers to the trend of a service concept, by indicating that even more profit can be generated by selling less products but more services (e.g. the leasing concept).

Concerning the discussion among a win-win situation, Walley et al (1994) criticise the - in their opinion - extremely positive interpretation of a win-win situation in the literature (Gore 1993, Porter 1991, 1993). They argue that

environmental investments mostly lead to increased costs and in the minority of cases to a positive financial return. This perspective is also partly supported by Azzone et al (1994) pointing out that anticipation of changes represents a risky process. They furthermore claim that with the trend of increasing environmental regulations the trend of increasing costs is unstoppable. Therefore, a win-win solution should never be the basis of an environmental approach. Instead firms should rather focus on value than on costs, compliance, etc. Finally, it can be stated that it is not the question of how much a firm may incur losses, it is more a question of the readiness to pursue environmental improvements in a cost effective way. This argument is also supported by Crosbie et al (1995).

Rugman et al (1998) created a framework, which has been used to position the literature on environmental perspectives. Figure 4.9 summarises the different environmental perspectives.

Impact on Industrial vs. Environmental Performance

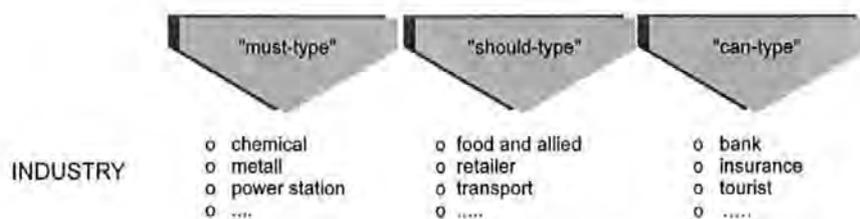
		Impact on Industrial vs. Environmental Performance	
		CONFLICTING	COMPLEMENTARY
Time Horizon of Managerial Response	STATIC	<p><b>1</b></p> <p>'polluter pays'</p> <p>merely comply with regulations</p> <p>Clarke (1994), Esty (1994), Gray (1994), Cairncross (1994)</p>	<p><b>3</b></p> <p>'win-win'</p> <p>'invest in development of green capabilities'</p> <p>Greene (1994), Wells (1994)</p>
	DYNAMIC	<p><b>2</b></p> <p>'reject development of green capabilities'</p> <p>'reduce negative impact on industrial performance'</p> <p>Gray (1994), Stavins (1994), Smart (1994), Walley et al (1994)</p>	<p><b>4</b></p> <p>'win-win' - 'development of greencapabilities in innovation offsets'</p> <p>Bavaria (1994), Piet (1994), Porter et al (1995)</p>

**Figure 4.9 Classification of literature on environmental perspectives**

Furthermore, they argue that the success of an environmental approach also depends on the leveraging potential of resource commitments aimed at improving environmental performance. The question to be asked here is whether the resource commitment will generate any competencies, which then may result in a competitive advantage. It will depend on the flexibility of

resource commitments or in other words the flexibility regarding the reversibility of resource commitments. They argue that these two dimensions should be taken into consideration before making a decision on the development of environmental capabilities.

Meffert et al (1987) argue that the environmental impact varies among the type of industry the companies operate in. The size of the company does not really have a great influence on the willingness to introduce environmental measures, except companies having less than 1000 employees, which appear less inclined to introduce environmental measures. In order to be able to find the appropriate strategy and an environmentally orientated structure it is necessary to firstly analyse the degree to which the industry is affected (Menth 1989, Fromm 1992). However, Zahn et al (1992) argue that sooner or later all industries will be affected by the ecological trend. Companies can be divided into three types of environmental behaviour depending on the industry they belong to (Figure 4.10). Companies belonging to the „must-type“ are mainly producer of environmentally damaging products or employ environmentally harmful production processes. Products or production processes of companies which do not have an immediate impact on the ecology can be grouped into the „should-type“. However, their products may depend on a clean environment, like producers of baby food (author anonymous 1991).



adopted with alterations from Manager Magazin (1991)

**Figure 4.10 Impact which depends on the type of industry**

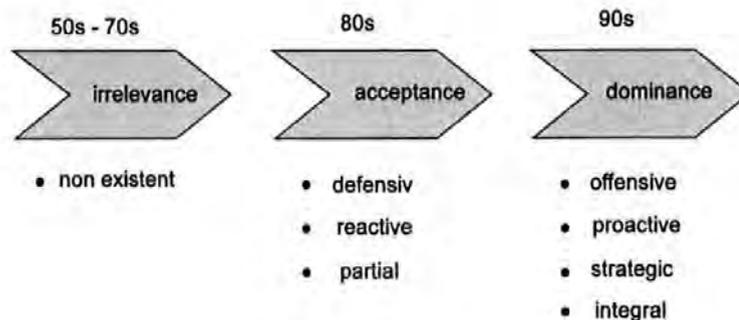
### 4.2.1 Environmental management approaches

In the last two decades a plethora of typologies evolved as regards environmentally orientated management behaviour (Table 4.5).

A GENERAL IDEA OF STRATEGIC TYPOLOGIES	
conceptual derived strategic typologies	
Feldmann (1971)	ignorance / resistance / conformity
Krüger (1974)	influencing the active behaviour / conformity / retreat / passive behaviour
Kubicek et al. (1976)	influence / conformity
Stitzel (1977)*	anticipation / conformity / resistance
Ruppen (1987)	offensive environmental strategy / defensive environmental strategy
Post (1987)	adaptive- / interactive reaction
Miles / Snow (1982)*	defender / prospector / analyser / researcher
Miles (1982)*	competitive strategies / political strategies
Zeithami et al. (1984)	independent strategies / co-operative / strategies / strategic manoeuvring
Meffert (1985)	ignorance / conformity / innovation / social responsibility
Senn (1986)	influence / use of information / organisational structure
Wicke (1987)	offensive / defensive environmental strategies
Kirchgeorg (1990)*	innovation / conformity / resistance / retreat / passiveness
Hunt et al (1990)*	Beginner / Fire Fighter / Concerned citizen / Pragmatist / Proactivist
Zahn (1992)*	resistance / passiveness / shift / withdrawal / adaptation / innovation
Roome (1992)*	non-compliance / compliance / compliance-plus / excellence
Welford (1994)*	ostriches / laggards / thinkers / doers
Hall et al (1996)	compliant / eco-efficient / environmental

**Table 4.5 Strategic typologies**

According to Figure 4.11 a development of 'management values' towards a more offensive, strategic attitude can be recognised.



adopted from Fox et al (1992)

**Figure 4.11 Change in the 'ecological' value**

Schmidt (1974) argues that a defensive approach indicates a lack of independence, by only reacting to legal requirements. An offensive approach stresses the concept of freedom incorporated into the business philosophy. From his point of view the development and implementation of an offensive concept requires a 'creative way of thinking'.

Table 4.6 further summarises a number of empirical studies concerning the environmental approach of firms (Hipp et al 1998).

	Meffert et al (1990)	Dyckhoff et al (1994)	Middelhoff (1994)	Green et al (1994)	Kreikebaum (1993)	Coenenberg et al (1994)
Subject (year)	197 firms from eight industries	132 firms in the metal producing industry	6 firms in the chemical industry in Germany and Swiss	169 firms in several industries in GB	9 firms in the chemical industry	483 firms in several industries
Basic ecological orientation	Varies among the industries (Depends on the degree they are affected)	Add-on, internal measures. Reduction (passive)	Reduction. Integrated approach	Investments in ecological changes	Trend toward reduction and integrated solutions	Emphasis on waste disposal. No ecological R&D necessary.
Implementation of the ecological approach	Marketing activities	Specific ecological units. No integrated concept	Established at all organisational levels	Cooperation with customer. Investments in new technologies.	Ecological approach of R&D management	Check-list. Environmental impact analysis.
Drivers for an ecological approach	Improvement of image. Motivation of employees and competition	Re-usage and waste disposal (competitive advantage)	Long-term orientation. Secure firm's viability	Ecological pressure from public	Long-term orientation. Market potential	Legal requirements
Supporting issues	Competitors	Legislation	Central management	Organisation	Innovation-Management	Legislation
Hindering issues	Cost, information	no details	no details	no details	no details	Cost

adopted from Hipp et al (1998)

**Table 4.6 A range of empirical studies**

A plethora of different key-terms exist in the literature as regards a potential environmentally orientated management approach. The key strategies can be summarised in: resistant, reactive, proactive and sustainable. The sustainable strategy stands for the demand of several authors that business and industry has to undergo radical change, requiring a fundamental rethinking of how we

live and behave. It requires the coverage of ecological, social and equity issues. It is further argued that the traditional approach of how firms are doing business and are organised is not appropriate for approaching sustainable development (e.g. Gladwin 1995, Peattie 1996, Shrivastava 1997, Welford 1997, Roome 1998). Roome (1992) points out that the 'excellence' approach leads a business toward a culture, which supports 'sustainability ethic' together with an integrated environmental management system. Meima (1994) subdivides the discussions on environmental approaches in three categories: those which perceive the environmental problem as an ethical issue, others see it more in terms of financial benefit and others which relate it to a quality issue. Welford (1995) summarises ten different forms of environmental strategies ranging from superficial change to fundamental change (Figure 4.12). His perspective indicates that firms have to go even further than approaching a proactive ecological approach, demanding fundamental changes in values, cultures and behaviours. However, it has to be pointed out that some authors who talk about proactive and innovative ecological approaches include cultural and ethical changes.

Fundamental Change	Strategy	Ideology	Comments
10	Economic and societal change	Creative	Change behaviour, objectives, and outlook.
9	The transcendent firm		
8	Regionalism and cooperation	Explorative	
7	Culture change		
6	Auditing for sustainability	Ethical	
5	Product stewardship		
4	Integrated environmental management system	Proactive	
3	Environmental auditing		
2	Technological fix	Reactive	
1	Add-on pollution control		
Superficial Change			Activity which goes beyond processes. 'Cradle-to-grave'. Life-Cycle Assessment.
			Assessing, monitoring, acting through auditing methodology.
			Compliance approach Technology-based actions Reactive strategies

adopted from Welford (1995)

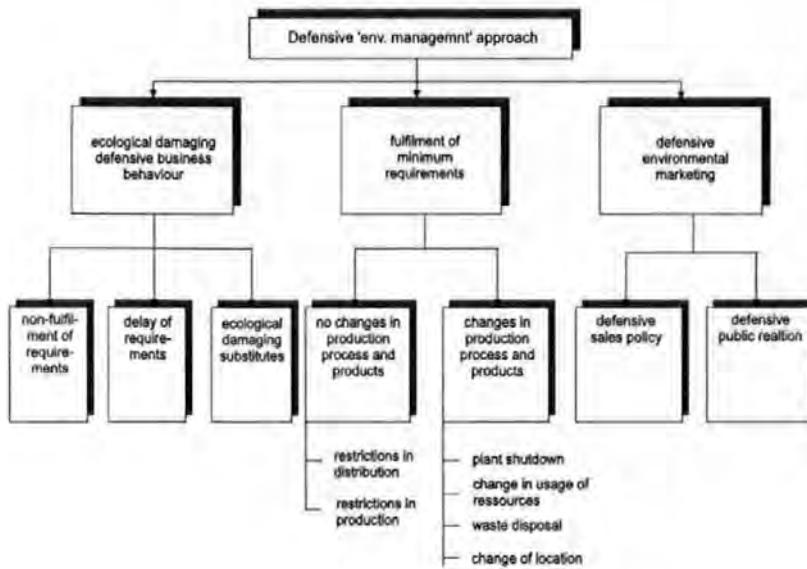
Figure 4.12 Environmental strategies ranging from superficial to fundamental change

Despite the diversity of terms used in the literature, the basic behaviour of companies can be classified into: -

- *Controversial (indifferent) management approach*
- *Defensive management approach*
- *Proactive resp. Innovative management approach*

The element of a ***defensive environmental management approach*** is just to do what is necessary to avoid legal confrontation. Companies just respond to government regulations. They operate within the limits of laws (i.a. Nüßgens 1974, Meffert et al 1986, Wicke 1988, Seidel et al 1988, Kreikebaum 1989, Servatius 1992). Figure 4.13 illustrates characters of a defensive

environmental management approach. The defensive approach can be divided into 'Passiveness towards ecological problems' and 'Conformity'.

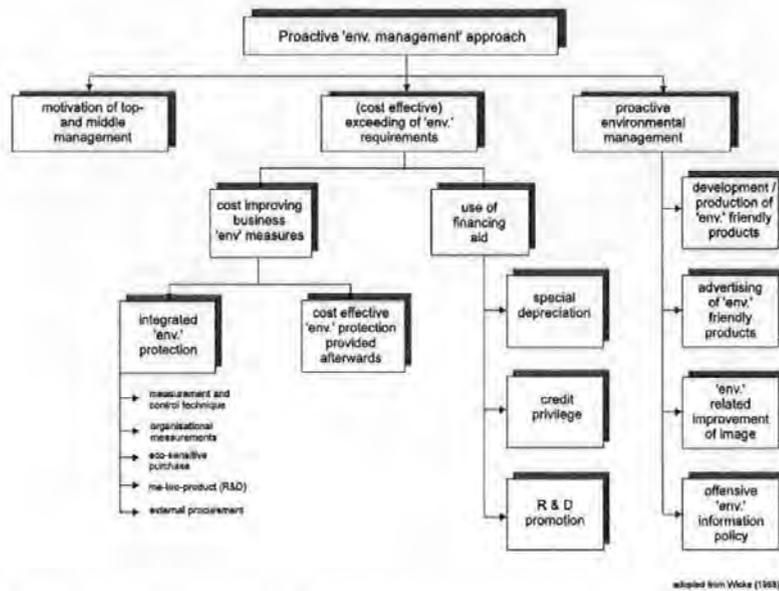


adopted from Wicke (1992)

**Figure 4.13 Defensive environmental management approach**

Weis (1990) argues that such a policy may lead into a dead end and Hopfenbeck (1990) describes this policy as a "crisis-promotion-policy".

The *proactive resp. innovative environmental management approach* comprises the idea to develop, support and take advantage of opportunities resulting from the ecological situation. It goes even further, introducing changes by innovation and thus creating the future. Companies, which face growth potentials on the market, should pursue a proactive strategy in order to gain competitiveness rather than only reacting to legal conditions (Nüßgens 1974, Strebel 1980, Meffert et al 1986, Wicke 1988, Kreikebaum 1989, Strunz 1993). Figure 4.14 illustrates the characters of a proactive environmental management approach.



**Figure 4.14 Proactive environmental management approach**

Hunt et al (1990) conclude that regarding a proactive environmental approach seven issues have to be emphasised: top level support and commitment, corporate policies that integrate environmental issues, effective interfaces between corporate and business unit staff, high degree of employee awareness and training, strong auditing program, strong legal base, and an established ownership of environmental issues (Hunt et al 1990, Roome 1992, Newman et al 1993, Taylor 1992, Welford 1992). Proactive environmental management means: *“responsively addressing business, moral, and social obligations to protect both a company and the environment.”*

Several authors emphasise that a proactive environmental approach should cover the following strategic issues, with regard to ecology: -

- an integral part of the company’s philosophy,
- incorporated into the company’s mission and objectives,
- integrated at the top management level,
- translated into offensive marketing actions,
- supported by active intelligence activities,
- supported by active participation in knowledge and technological transfer.

Steger (1993) favours a three stage approach: -

- *Risk orientated*

A company faces low market potentials whereas the ecological threat can be seen as being quite high. In this case, the company will face tough environmental regulation to which they will have to comply. This approach leads to a more technical solution. It can be seen as a first step every company should initially approach. However, a company has to be watchful of competitors, which achieve more than required.

- *Chance orientated*

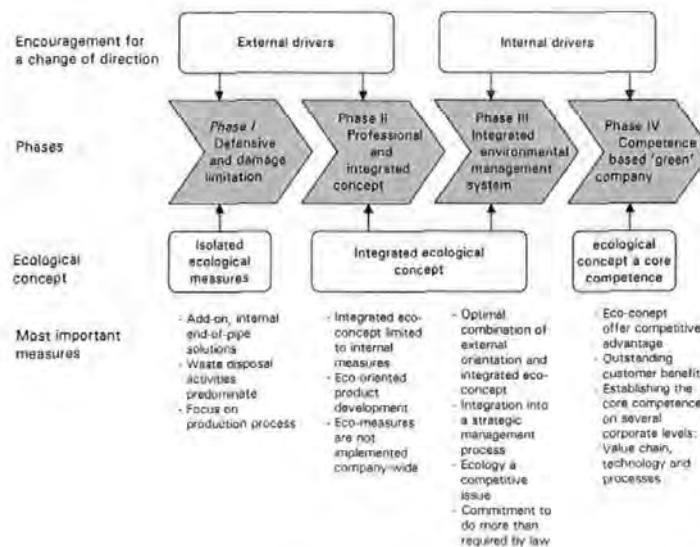
The ecological market can be seen as being sensitive and the company faces high market potentials. The company can take advantage of market opportunities by creating an additional benefit to the product. It can be expected that a company faces tough competition because every company wants to benefit from 'being the first one'.

- *Innovation orientated*

Management is faced with a real challenge. The company faces high market potentials and tough ecological threats. This can offer potentials for success but also increased risks. This approach can lead to advantages like early profits, development of a product standard or differentiation, advantageous image, etc. However it may also lead to disadvantages like lack of information at customer level and thus to less acceptance, quality assurance and high R&D costs, etc. The area of responsibility lies in the entire company.

However, the process of environmental strategic orientation should be seen as an evolutionary process. The risk-orientated approach is a basic strategy a company may initially pursue. Following from this, a decision on when and to which degree, a chance or innovation orientated strategy should be pursued

depends on the market situation a company faces. Steger further argues that a firm has to go through a risk-orientated strategy before attempting the next stage. Hipp et al (1998) further support Steger's perspective - in a similar way - arguing that firms go through a dynamic process (Figure 4.15). They point out that firms initially start with a passive posture and from this stage may move towards a more innovative strategy.



adopted from Hipp et al (1998)

**Figure 4.15 Four phases of environmental management**

Wiles (1994) supporting the need for an 'innovation' orientated approach argues that it is probably the most desired quality in competitive performance. Innovation stands for implementation of solutions to problems like environmentally orientated production and other processes without any delay (time-based innovations, time-based product introduction). An innovative strategy has a lasting impact on a company's competitive position. Although high investments in R & D requires a good economic situation, innovation offers the opportunity to build market entry barriers and a challenge of innovating ecological technologies and solutions (Dyllik 1991, Fomm 1992, Servatius 1992). Steger associates the 'Innovative' alternative with the entrepreneurial pioneer defined by Schumpeter, arguing that this person makes

use of 'first moves' in order to reduce costs and develop a competitive advantage.

Several authors demand to approach the ecological issue proactively and through innovation. A wide range of innovations can be observed, technical-, economical- and social innovations, new ways of production, changes in organisational structure, and changes in the general conditions of the business environment, etc. (Lehr et al 1999, Zundel 1999). Some authors argue that environment represents a major challenge, which can be used by firms as a strategic opportunity to build up or renew their innovative capability (Crosbie et al 1995).

Another recurring view seems to be that firms should encounter sustainable development with innovation resulting in a fundamental change how business is run. Contributing significantly to sustainable development requires more than incremental improvements or changes. The progress toward sustainability requires a strategic commitment to innovation, enabling firms to introduce fundamental changes rather than incremental, if change is to be implemented in time. Hart et al (1999) criticise that, in general, environmental management approaches are only about improving existing products and processes on a continuous or incremental base. Sustainable development is more about reinvention, fundamental changes and innovation. An overall demand for a fundamental change or transformation of structures, businesses, industries can be observed, which may result in the end in a strategic advantage (Welford 1995, 1996, Hart 1997, Fussler 1996, Redclift 1995).

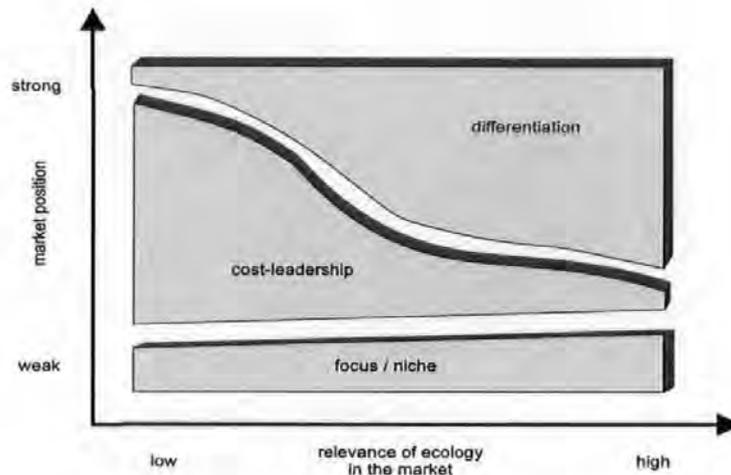
Moreover, Hart et al (1999) raise the need for visionary and future orientated innovators and entrepreneurs. They will be able to approach the sustainable development as a major business opportunity and thus have the requisites for introducing fundamental innovations, inducing changes. Fussler et al (1996)

go even further arguing that firms have two choices, pursuing *'business as usual or embracing a strategy of innovation and entrepreneurship to outsmart competitors'*. In their work on eco-innovation they emphasise the need of a long term view as technologies can take years and decades to develop. Interestingly, Jones et al (1997) refer to the Iroquois Indians who try to predict the effect of a decision for the next seven generations to follow.

Roome (1994) supports the view. He points out that there is a necessity of innovation when approaching the ecological issue. He emphasises the need to incorporate environmental issues into the business R&D activities, which requires new forms of thinking and thus postulates the development of innovative forms of organisations, e.g. collaborative frameworks and networks (see also Crosbie et al 1995). He strongly advocates that R&D management is of great importance because of the need for new products, processes and technologies in order to achieve a greater environmental sensitivity. He states that the R&D view may provide a further route to environmental management representing a prerequisite for organisational change (Roome 1993). Someren (1995) stresses that organisational innovations play a crucial role moving down the path of sustainable development.

Furthermore, the environmental management approach may depend on the competitive strategy utilised by companies (Achleitner 1985, Frowein et al 1990, Kirchgeorg 1990, Steger 1993). A proactive and innovative environmental approach can be seen as highly compatible to a differentiation strategy. Those companies pursuing a cost leadership strategy may face major problems in maintaining a cost advantage when integrating expensive ecological aspects (Figure 4.16). This is also supported by Meffert et al (1993). They argue that companies, which pursue a differentiation or a focus strategy as regards the ecological aspect, are in a better position to improve a company's competitive situation. They further put forward that a

differentiation strategy requires companies to be more flexible and have high capacity for innovations.



adopted from Little (1990)

**Figure 4.16 Environmentally orientated competitive strategy**

Firms should match (determine the 'strategic fit') the ecological policy to the already pursued competitive strategy (Achleitner 1985, Zahn 1992). However according to Zahn et al (1992) the hypothesis of Achleitner (1985) that the ecological approach generally depends on the generic strategy pursued by firms, can not be confirmed due to continuous changes within industries especially induced by eco-related stakeholders.

Meffert et al (1993) conducted a survey from 1987 until 1990 and grouped the companies into four clusters representing basic approaches companies may pursue (see also Kirchgeorg 1990). Table 4.7 summarises the features that can be related to the clusters resulting from the survey. The 'selective' orientated firms are characterised by following highly contradictory strategies. 'Passive' orientated firms pursue a resistance strategy. The 'active' orientated firms concentrate more on internal measurements and the 'innovative' orientated firms also approach market related issues. However, Steger (1993) argues that the grouping might not be able to offer any general „strategic fit“ between competitive orientation and strategies for environmental protection.

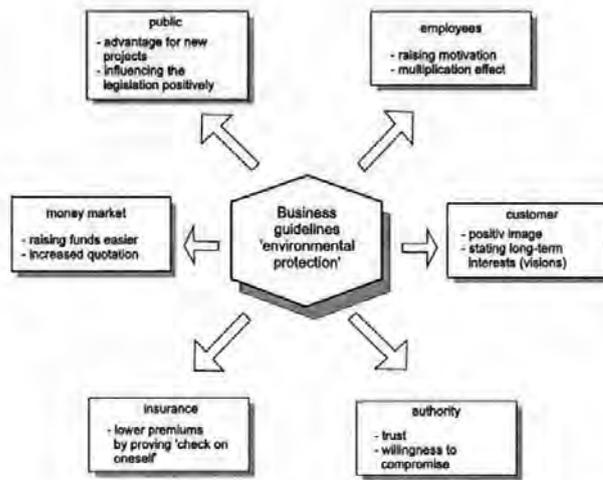
basic position		selective	passive	in-house active	innovative	
		20 %	30 %	27 %	23 %	
S T R A T E G Y	market related e.p. strategy	+	-	-	+	
	in-house e.p. strategy	+	-	+	+	
	resistance strategy	+	-	-	-	
	retreat strategy	+	-	-	-	
E N V I R O N M E N T A L  M E A S U R E S	offering environmentally friendly products	+	-	-	++	
	diversification into new ecological markets	0	--	--	++	
	environmental advice	+	--	-	+	
	environmental orientated communication	++	-	-	+	
	environmental orientated distribution	+	--	--	-	
	environmental orientated R & D	process	+	-	+	0
		product	+	-	-	+
	e.p. organisational structure	+	-	-	0	
	success	+	-	-	++	
	impact (market)	+	-	-	+	
S I T U A T I O N	Impact (society)	+	-	+	-	
	environmental orientated competitiveness	++	-	--	+	
	status of ecological objectives	high	low	middle	high	
	obstacles to achievement	very high	middle	low	low	

Note: (e.p. = environmental protection)

adopted from Meffert et al (1993)

**Table 4.7 Typologies of basic positions of companies**

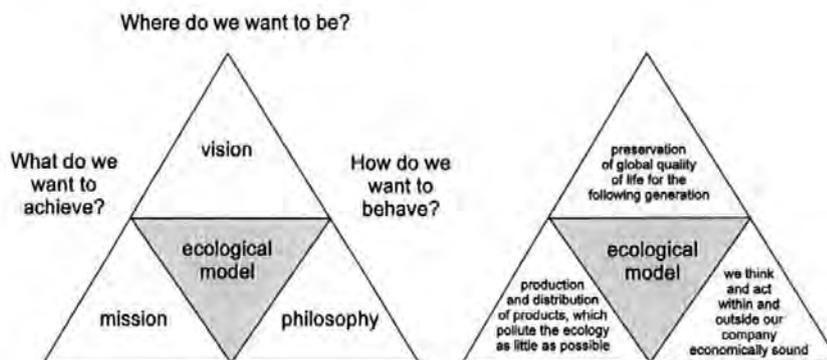
Furthermore, the survey also revealed that the impact of social groups is rated higher than from relevant market players (Kirchgeorg 1990). As already mentioned the role and importance of stakeholders has increased. Companies need to evolve explicit stakeholder guidelines as regards environmental protection. These guidelines can be interpreted as the interface to the company's stakeholders (Figure 4.17). Social Audits also offer an appropriate platform for stakeholder dialogue.



adopted from Annighöfer (1990)

**Figure 4.17 Environmental guidelines on stakeholders**

Several authors (Meffert et al 1986, Senn 1986, Rufer et al 1992, Strunz 1993, Crosbie et al 1995) emphasise the importance of the integration of the 'ecological' aspect into the business vision, mission and philosophy which should lead to a change of direction, or a possible change in management style and organisational structure (Figure 4.18). Fussler et al (1996) point out that a vision is a critical factor. It has to comprise shared responsibilities, have a stronger social sensitivity and a long term perspective of sustainable development. The establishment of a corporate philosophy as regards the ecological issue is necessary in order to bring consistency to the company's environmental activities.



adopted from Fox et al (1992)

**Figure 4.18 'Ecology' as a part of a business model**

It is interesting to note that Steger (1995) points out the need to analyse what type of firms are more inclined to become a sustainable co-operation. He argues that a transition depends on the firm's capabilities and the management intention. Furthermore, the success of such a transition depends on the management's approach to doing business, which may be influenced by national tradition, culture and basic values and legal requirements.

Kiernan (1992) emphasises that synthesising environmental and corporate strategies will involve virtually reinventing the entire firm. He further stresses that,

*"...a corporate attitude which views environmentalism positively, as a creative source.... Entirely new conceptions of the role of the firm and its boundaries. ... New internal organisational forms which consciously promote rather than inhibit interdepartmental collaboration and learning are needed.."*

It is argued that a successful environmental orientated management has to find the right 'strategic fit' between internal and external potentials and fully integrate the ecological issue into the organisation. It can be said that companies facing changes in the environment can react quite differently, which presumably may depend on the nature and style of management (i.e. corporate culture) and industry. The aim should be to achieve the appropriate fit between strategy and culture. A major strategic approach should go hand in hand with an adaptation of corporate culture, i.e. management style and organisational structure (Meffert et al 1993). Jones et al (1997) refer to culture as something a firm is and not has. Moreover, the culture within an organisation is strongly influenced by the attitudes, values and actions of the senior management (Welford 1995).

The work of Dodge (1997) points out that business culture has a great impact on the ability to identify environmental problems, adopt solutions, and the way something is approached. He supports the theory that if the owner of a

business has a high environmental awareness, it will have a great influence on core values of the business. The integration of the environment into the firm's value system is of utmost importance (Roome 1992, Welford 1995). It can be argued that a business' culture has a great impact on the firm's stance on sustainable development. This view is shared by Dodge (1997) who states that internal culture is a determining factor for environmental strategies. Moreover, he also supports further theories that a business with a culture encouraging co-operative traits, and an ability to learn, is in a better position to perform more profitable environmental strategies. These views are supported by a study conducted by Wehrmeyer et al (1995), who revealed an important correlation between corporate culture and environmental performance.

Schreiner (1988) in one of his earlier papers, outlines that a proactive and innovative environmental policy consequently may require a comprehensive change in the organisational structure in order to be able to pursue such an innovative policy. An innovative orientated management requires innovation and creativity potentials from employees and flexible organisational structures. Furthermore, increasingly multi-disciplinary project-teams and inter-related co-operations are favoured (Kreikebaum 1991). Kreikebaum (1989) further argues that an internal reorientation of a company is necessary (Figure 4.19).



adopted from Rufer et al (1992)

**Figure 4.19 Business development towards ecology**

In the last years the discussion among the greening an organisational issues increased. Other very important works include Welford's (1997) work on culture and organisations. The work makes an important contribution to organisational theories and its relation to business environmental management. Over the years, the human factor increased in importance. Employees should be incorporated into the development of strategies towards sustainable development. Furthermore, business has to educate and inform employees. A plethora of key-words are associated with the organisational discussion, such as values, attitudes, beliefs, incentives, empowerment, communication, creativity, requiring new organisational structures and cultures (Meima et al 1997). Participation is a key component of sustainable development, requiring empowerment of workers and a more democratic trait. Moreover, participation of employees in the development of environmental programs lead to higher commitment (Klinkers et al 1995, Barrett et al 1995). Weis (1979) points out that the preliminary stage for being successful lies in the information and motivation of employees. Motivation is declared as being "*... an event of development, maintenance and an order of behaviour within an organism ...*", which provides the basis for a consequent and convinced behaviour. Halme (1997) further argues that the environmental aspect can inspire and motivate employees. An environmental change process can even lead to a sense of togetherness (Callenbach et al 1993).

As already mentioned, several authors deal with organisational culture as regards sustainable development (e.g. Wehrmeyer et al 1995, Welford 1997). Business needs to shift from traditional unitarist to more pluralistic cultural strategies, from top-down management driven systems towards bottom-up, and towards a co-existence between participating interest groups (Bate 1994). Halme (1997) talks about the middle-up-down approach indicating that employees work together horizontally and vertically. Jones et al (1997) point out that businesses with unitarist structures believe to be more innovative,

healthier and more effective, whereas pluralist cultures require an increase in employees' powers, democracy and sharing of profits. Furthermore, they stress the importance of empowerment strategies towards sustainable development, and the need to involve the whole staff. In an earlier paper, Welford et al (1996) point out that the traditional balances of power should be changed.

Gladwin (1993) in his work applied organisational theories to environmental management approaches. He outlines several approaches from 'greening as organisational learning', 'greening as transformational leadership', to 'greening as organisational evolution'. In all these approaches greening is associated with a change and learning process. Halme (1997) points out that an environmental change process is evolutionary supported by an ongoing learning process. It has been stated that the development towards sustainable development requires change and learning. Emerson et al (1997) discuss this issue in context with the 'organisational learning and environmental responsibility' model, where they refer to the single and double loop learning. It indicates that detection and correction of errors leads to change. The arguments related to an unstable environment and its necessity for learning can be closely related to the ecological issue.

Throughout the literature review, several authors emphasise the need for a fundamental change business has to undergo. Murphy et al (1997), by taking up this argument, state that if businesses are to meet the demand of an ecologically orientated future, they will need to undergo a profound organisational change. This may mark the beginning of an organisational learning process (Roome 1994, Pedler et al 1997). The theories of learning organisations (Argyris et al 1978, Senge 1990, Roome 1994, Pedler et al 1997) show a close link to a biological system. Pedler et al (1997) argue that organisations which can change and learn, fit with biological metaphor of

organisations as organisms. Moreover, Clarke et al (1999) organisations' 'learning-action network' concentrate on the informal linkages of individuals by the flow of information, knowledge and ideas. This approach supports the theories of collaborative, more open and learning structures to bring about environmental objectives. Interestingly, Callens et al (1998) emphasise that the economic sphere must co-evolve with the environmental and social sphere, which requires a real change from all actors. This has also been related to a continuum and the double loop issue, which can not be achieved if resistance to change exists. With regard to the driver for organisational learning, it is argued that a proactive approach is more supportive to firms as it triggers a process of organisational learning (Sharma 1995). Furthermore, Halme et al (1995) conclude that a majority of external conditions may trigger a process of organisational change.

Interestingly, Emerson et al (1997) refer to a 'flexible firm model'. They relate this model to the developments of new contract models, arguing that flexible firms lead to anxiety, stress, and reduce the likelihood of change and learning. With regard to the entrepreneurial theories and its positive relation to the environmental management approach, Emerson et al (1997) have reached different conclusions. They argue that a high concentration of power, which they associate with entrepreneurial organisations lead to an anxiety driven culture (e.g. 'flexible firms'). Furthermore, organisational dynamics are identified as non-optimal behaviour for incorporating ecological issues. This may not support the view that flexible and entrepreneurial firms may have a positive impact on environment development.

Halme (1997) offers an overview of how business can develop an environmentally orientated culture. Furthermore, he outlines several tools, such as education and training, incentive and reward systems, participation and information, motivation, cross-functional task groups, etc., which can be

used to support an appropriate culture. Allowing alternative ways of thinking is also seen as very supportive (Jones 1995). An appropriate cognitive framework is also seen to be necessary; the believe or assumption that ecology is only a cost factor would be very hindering. Halme (1997) further argues that the necessary holistic approach can not be pursued by order from above. Moreover, he states that organic organisational structures are more appropriate for business aiming for environmental change than mechanistic ones.

This view has already been stated by Steger (1993). Companies' organisational structures should be characterised by shallow hierarchies, decentralisation, open channels of communication and motivating working structures (Tietze 1991). Steger argues that companies with bureaucratic-hierarchical organisational structures are rigid, showing strict regimentation. However, Stopford et al (1994) also refer to arguments, that highly bureaucratic firms achieve higher rates of product introduction. In contrast companies with decentralised organisational structures are able to gather their own experiences and than transform them into actions (Pedler et al 1997). Firms with decentralised structures are in a better position to manage environmental protection due to the fact that environmental protection is seen as a cross-sectional task throughout all functional spheres (Nüßgens 1974, Strebel 1980, Schreiner 1988, Strunz 1993). Steger claims that environmental protection is more compatible with modern organisational structures, however, the challenge lies in maintaining an equilibrium between stability and flexibility. Welford (1995) supports the view and postulates that bureaucratic structures are not beneficial to pursuing a sustainable approach. He stresses the need for more management innovation and imagination.

It is generally agreed that an environmental approach needs the complete commitment of the whole organisation. The need for empowerment and the

introduction of participatory arrangements has been emphasised. This implies that the human resource department has to play an important role. Emerson et al (1997) describe the role and importance of an HRM department. An HRM department has a great contribution to the progress towards sustainable development. Several authors emphasise the need for appropriate recruitment, training, motivation, reward, performance appraisal, communication, ownership, and change management (Crosbie et al 1995, Welford 1997, Emerson et al 1997). Change management is specifically of importance. Training also plays a key role in developing an employee's increasing awareness (Welford 1996).

These views are also shared by Callens et al (1998). They argue that moving towards sustainable development a change process has to be started. There is a need to achieve a harmony between ecological, economic and social objectives down the path of sustainable development. This can only be achieved with the appropriate culture encouraging organisational learning, transformation of know-how, and solidarity.

A very recent investigation - of eleven firms, which are classified as environmental pioneers - conducted by Pfriem et al (1998) reveals that several factors represent the firm's 'soft factors of success': -

- The ability to develop and determine an environmental **vision** for the organisation.
- Development of environmental **objectives** related to the vision.
- Environmental **innovations** related to organisational, social and cultural issue, next to technical innovations.
- An environmentally orientated **organisational structure** with the following characteristics such as,
  - **participation** of all member of an organisation,
  - **information-flow**,

- **intense communication,**
- **qualification** of all organisational members,
- **motivation,**
- maintaining **interaction** with external actors (Stakeholders).

These factors are assessed to be decisive of a firm's capability to pave the way for future environmental potentials and durable improvements.

In contrast, Steger (1998) refers to a research conducted by an environmentally orientated corporate management research group, that reveals that firms' environmental protection are still mainly orientated to technical issues. Market opportunity orientation and cross-functional tasks concerning environmental issues are less represented.

It can be summarised, that a proactive and innovative environmental approach requires an enormous effort and fundamental changes within a firm, their behaviour, attitude and value orientation. A firm adopting such an environmental approach needs to develop the appropriate culture and has to have the supportive organisational environment.

#### **4.2.2 Environmental management tools & methods**

One of the first works on environmental business approaches is the Winter model. However, it can be argued that it is more orientated to operational rather than strategic issues. The Winter model was pioneered in 1972 in Germany. It represents a systematic assessment of improvement areas, covering the firm's policy, employee relations, supply chain pressures, marketing and public relations, risk reduction, profitability and the 'club' or 'partnership' approach.

Generally it can be recognised that four criteria can be distinguished which characterise an effective environmentally orientated management approach. The approach should be consistent, systematic, foresighted, and comprehensive. However, several authors argue that these factors can also represent existing obstacles for pursuing such a policy (Volk 1992; author anonymous 1991).

Hopfenbeck (1992) outlines a procedure, which is necessary for companies pursuing an environmentally orientated approach to be successful: -

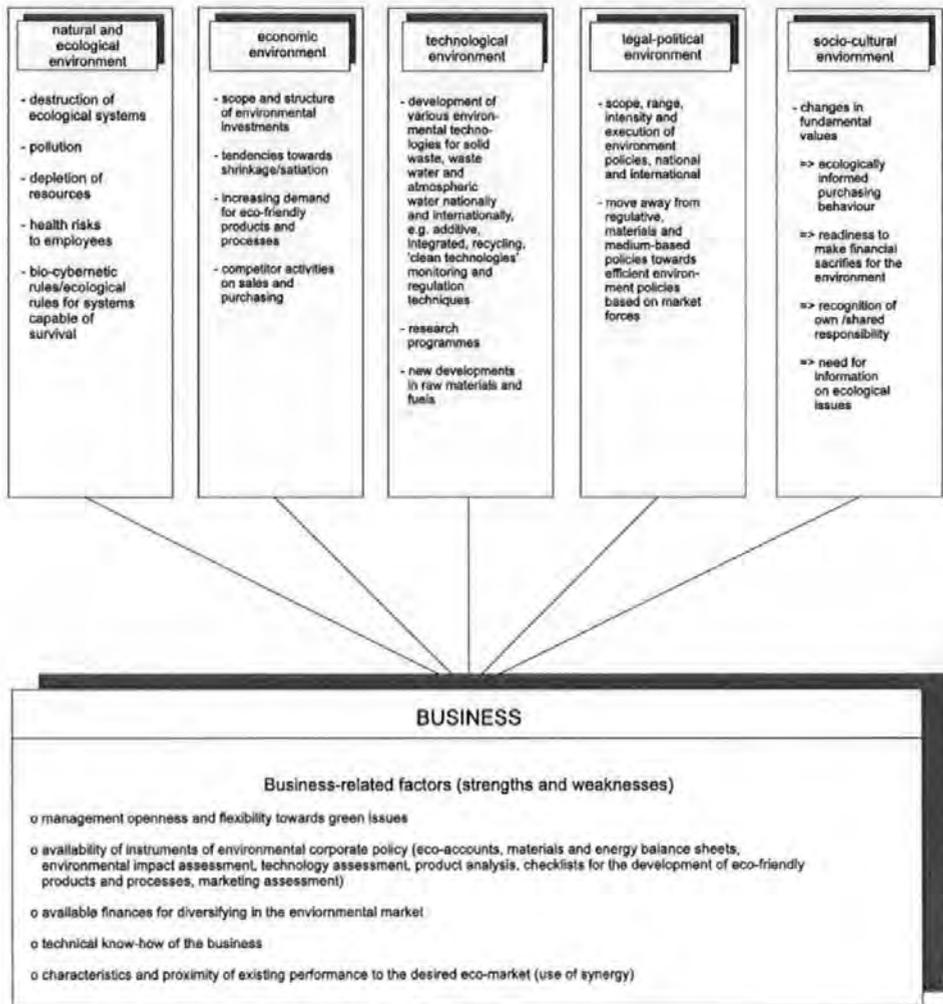
- Identification of key ecological problems in business. Assessment of current status and expand corporate policies where necessary.
- Instigation of ecological concepts into values of management and staff, thus encouraging a transformation of business culture, management style and organisational structure
- Ecology is integrated in system of objectives
- Decide on adequate environmentally orientated strategies
- Ecology is incorporated into every functional sphere of the business
- Ecological thinking is embedded in institutional forms by nominating supervisors, environmental committees, etc.
- Establish eco-controlling-system for planning and control of environmental measures

This process can be closely related to the strategic management process. Welford (1997) in his work outlines strategic management potentials. It covers the necessity for an environmental policy, the development of goals and strategies, human and financial resources, physical facilities, and organisational culture and structure. Furthermore, a very interesting model of ecological positioning has been developed within the book of Welford (1997) (see also Ketola 1996). Moreover, Holmberg (1998) outlines a strategic planning method for sustainability. The method is based on the 'Natural Step' process, which had been developed in Sweden in 1989. The method has

equivalent components to a strategic management process. The method starts with the definition of criteria for sustainability, followed by the description of the current situation. Afterwards the future situation is envisaged (vision) and appropriate strategies are developed.

Sauer (1993) further emphasises the need for every company to initially proceed with a situation analysis (SWOT-analysis). By scanning the current situation, as regards opportunities, threats, strength and weaknesses, it is important to consider, especially, socio-political requirements and requirements from market players with regard to ecological issues. Based on a situation analysis, a company should be able to outline appropriate strategies.

Figure 4.20 summarises external factors representing opportunities and threats for companies as well as internal factors, which represent specific strengths and weaknesses to be considered in a SWOT-analysis. A sound understanding of the business' environment represents increasingly the heart of strategic behaviour. Steger (1998) outlines three tools of how environmental issues can be continuously scanned. The '*Scenario approach*', '*Cross-impact analysis*', and the '*Diffusion curve*'. The methods and techniques of detecting ecological influences at an early stage are extensive.



adopted from Antes (1988)

Figure 4.20 'Environmental' related internal and external issues

Table 4.8 summarises several information- and control tools, which can be very useful for an environmental related decision process. Companies need to have knowledge of internal and external information to be able to react appropriately and on time to changes in the environment.

function technique	sensitization	analysis	search	assessment	control	source material
weak signals	++	+	-	-	++	Ansoff (1976)
ecological accounting	+	++	-	++	++	Müller-Wenk (1978)
ecological impact assessment	-	++	-	++	+	Barbour (1980)
economic feasibility study	-	+	-	++	+	Lange (1978)
technology assessment	-	++	-	++	+	Barbour (1980)
cost-benefit analysis	-	+	-	++	+	Strebel (1980)
benefit-value analysis	-	+	-	++	-	Gorg (1981)
material/energy -balance/-flow	-	++	-	-	++	Ullmann (1976)
ecological damage profile: checklist	+	++	+	-	+	Strebel (1980) Ullmann (1976)
management business game	+	+	++	+	-	Royston (1980)
ecological indicators	+	+	-	++	+	Umweltindikatoren (1977)
value analysis	+	++	+	-	-	Verein deutscher Ingenieure (1981)
ecological database (UMPLIS,AWIDAT,etc)	-	++	-	+	+	Oest / Allers (1980)
creativity / innovation techniques	+	-	++	-	-	Hausmann (1976)
strength / weaknesses analysis	+	++	-	+	-	Koller
portfolio methods	+	++	-	+	+	
market research methods	++	+	-	-	-	
social balance	+	+	-	++	+	Dierkes (1974)
relevance 'tree' method	-	+	+	++	-	Hohn (1983)
simulation (system dynamics)	+	++	-	+	+	Meadows et al (1982)
scenario-writing	++	+	+	-	-	Sachverständigenrat (1981)

adopted with alterations from Senn (1986)

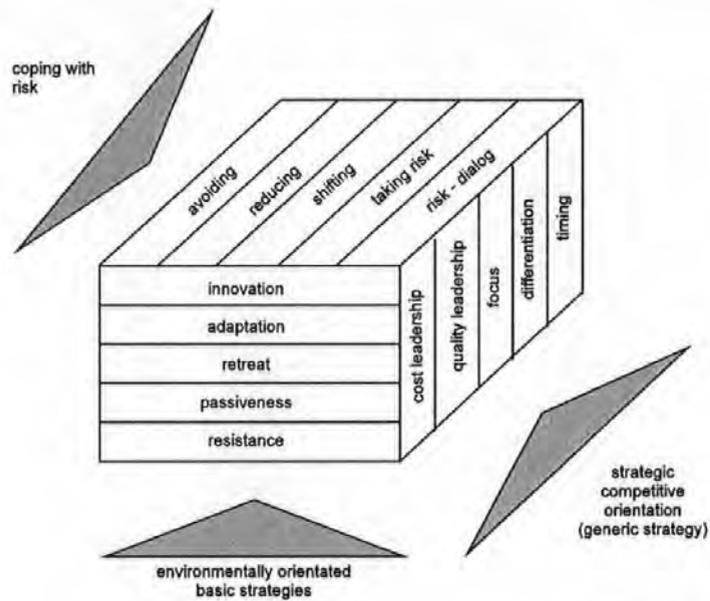
+++> fruitful applicability

++> also applicable in this area

-> unsuitable

**Table 4.8 Potential information techniques**

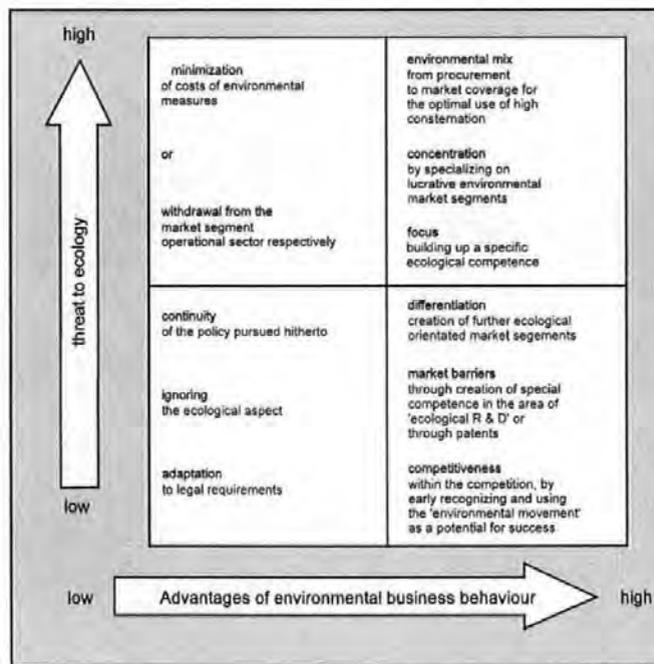
Based on a "current status analysis" the management can outline appropriate strategies. Figure 4.21 outlines a number of different environmentally orientated strategic options. The management has to decide upon basic strategies to be pursued by taking into consideration the competitive orientation as well as the risk involved.



adopted from Meffert et al (1993)

**Figure 4.21 Plethora of strategic decisions on general principles**

Various tools are available to evolve appropriate environmentally orientated strategies. The portfolio method can be seen as a basic tool for the planning process, which supports the analysis and the assessment of products, resources and production processes. Based on this, companies can decide upon a strategic approach (Figure 4.22).



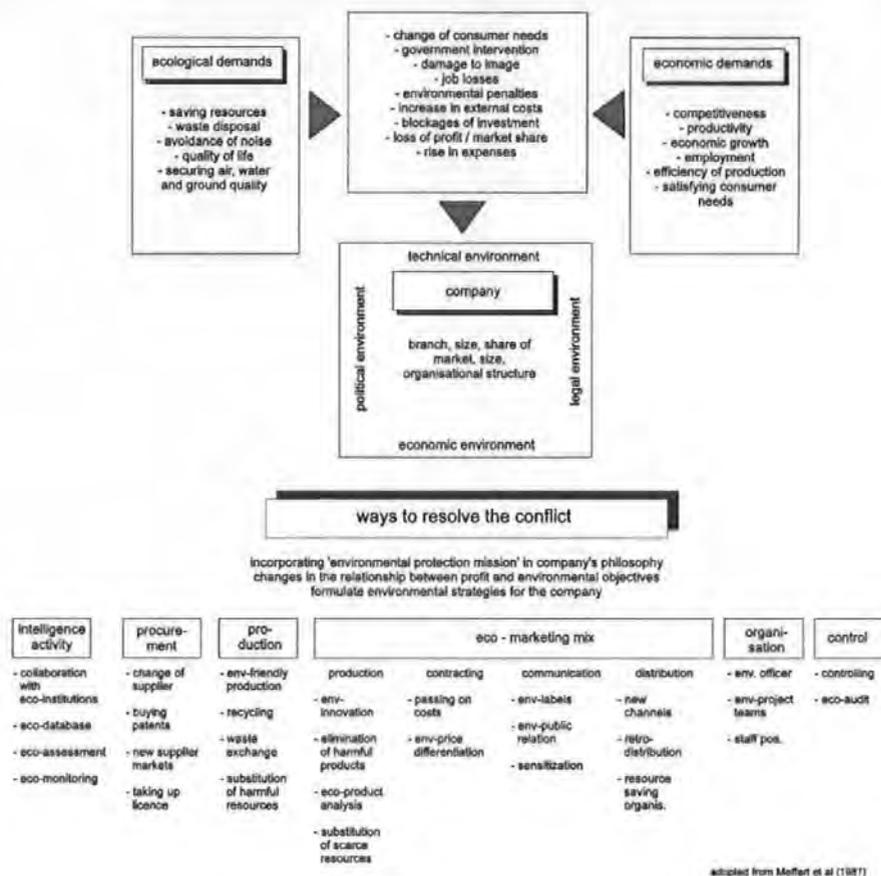
adopted from Antos (1988)

**Figure 4.22 'Environmental Portfolio'**

Furthermore, Schaltegger et al (1995) propose an ecologically orientated portfolio analysis which is similar to the BCG quadrants. The portfolio provides a framework with which a firm may evaluate the impact of environmental actions on the business economic performance both relative to their competitors and over a time period.

With regard to sustainable development Welford (1997) outlines several models how firms can approach sustainable development, e.g. the 'Social, Environmental and Economic Performance and the Sustainable Organisation' cube. He emphasises the need to satisfy all three elements, emphasising that a sustainable organisation should develop in this direction.

After deciding upon a strategy, environmental objectives have to be translated into operational targets and strategies. A company should be aware of ecological related market opportunities and thus be able to anticipate government regulations or actions by competitors. Consequently, the 'ecological issue' has to be integrated into every individual business sector, in order to be successful (Figure 4.23). According to Zahn (1992) an environmentally orientated company is characterised through a complete integration of the ecological aspect in every business function and activity (Fomm 1992, Strunz 1993). Integrative environmental management means to incorporate the environmental issue into the corporate value chain from the start to finish of the supply chain and from the beginning to the end of the product life cycle (Wu et al 1995).



**Figure 4.23 Translation of 'ecological' demands**

A survey carried out on behalf of the Umweltbundesamt (1991) asked for the functional areas of a firm that are highly affected by the ecological trend. The sample consisted of over 590 companies. Table 4.9 summarises the results from which it can be concluded that the production-orientated areas are highly affected areas.

Functional areas	Affected by ecology
Production	83%
Research & Development	67%
Procurement	63%
Strategic planning	57%
Public relation	41%
Marketing	34%
Organisation	19%
Human resources	14%
Controlling	14%
Accounting	5%

**Table 4.9 Functional areas affected by the environmental trend**

The waste management is highly affected by the environmental trend, being responsible for the waste -utilisation, -disposal, -handling, -selling, - use, etc. (Kabelitz 1979, Blohm 1986, Stahlmann 1988, Arnolds et al 1990). Even the financial division is increasingly affected. Several methods and tools have been developed, e.g. the requirement to develop an „eco-balance“, "ecological-balance", "ecological-controlling", etc. (Mueller-Wenk 1986, Stemann 1992). Furthermore, Epstein (1996) stresses the importance of activity based costing in order to minimise environmental costs and increase profitability, by tracing the causes of costs.

For a successful environmental management approach, it is necessary to integrate ecological criteria into the complete management process. The industry has to take over the responsibility for the environmental impacts throughout the whole production process and for the final usage and disposal of the product. As Welford (1995) pointed out it has to be considered that it is not only a question of new production processes, it is further the question of the products.

Hopfenbeck (1992) taking up this argument, states that a „systematic, proactive eco-management must consider the originator of input and the recipient of output, as well as the actual manufacturing process. Firms need to take over product-stewardship. Product stewardship forces firms to share responsibility with its suppliers and consumers (Roome 1994). Frowein et al (1990) supporting the views point out that companies have to consider the company's value chain and, beyond their own value chain, the value chain of its suppliers and distributors. This may even lead, ultimately, into those of its customers.

The role of suppliers changed significantly over the years (see also Chapter 2). Firms aim at looking at the whole supply chain, in a holistic way. The demand

for managing supply chain more effectively increased in the last decade. As the supply chain is cross-functional and integrative it offers great potential for environmental improvements (Wu et al 1995, Green et al 1996, Lamming et al 1996, Hutchinson et al 1997, Wycherley 1999). Purchasing gets also increasingly under pressure facing ethical and social responsibility issues when purchasing components and raw materials. The purchasing department has to take care that preferred suppliers comply to the firm's environmental standards. New et al (1997) also refer to environmental assessments and its importance in the supplier relationship. Supplier audits also increased in importance over the years (Hutchinson et al 1997).

However, modern economic trends in the supply chain business are seen to be contradictory to environmental objectives. For example, just-in-time emerged in the last decade, but is generating additional traffic. Transport is registered as the largest source of environmental problems in the logistic system representing an opportunity for environmental improvement (Crosbie et al 1995, Wu et al 1995, Sachs 1995). Sachs (1995) goes further arguing that the distance between supplier and customer gets bigger and that the 'lean production' trend leads even to 'fat transportation'.

In the context with the environmental movements, reverse logistics increased in importance. Reverse logistics is described as a series of return flow loops, impaired resources and capturing products. It is about the handling and disposition of returned products and materials. Reverse logistics emphasises source reduction and substitution over reuse and recycling (Wu et al 1995, Meyer 1999). Source reduction is seen as the best way of environmental performance, however, reuse and returnable packaging will increase in the future. Meyer (1999) goes even further stating that reverse logistics offer ways of making profit from returned products (see also Andel 1997). He talks about the opportunity to establish centralised return centers with the objective

of collecting and questioning what to do with the returns. Giuntini et al (1995) offer a framework of how to manage reverse logistics. Returned materials should be **recognised**, they have to be **recovered** from the customer and **reviewed** if they should be **renewed, removed or re-engineered**.

The value chain analysis can be seen as being a very important tool. It offers integrated thinking, consideration of downstream and upstream activities, from suppliers to retailers (Porter 1986, Schreiner 1988, Dyllik 1992, Meffert et al 1992). However, it requires slight environmental related modifications (Figure 4.24). Tietze (1991) argues that environmental management needs to be handled from an integral viewpoint (i.e. networking concept) and thus it is necessary to integrate all activities as part of a value circuit. It can be concluded that environmentally orientated management requires a comprehensive way of perception. It can also be called the 'cradle-to-grave-responsibility'. Steger (1996) demands a shift from the 'cradle-to-grave' to the 'cradle-to-cradle' perspective, indicating that it is necessary to close the loop.



suppliers (Crosbie et al 1995, Steger 1996, Welford 1996, Fussler et al 1996). Environmental Option Assessment (EOA) represents a tool with respect to product selection, design and development covering the whole product life cycle (Crosbie et al 1995). Compared to the environmental management systems (ISO14000, EMAS) this approach is more concentrated on auditing the products and processes of a system. It is about a cradle to grave approach (Redclift 1995, Welford 1996).

There are three well-known environmental management systems, the British Standard 7750, the ISO14000 Standard and the European Eco-Audit and Management Scheme (EMAS). All three systems have the requirement to approach the environmental impact in a systematically manner and take the appropriate action to manage those. Despite the fact that ISO14000 and BS7750 show differences, the intention and spirit is identical (Whitelaw 1997). As of January 1999 approx. 8000 firms in Europe had achieved ISO14000 certification.

The introduction of an environmental management system and the certification according to ISO14000 can result in manifold benefits, such as increased corporate image, attract ethical investment, reduce insurance risks, reduce prosecution risks, approach the environmental issue in a more systematic way and thus reduce costs (Welford 1995, Crosbie et al 1995, Fussler et al 1996, Whitelaw 1997, Hutchinson et al 1997, Schlatter 1999). The approach of an environmental management system ensures that a consistent standard is utilised, assigns appropriate responsibilities, asks you to deal with ecological questions and think deeply about impacts. It provides a framework of approaching the issue in a structured and controlled way. The environmental management system according to ISO14000 requires to identify an environmental policy, assess the environmental impact of products and services, define objectives and targets, monitor and control these activities

and requires a certification by a third party. Both standards, ISO14000 and EMAS, are based on the same methodology and terminology. A difference lies in the fact that when using EMAS an organisation gets registered but no certification is required. EMAS is generally applicable to industrial sites (e.g. manufacturing, mining, power and waste disposal). It requires periodic audits, and publication of an environmental statement. A very important philosophy underlying EMAS is the need for publication. Welford (1996) states that especially audits are a very important tool for firms taking a proactive stance.

A negative feature, which can be associated with these systems is, that no targets are set. Thus, firms are free in defining their improvement targets and the significance level. Several authors criticise that environmental management systems are deficient in outlining expected levels of environmental performance. The major target of the environmental management system aims at 'control and reduce its impact on the environment'. One of the prime objectives of ISO14000 is to comply with regulations (Boiral 1998). This view is also supported by Welford (1996), who indicates that the motivation for pursuing an environmental management system is compliance with legislation rather than responsibility for wider global issues. It is generally argued that the standards do not go far enough. Furthermore, it can be pointed out that the audit process is more concentrated on auditing the system rather than environmental performance (e.g. Shayler et al 1994, Welford 1993). Moreover, Boiral (1998) in his discussion states that ISO management systems fail to provide appropriate measures to promote employee commitment, as required by several authors. Employees are limited to implement procedures and support the orientation of the management system. It is more a top-down than bottom-up approach. In his view, it ignores contemporary management trends, the need of employee participation, empowerment, and does not foster employees' intelligence and creativity. It can be argued that the environmental management systems stay in conflict

with a required organisational environment. The ISO management systems are related to approaches which are more of a mechanical nature. A danger of implementing mechanical approaches may result in bureaucratic management practices, which is opposite to what several authors require: a more informal and participative culture towards the progress of sustainable development. Thus, it will be a challenge for firms to balance the introduction of standardised environmental management systems and a management culture, which is not associated to traditional management approaches. But there are also opposing voices from Halme (1997), who points out that an environmental management system can promote a transition to an environmental corporate culture. However, whether the resulting corporate culture will support organic and co-operative issues of an organisation is questionable.

Furthermore, Fussler et al (1996) raise the question, whether these systems encourage environmental innovation. They argue that EMAS has no influence on overall R&D activities, as it is site based. The ISO14000 and BS7750 lack in allowing a great liberty to define the environmental targets, which may result in more fundamental than incremental changes (see also Crosbie et al 1995). It should also be mentioned that the environmental management systems are based on the concept of Total Quality Management (TQM) emphasising 'continuous improvement'. Welford et al (1996) argue that the achievement of sustainability will take very long, based on continuous improvements. However, currently the demand for instant fundamental changes gets louder. Furthermore, the TQM standard has come in for a lot of criticism, which can, in turn, be associated with the environmental management systems. Steger (1998) relates the objectives of the system to the spirit of 'Eco-kaizen', emphasising the continuous improvement process through steady and incremental improvement.

Furthermore, all ISO standards, up to now, do not consider equity and social issues. Welford (1995) already stated that traditional approaches of environmental management systems and environmental auditing will not deliver sustainability. Welford et al (1996) strongly criticise that businesses and ongoing discussions largely ignored at least two out of the three core concepts of sustainable development. This leads to the fact that environmental management systems are unlikely to support the fundamental change needed for sustainable development and thus new approaches are required. At this point it also has to be mentioned, that these arguments do not imply that the existing systems are bad but it has to be kept in mind that they do not go far enough (Callenbach et al 1993, Welford 1996). They suggest that environmental management systems would be more effective within a stricter legislative climate. This would provide firms with the appropriate targets to be achieved.

In recent years, the demand for corporate accountability increased, requiring firms to inform stakeholders about their progress towards environmental development. Environmental reporting has become a key issue (James 1994, Ashford et al 1993, Crosbie et al 1995, Welford 1995, Gray 1996, Hutchinson et al 1997). The literature on reporting standards offer several approaches, e.g. the inventory approach and the sustainable cost approach which are related to the reporting of natural capital depletion and enhancement. The input-output approach is about reporting the resource flow of the organisation. Looking at the reporting standards, it has to be kept in mind that the data generation and collection is, in the majority of cases, a real challenge. A further trend can be recognised; some countries impose legal obligations on firms with regard to accountability and reporting. Moreover, Kolk (1999) refers to an increasing demand to use more quantified, comparable and verifiable information in reports. At the Annual International Congress on Reverse Logistics Management the statement *'if you can't*

*measure something, you can't improve it* was made, which supports the demand for measurement (Parker 1996).

The work of Young et al (1998) on environmental performance measurement stresses the need to monitor 'continuous improvement'. In a previous work he pointed out that measuring environmental performance based on solely financial measures would be impossible (Young 1996). They highlight the importance of performance measurement and make an important contribution to lessons to be learned (see also Epstein 1996, SustainAbility 1996). They examined the Environmental Performance Measurement Frame (EPMF) representing a management tool covering the following measurement areas: **environmental policy** (looking at ideally at objective and targets), **environmental management system** (looking to what extent an EMS is implemented) and **processes, products and services** (looking at the eco-balance analysis). Furthermore, a very interesting feature comes into focus: the benchmarking. Benchmarking allows to compare business units within a firm and firms within an industry with each other (see also Crosbie et al 1995). Moreover, Welford et al (1993) suggest that environmental performance should be combined with other performance issues such as performance figures for shareholders, thus offering a comprehensive picture of performance. In a later discussion among models of sustainable development for business, Welford (1997) emphasises the need to audit and report on its social, environmental and economic performance. Further authors (e.g. Kolk 1999) who require the coverage of the triple bottom line performance also support this. Audits fulfil the demand for increasing transparency and accountability of firms.

As already mentioned, audits lack in covering equity and social issues. SA 8000 was launched in 1997 as a universal standard for social accountability covering matters such as child labour, health, discrimination, etc. (CEP 1998).

Several authors (Welford 1996, Sillanpää 1998) emphasise that environmental accountability is not a sole issue of sustainable development. The importance of social auditing is also emphasised by Sillanpää (1998). She refers to the social auditing process adopted by the Body Shop. The methodology allows transparency and accountability towards social issues. Social audits offer a platform for stakeholder dialogue. Firms should be held accountable for environmental and social impacts, requiring appropriate systems.

Welford and Jones (1996) in their discussion on beyond environmentalism and towards sustainable development refer to the need to extend the scope of auditing. Social auditing recognises the concept of stewardship and accountability and allows to engage with stakeholders. They put forward that dialogue and consultation is at the heart of the measures. In their work, they refer to different levels of auditing, moving towards sustainable development. They outline seven broad elements of sustainability, for which they have identified measures. The elements are: general principles, equity, futurity, biodiversity and animal protection, human rights, local action and scale, and life cycle impacts.

It can be summarised that the majority of literature on environmental management approaches is mainly based on how businesses can incorporate the ecological aspect into business activities. All these discussions concerning the issue of environmental management are definitely interesting, necessary and useful to business approaching environmental improvements. However, it has to be emphasised that with regard to the debate on sustainable development they do not have the greatest contribution to achieving sustainable development but rather only environmental improvements. One of the very important works on approaching the road of sustainable development include the discussions of Welford, Roome, Jones, etc.. Barrow (1999) in his

work emphasises that any strategies concerning sustainable development should be realistic workable.

#### **4.2.3 Sustainable development debate**

In the last 5 years, the discussion among environmental management approaches towards sustainable development has intensified. The upcoming discussions are becoming more and more critical and opposing.

Most literature in the area of environmental issue or sustainable development is rather focused on environmental protection, safeguarding our environmental situation than on equity and social matters. Several authors emphasise the necessity to incorporate the overall vision of sustainable development into practice. It is generally agreed, that ecological sustainability is of utmost importance, but it will not be achievable under conditions of e.g. increasing poverty, human rights abuse, inequity, thus covering also social, human and economic issues. Sustainable development is more about assuring eco- and socio-system sustainability. Among the literature, opposing voices exist, which have come to different conclusions. (e.g. Gladwin et al 1995, Gray 1996, Welford 1997, etc.). On the one hand, sustainable development is seen as an unworkable compromise, or a basis for innovative responses concentrated on the achievement of sustainability, and on the other hand requiring fundamental change of behaviour in a more spiritual sense. Murphy et al (1997) also discuss the diverse academic approaches, referring to Beckerman (1995) who regards sustainable development as a basically flawed concept. Reid (1995), on the other hand, asks for support to social equity, human worth and ecological health.

However, it can generally be agreed upon, that sustainable development is about ecological, social, economic and political issues, which have to be approached in an integrated manner, thus requiring a holistic approach. The achievement of equity and social issues is regarded as critical to the achievement of ecological issues and thus has a major influence on the progress of sustainable development. Fussler et al (1996) refer to an important statement by the director of the Colombian Business Council for Sustainable Development, who argues that many people believe that social and environmental investments can not be afforded by developing countries as long as they do not improve on their problem of poverty.

In contrast to the view that the environmental challenge represents a business issue, some authors, argue that the green movement, sometimes called 'green management', 'eco-modernism', 'eco-centrism' etc., is created by and for business, who are effectively 'hijacking environmentalism' as stated by Welford (1997). Eco-centrism is about maintaining the diversity and harmony of non-living, and living things. Without a radical reformation, the natural world is on a collision course.

Gladwin et al (1995) in their writing look at the paradigms of conventional technocentrism and the alternative ecocentrism, arguing that both views do not ensure sustainable development. Despite criticism of technocentrists (e.g. Taylor 1994) and ecocentrists (e.g. Sachs 1995), they suggest that the sustaincentric view is fulfilling the requirements of sustainable development best. This approach requires a cognitive transformation, profound value change toward stewardship, equity, humility, permanence, precaution and sufficiency. One of the biggest challenges and risks (if not achieved in time) will be the necessary transformation of business behaviour and management theory and practice so that it contributes significantly to sustainable development (e.g. Welford 1997, Gladwin et al 1995).

Many socialist authors previously claimed that capitalism would eventually lead to disaster. Korten (1995) put forward that in the absence of a collapse of capitalism we will have to be satisfied with incremental changes down the road of sustainable development. Welford (1995) states that rigid systems of market-driven and profit-centred capitalism and output orientated state planning are the major source of environmental degradation. On the other hand, Fussler et al (1996) conclude that sustainable development has no bias towards free markets or private enterprises.

However, there are also opposing voices, stating that the environment is not too bad and that green supporters are pessimists, who rate nature over jobs (Beckermann 1995, Krakauer 1991, Rowell, etc.). Furthermore, they argue that one should rather concentrate on social issues. Barrow (1999) points out that the literature is studded with cliché and wishful thinking about paradigm shift to sustainable society and the demand for eco-ethics. However, he argues that little of this is of practical value for the near future.

Welford et al (1996) looking specifically at the increasing trend of strategic approaches of environmental management stress that the emphasis upon those discussions (e.g. environmental management systems) is greater than they deserve. They strongly advocate the necessity for a new ideology, before existing approaches and views become an accepted ideology. They further outline the need for compulsory environmental audits, public disclosure of environmental information, and public reporting, next to tougher legislation, if change can not happen through businesses themselves. Crosbie et al (1995) also refer to the fact, that there is a possibility that the environmental approach is confused with a self-promotional element of environment as a profile raiser. However, he also emphasises the other examples to be found, total honesty, challenge to improvement and the willingness to support others in making changes.

Welford (1997) in his work on 'hijacking environmentalism' follows a very opposing voice. He argues that e.g. the necessary radical and creative thinking is not on the agenda of 'eco-modernism'. He emphasises that one should accept the limitations in eco-modernism and move towards more radical alternatives. The approach of technocrats reaching continuously for more growth can be seen as a major obstacle and reason for our situation. As the industry and their powerful organisations are afraid of a financial fallback or ruin, their ambition towards sustainability is seen as a 'corporate lie'. He blames the industry to place the environmental issue in a more liberal-productivist frame and thus has hijacked the environmental debate.

Among several authors, it is generally agreed that businesses are the centre of the problem and the solution. They are able to influence individuals, supply chains, industries in a positive way. However, a radical change of behaviour is necessary. Welford argues that the environmental management approaches are too rational. In the first place, they approach technical fix solutions, rather than looking deeper into the underlying tension of the problem. He emphasises more strongly the ideology, cultural and value related scope, referring to the spiritualistic sense. Moreover, he blames that businesses base their approach more on a positivistic paradigm rather than on a critical one. Moreover, it is argued that the language of 'business-as-usual' still drives environmental management views. Businesses are blamed to focus on environmental management systems aiming at converting inputs into outputs at the lowest waste rate, etc. whilst aiming at objectives such as increasing profits, expanding markets, and reducing costs. Referring to a statement made by Fineman (1994), the environment is frequently seen as just one of many businesses factors to be handled with. Welford (1997) demands businesses and researchers to recognise and appreciate the spiritual dimension of ecology, going beyond scientific measurements, leaving the road of eco-modernism behind us.

Some authors deal with concepts how firms can contribute to sustainable development. The work of Welford et al (1996) makes an important contribution to the discussion on how firms can support the progress toward sustainable development. Among the upcoming discussion the work of Welford (1997) and Roome (1998) is very interesting. It sets out what they feel are the requirements of a fundamental change of how we behave and how industries are organised.

The work of Roome (1998) discusses the meaning of sustainability and its implications for industry. He emphasises that the sustainability challenge is different from environmental management. The book is very readable and sets out what he feels how industrial thinking will need to change in order to make a substantive contribution to sustainable development. Managers of industrial organisations need to break the conceptual frame (e.g. the thinking about the role and operation of industrial organisations in society) within which they operate and develop new frames that relate businesses closely to sustainable development.

Welford (1997) in his work outlines six models of sustainable organisations, calling for an ecological and spiritual awakening and radical change. However, he emphasises that the models do not outline definitive strategies but rather illustrate complex issues to be handled. Sustainable development represents a complex and very complicated issue, thus one can only develop pictures and descriptions of the road, businesses should approach towards sustainable development. The models should provide ideas and approaches upon which a business may choose. They are concentrated more on the process rather than on the outcome. However, by utilising these ideas, it offers support while moving down the road to sustainability.

The models can be summarised into:-

- **environment, equity and futurity**

The importance of equity (on the business level, it is about empowerment or following a pluralist culture) is emphasised. The key elements of equity and futurity are missing in several discussions among sustainable development, especially within the business area. However, it has to be admitted that without achieving equity, it will be difficult to improve the environment and thus achieve sustainable development.

- **the social, environmental and economic approach**

Firms achieving environmental and social objectives are potentially sustainable. Achieving all three elements provides the best fit to being a sustainable organisation. Firms should achieve a high level of social, environmental and economic performance.

- **the 3 Ps**

The model is concentrated on the examination of the impact on people, planet and product. By using appropriate tools of analysis (life-cycle assessment, stakeholder assessment, EMS, etc.) it will allow to gain a comprehensive picture of the firm's impacts on its environment.

- **the sustainable development values pentagon**

This model has been adopted from Gladwin et al (1995) and has been expanded by further elements. It provides a more general definition and nature of sustainable development.

- **the 6 Es**

Business should have a clear agenda for change with respect to environment, empowerment, economics, ethics, equity and education. The overall policy should cover all of these elements. It provides a comprehensive framework of which business should think about and define statements, objectives and strategies and report upon them.

- **Measures of sustainability**

Seven elements have been outlined, which are used to identify detailed measures. The discussion in the literature review has shown, that measurement of sustainable development performance is increasing in interest.

Further models exist in the literature, which are concerned with the integration of economic, social and environmental sustainability. Just to mention two of them, the 'SusTainAbility Radar' approach by Hockerts (1999) and the 'Sustainability Cycle' by James (1997). A further approach on how firms can act is outlined by Shrivastava et al (1995). Firms which approach sustainable development need to engage in 'total environmental management' and 'sustainable organisational design'. Next to the systems thinking of total environmental management, organisational design aims to shift all aspects of the organisation to a fundamentally different view.

In summarising this topic, it can be concluded that they are researchers who require more than superficial alterations to how we live. Others adopt a long term view requiring an end to current trading and commercial life. Some authors demand a continuous environmental improvement, others emphasise the need for a revolutionary shift in paradigms. Several authors associate sustainable development as an attractive opportunity. Schmidheiny (1992) even states that it is 'nothing more than a simple combination of growth and environmental protection'. Welford (1997) in opposing the eco-modernism theories argues that these views deny the existence of a spiritual dimension, being the heart of deep green politics. Eco-modernism views are seen to be too positive and rational and businesses are hijacking the environmental agenda.

Steger et al (1998) in his work state that in dealing with the question of 'sustaining the corporation' the discussions run into a ideological debate,

which they regard as „*purely polemical in its rhetoric*“. Crosbie et al (1995) point out that there are two ways, of how to approach sustainable development, either through corporate citizenship or by approaching a strategic opportunity, or even through a combination of both. Treating the environmental issue as an opportunity rather than a threat will lead to the fact that the firm may be most profitable and most sustainable, by combining the commercial and environmental issue. This conclusion is further supported by Stead et al (1996), who emphasises that a vision for sustainability would aim at enhancing long-term profitability as well as the protection of the ecosystem. However, they strongly advocate that sustainable development strategies are merely not developed to generate profit. There are also several authors, which argue that the concept of sustainable development indicates a trade-off between continuous economic growth and sustainability. A further discussion emerges arguing that the environmental issue leads to green entrepreneurial opportunities. However, Welford argues that sustainable development is often associated to economic efficiency, applying technical solutions, rather than applying a real commitment towards radical change and sustainable development.

## 5 Research Aims and Methodology

### 5.1 *Research aims*

The increasing environmental awareness and commitment can be outlined by looking at the wide range of literature and the growing number of management techniques that emerged such as, environmental reporting, eco-labelling, life-cycle analysis, environment management standards, etc. Over the years, the literature on environmental management covered several areas. It looked at the drivers, the competitive issue, approaches, tools, etc.. In recent years the demand for approaching sustainable development comprehensively increased.

Moreover, most publications on environmental business focus on specific industrial issues. They have been dedicated to functional spheres such as environmentally orientated production, marketing, controlling, etc. (Reisterer 1977, Müller-Wenk 1978, Raffée 1979, Schreiber 1985, Meffert et al 1986, Burghold 1988, Schreiner 1988, Stahlmann 1988, Arnolds et al 1990, Stemann 1992). Initial discussions as regards ecology could be found up to the middle of 1980s. During the 1980s discussions intensified and became more comprehensive. It can be stated that the handbook for environmental protection by Vogel et al (1977) laid the foundation for other publications. Müller-Wenk (1978) seems to be the first author who concentrated his discussions on a specific functional area, e.g. the ecological balance sheet.

The strategic component of ecological issues increased. The work of Strebel (1980) considered the ecological subject more comprehensively. Furthermore, the work of Winter (1987) should be stressed as a comprehensive action guideline for companies.

It is generally accepted that the objective of strategic management is to build and maintain competitive advantage by taking advantage of the company's capabilities (Porter 1980, Ohmae 1982, Mintzberg 1987, Henderson 1989,

Pümpin 1993, Thompson 1993). The objective of strategic management is the formulation and implementation of strategies leading to the long-term achievement of the firms' vision. On the one hand, companies have to continuously monitor its environment in order to analyse opportunities and threats. Moreover, on the other hand they have to analyse and assess their ability, capability and competence in order to be able to respond appropriately and quickly to changes in their business environment. As already argued by Porter (1985) the success of a company is critically depending upon the ability to identify and effectively respond to changing market circumstances. It can be argued that the traditional strategic management process can be utilised for approaching the ecological issue. During the last years, the demand for systematically approaching the ecological issue emerged. The need for environmental management systems and the firm's accountability entered the literature.

The further upcoming issue of 'social responsibility' demands firms to behave more in an ethical manner. The ecological issue is increasingly associated with the firms' social responsibility. Firms need to behave ecologically sound. Moreover, several authors ask firms to fundamentally change values, ideologies, behaviours, and ways how things are done especially concerning the demand for 'sustainable development' (Welford 1995, Roome 1998, Hart et al 1999). In the last few years, the discussion among environment not being the sole concern of sustainable development emerged, stressing the need to concentrate on all core components of sustainable development (Gladwin et al 1995, Welford 1997, Roome 1998). The increasing more 'conflicting' and 'controversial' debate, surrounded by topics like, businesses 'hijacking' the environmental agenda, demanding fundamental changes of values, businesses and consumption are of great interest. It is argued that new modes of social organisations and market structures are necessary in order to enhance the overall quality of life (Welford 1998). An increasing

discussion about the status and future of business research on environment and sustainable development is emerging. Several authors argue that the path towards sustainable development is more than eco-efficiency, technical solutions, and environmental management systems. It is more about equity, justice, empowerment, ethics and social matters. Based on this, Welford asks not to equate sustainable development solely with environmental management approaches. Moreover, sustainable development should be approached in a systemic and interdisciplinary way.

However, this research concentrates in the first line on the business response to ecological matters. The ecological issue should be seen as a long-term challenge. There is evidence that there is and will be a continuous change in awareness from the consumer side as well as from various stakeholder groups which have an influence on the company's behaviour. Several authors argue that decisions upon environmental protection have a large degree of innovative characteristics, requiring open channels towards downstream and upstream activities (i.e. Servatius 1992, Wiles 1994, Crosbie et al 1995, Gege 1997, Lehr et al 1999, Zundel 1999). The literature emphasise the importance for companies to be innovative which requires e.g. investments in R&D in order to maintain flexibility in the market and allows to initiate changes. It can be suggested that a proactive and innovative strategic policy can be seen as a supportive approach to cope with the ecological challenge. Those firms, which are innovative and meet this challenge through their own choice, will be able to induce fundamental changes needed towards environmental performance. It is necessary for firms to move beyond the negative and constraining attitude to environmentally orientated management. Firms need to seek positive, enabling opportunities which combine profitability with ecological and social development. This will enable firms to meet the triple-bottom-line.

*"The task of a manager in the 90s is: to infer from the day after tomorrow to tomorrow and already introducing the changes today" (Simmam et al 1989)*

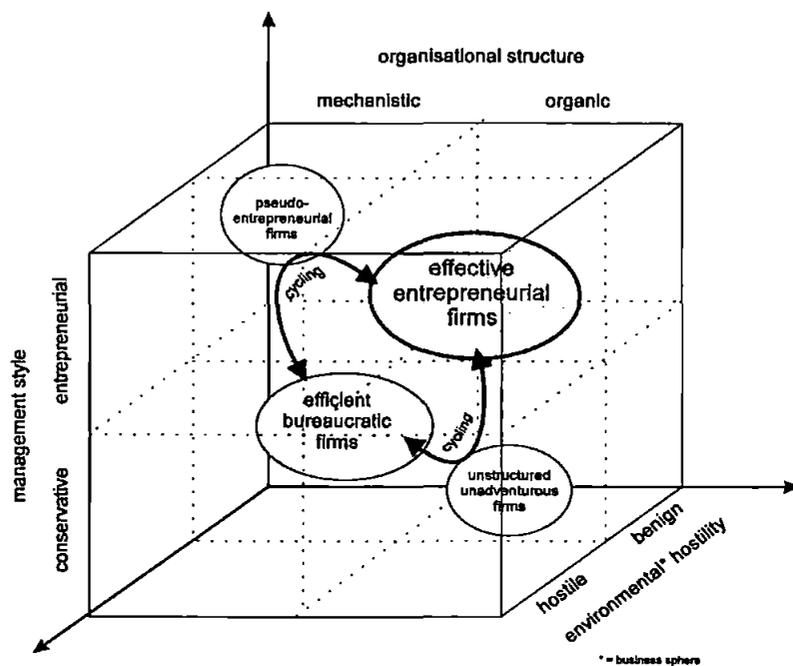
It can be stated that the companies' response to ecological issues may be influenced by the way in which they respond to other challenges or changes in the surrounding business environment. Companies, which are consistently anticipating changes and responding positively to these changes in order to ensure their survival and competitive advantage, are more likely to pursue a proactive and innovative ecological approach. Companies, which wait until their competitors have adapted first, or those who do only the minimum necessary to keep up with the legal requirements, may find themselves at a disadvantage.

The need for being proactive and innovative oriented towards the ecological issue can be related to the emerging requirement of 'Entrepreneurship'. Entrepreneurship and innovation has been of increasing importance to the business society. Drucker (1985) refers to a Latin poet who called the human being "rerum novarum cupidus" which means "curious to new things". He states that entrepreneurial management should make firms "rerum novarum cupidus". "Entrepreneurship" is seen as an emerging practice involving the application of entrepreneurial creativity and flexibility to established businesses. This is seen as a necessary characteristic in order to survive or even grow in a constantly changing and complex environment (Kast and Rosenzweig 1974, Mintzberg 1987, Stevenson 1990, Ideburg 1993). In this context, companies are urged to become leaner, more flexible and less bureaucratic, providing an appropriate and supportive entrepreneurial framework. Interestingly, the importance of organisational and cultural issues with regard to the ecological orientation also emerged over the years (Meima et al 1997, Dodge 1997, Emerson et al 1997, etc.).

In the age of complex and rapidly changing environments firms need to approach their strategic orientation differently. Firms need to be more innovative, proactive and risk-taking. It can be argued that firms need to adopt

a more entrepreneurial style in order to grasp the upcoming challenges. The questions that may be asked are: *Which environmental behaviour does the nature and style of management and vice versa especially support? Which ecological approach can be best applied depending on the corporate culture? Do the internal resources and potentials of a company are appropriate to grasp the ecological challenge?*

It can be argued that different corporate styles and organisational structures express different moral concepts and thus determine different capabilities to pursue a defensive or proactive ecological approach. A framework outlined by Covin et al (1990) provides an approach to companies' organisational and strategic style and nature of response to business environments (Figure 5.1).



**Figure 5.1 Organicity and Entrepreneurship**

This framework will be used to analyse whether firms' nature and style of strategic response to the business environment has an influence on the ecological strategic response. Hence, the following working hypothesis can be formulated:

***“The ecological issue represents an emerging phenomenon in the constantly changing business environment. Hence, entrepreneurial firms supported by organic structures approach the ecological issue in a proactive manner and thus contribute to the preservation of ecology.”***

The subsequent research aim is to reach an understanding, if pursuing a specific style and nature of strategic management response has an influence on a company's environmentally orientated strategic approach. As there is a strong link between the organisational structure and its ability to learn, grow and take advantage of opportunities it should be analysed whether a positive correlation between the management style, organisational structure and ecological approach exists.

#### **First phase**

As companies should maintain an equilibrium between organisational structure and the type of management style, the evaluation of the framework proposed by Covin et al (1990) should be empirically analysed in view of the ecological orientation.

1) For this phase the following sub-hypothesis can be formulated:

***“Companies facing a hostile business environment adopt an entrepreneurial management style”.***

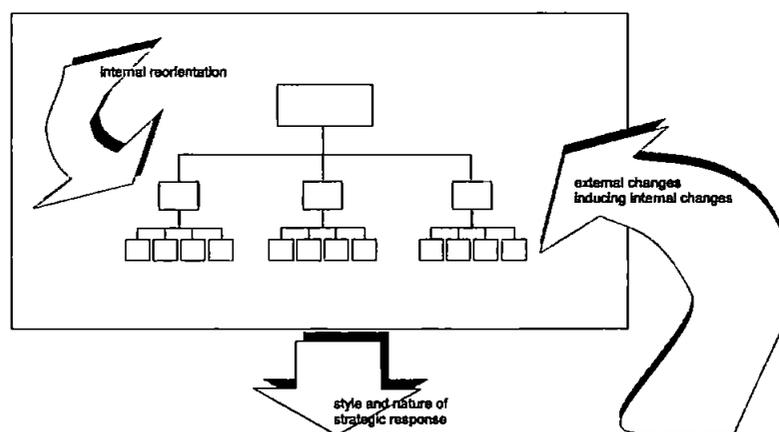
The subsequent research aim is to: -

- *Examine if companies face a hostile or rather a benign business environment.*
- *Evaluate the nature and style of companies' general strategic response. Companies should be assessed according to their management style.*

- *Examine if a specific management style correlates with the degree of business environmental hostility.*

It should be identified whether a companies' business environment has an influence on the management style pursued by companies.

2) Additionally, companies may also need to reorientate their organisational structure in order to support the nature and style of management to cope with a more challenging business environment (Figure 5.2).



**Figure 5.2 External changes inducing internal changes**

The subsequent sub-hypotheses can be formulated:

***“Companies having organic structures are better prepared to recognise and satisfy the need for flexibility and thus will be more positively correlated to an entrepreneurial management style.”***

***“Companies facing a hostile environment have organic structures.”***

The subsequent research aim is to: -

- *Evaluate the degree to which companies possess an organic or rather a mechanistic organisational structure.*
- *Examine if an entrepreneurial management style correlates positively with an organic organisational structure and vice versa.*

- *Examine if companies' organisational structure correlates positively with the degree of business environmental hostility. Determine whether companies' organisational structure is appropriate to anticipate to the conditions of their business environment.*

In order to pursue an effective entrepreneurial strategy, it is necessary that an entrepreneurial management style is supported by an organic organisational structure. It should be identified whether companies which pursue a specific management style (entrepreneurial vs. conservative) ensure that they have the supportive organisational environment (organic vs. mechanistic). It should be examined if the entrepreneurial management style correlates positively with the organic organisational structure.

3) Furthermore, the ecological approach should be analysed. During the 1990s ecological concern increased in ethical value and importance. Companies are becoming increasingly sensitive toward ecological aspects.

The subsequent sub-hypotheses can be formulated:

***“Companies facing a hostile ecological environment pursue a proactive ecological approach”***

***“A proactive ecological approach is positively correlated to an entrepreneurial management style”***

The subsequent research aim is to: -

- *Evaluate the degree to which companies are faced with the ecological issue.*
- *Evaluate the degree to which companies pursue a proactive environmentally orientated approach.*

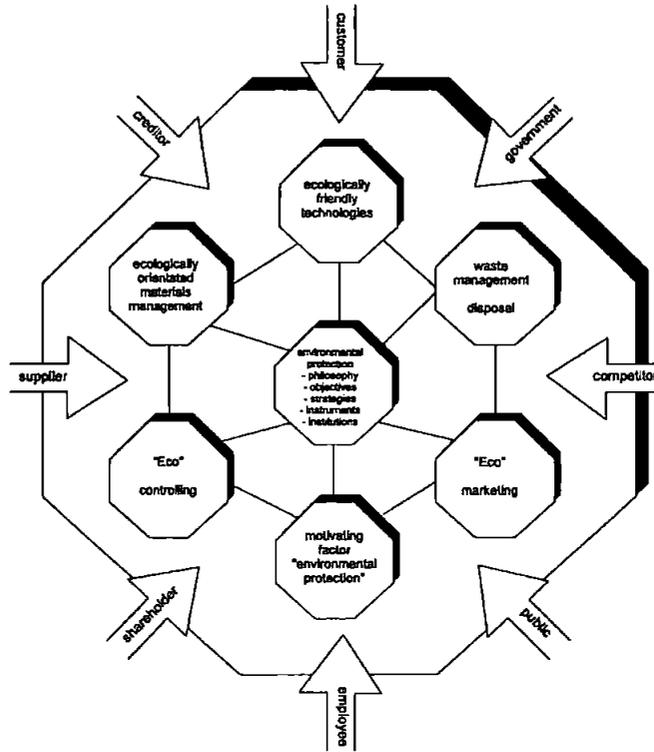
- *Examine if the proactive ecological approach correlates with the ecological hostility.*
- *Examine if an entrepreneurial management style correlates positively with a proactive environmentally orientated approach*

Having identified companies' strategic response to the ecological issue it should be examined which management style may be seen as supportive in order to face the ecological challenge more effectively. It should be of particular interest to analyse if companies' response to ecological issues may be influenced by their general strategic response.

### **Second phase**

This phase of the research examines the degree to which the 'ecological issue' is integrated into the company's strategic approach. An integrated and comprehensive approach is seen as an essential prerequisite for the success of a proactive environmentally orientated management approach (Figure 5.3).

The objective of the second phase is to get an insight into the firms' environmental approach, identify relevant topics, and show any relationships, if existing. For this phase a case study approach will be adopted. Furthermore, the case study results should strengthen the results of the first phase.



adopted from Zahn et al (1992)

Figure 5.3 'Environmental management' seen as a networking concept

The subsequent sub-hypotheses can be formulated as follows:

***„Companies pursuing a proactive ecological approach consider ecological factors in all areas of strategic behaviour and thus can be considered ecologically sound.“***

***„The proactive ecological approach can be related to an entrepreneurial management style supported by an organic organisational structure.“***

The research aim for the second phase is to: -

- *Evaluate to which degree ecological issues are integrated into their strategic planning and subsequently the effectiveness of the environmental management process.*
- *Assess the nature and style of management and the organisation and if this can be related to the ecological approach.*

It should be identified whether a proactive ecological approach correlates positively with the depth of strategic integration of ecological issues. Furthermore, it should be reviewed if the nature and style of strategic response can be related to the ecological stance.

## 5.2 Methodology

### Research method

A major step in the research design is to determine which research method will be used to test the hypotheses. For the first phase, it was decided to use quantitative research methods. Bennett et al (1988) argue that quantitative methods have to be based on a statistical valid sample of the target group. Hence, the results should reflect the behaviour of an entire population, accepting a small margin of error.

Furthermore, if necessary, qualitative research methods can be employed. For the second phase a qualitative research method had been selected. Qualitative research methods might be necessary in order to gain insight into possible motivations for specific responses. Qualitative research is mainly used to explain results obtained from quantitative research (Malhotra 1993). A qualitative research method is usually exploratory in nature, which covers a smaller sample and is not usually used on any probabilistic basis (Nelson 1972). According to Malhotra (1993) qualitative research is *„an unstructured exploratory research methodology based on small samples intended to provide insight and understanding of the problem setting“* and mainly used to explain results obtained from quantitative research. He defines case studies as a *„comprehensive description and analysis of a situation, which relates to the marketing research problem. This usually involves an in-depth investigation based on a small number of cases involving people, organisations, or situations. Studying a small number of cases can help clarify the nature of the problem, identify relevant variables, and show relationships between variables“*. Eisenhardt (1989) suggests to use four to ten cases for a case study research project. Hence, there are gradations between these two types of research. Even in large-scale statistical surveys, respondents may be asked to comment or explain their responses and thus may also be handled qualitatively.

## **Data collection**

Kurtz et al (1984) offer three alternatives for the collection of primary data: observation, controlled experiments or survey method. The observational method relies on data, which is obtained by watching people's behaviour. The experimental method tries to analyse the relationship between two or more variables. However, the great advantage of using survey research is its versatility. It provides the responses more quickly and at lower costs (Kotler 1986). Malhotra (1993) defines surveys as *„a structured questionnaire given to a sample of a population and designed to elicit specific information from respondents“*.

Using surveys as quantitative research method requires standardised mail questionnaires. A standardised mail questionnaire provides responses, which can be coded, analysed, tabulated and interpreted (Malhotra 1993). It can be argued that possible responses are than less biased, i.e. are not open for interpretation. Alternatively, interviewers conducting an interview may leave questions open for possible bias. Thus, mail questionnaires will be employed to collect data. A mail questionnaire allows to collect a large amount of information. Mail questionnaires usually have lower response rates, typically less than 15%. Hence, several aspects should be considered when conducting a mail questionnaire in order to increase the response rate (Nelson 1972, Kotler 1986, Benett et al 1988, Malhotra 1993):-

- Letter accompanying the questionnaire should have an appearance of a personal communication (i.e. addressed to specific individuals).
- A stamped reply envelope should be enclosed.
- References should be mentioned.
- Anonymity should be assured.
- Prior notification.
- Follow-up mailings addressed to non-respondents stressing the importance of their co-operation.

- Advance notice to announce the survey
- Several pre-tests of the questionnaire will help to avoid misleading questions and ensure that researcher's instructions are clear. Pre-tests are best done by personal interviews.
- Providing incentives, premiums or rewards.
- The shorter and smaller the questionnaire, the higher the percent of return. The questionnaire should not be longer than six or eight pages, time-consuming and complicated.

However, some shortcomings of mail surveys should be mentioned:-

- Usable mailing lists are sometimes unavailable.
- Responds are sometimes unable to answer the questionnaire or are unwilling to provide any information.
- Structured questions may result in loss of validity.
- Nonresponse bias

Several sources of errors can occur within research design. They range from researcher errors, interviewer-, respondent- and nonresponse errors. A further motivation to increase the response rate is to reduce the nonresponse bias. Non-responses will lead to the fact that the resulting sample is different in size or composition from the original sample. Malhotra (1993) states that the nonresponse error is defined as the variation between the mean value of the original and the resulting sample. It can be argued that depending on the subject the non-respondents may differ from the respondents in their answers. Thus, it should be aimed to reduce the nonresponse rate. Malhotra (1993) already indicated that *„the magnitude of nonresponse bias increases as the response rate decreases“*. However, it is also argued that the response rate may not be an adequate indicator for nonresponse bias, as long as the nonrespondents are not different from the respondents.

A careful design of the questionnaire may help to minimise non-responses. The format of the questions may have an influence on the response. The literature distinguishes between closed-end and open-end questions. Open-end questions allow the respondents to answer the questions in his/her own words. On contrast, closed-end questions include all possible answers, i.e. multiple choice. They allow clear responses which then can be interpreted and tabulated. It is argued that difficult and personal questions should be asked towards the end of the questionnaire, whereas the introductory questions should increase the interest of the respondents (Benett et al 1988).

The data collected will then be coded for further computer analysis. Statistical programs like SPSS (Statistical Package for the Social Science) or SAS will be used to analyse the responses in order to be able to test the hypotheses. The researcher will make use of several statistical procedures and techniques.

### **Sampling method**

The decision upon the composition of the sample involves identifying potential participants upon which conclusions will be based. Malhotra (1993) defines a sample as *„a subgroup of the elements of the population selected for participation in the study“*. The sample surveyed should reflect the entire population (Benett et al 1988, Kotler 1986).

Kotler (1986) called for three decisions to be made as regards the sampling plan: Who is to be surveyed? How many people should be surveyed? How should the respondents be selected? The sample can be restricted to a single community within a nation. Furthermore, it can be national or even cross-national. The sample for testing the hypotheses mentioned above will be a non-probability sample, i.e. the researcher determines the participants of the sample with the aim to be representative of the whole population. It has been decided that the study focuses on German industries. It is aimed that sub-

groups of the sample representing different industries are similar in size. The responses should then be reasonably generalisable across all industries because of the diverse types of businesses represented in the sample.

Germany has been chosen for providing a sample for this study because it is widely acknowledged that the environmental awareness among German consumers increased dramatically. It can be argued that Germany is heading within Europe with a plethora of legal requirements and an extremely strong environmental lobby (Caincross 1992). In several studies (EC-Commission 1991, G + I Forschungsgemeinschaft 1985) it was identified that consumer behaviour in Germany has become much more environmentally friendly compared to other countries.

Issues indicating this trend in Germany:-

- Continuous intensification of legal requirements for environmental protection by the Federal Environment Agency
- Increased sensitivity of the public towards environmental issues on the grounds of accumulated environmental scandal and catastrophes
- Increased consumer interest in environmentally friendly products and process quality, which meet environmental standards

Furthermore, as the researcher's nationality is German, interviewer-induced errors due to language problems can be avoided.

### **Sample frame**

Possible participants of the survey will be derived from the following sources:-

- Chamber of commerce
- Encyclopaedia of associations
- As the researcher works for a multi-national company, there are personal contacts to the market research department

- Company literature: „Hoppenstedt“ and „Who is who“
- Visits to trade fairs
- Catalogues provided at trade fairs

For the mail survey it is attempted to have a sample frame of at least 500 participating companies.

In the second phase, eight firms in the food & allied industry and two consulting institutions will be interviewed. Based on this information a case study will be developed. The researcher aims to choose firms, which participated in the first phase.

### **5.2.1 Questionnaire - Managing in a changing world**

The primary aim of this research phase is firstly, to analyse the firms' nature and style of strategic response. Secondly, the aim is to determine to which degree firms pursue a proactive ecological approach and if this can be related to the firms' general strategic response. Measurement scales from previous researches carried out by Covin et al (1989), Khandwalla (1976) and Miller et al (1983) are used to develop the items for measuring the management style, organisation structure and the hostility of the firms' business environment. In questions 8 to 12a, a 5-point type scale ranging from strongly disagree (value 1) to strongly agree (value 5) is used to assess the degree to which the statements apply for the firms.

#### **Questions 1 to 7 - Profile questions**

The profile section gathers information on the industry the respondents belong to, the size of the firms in terms of number of employees, their primary customer segment, the generic strategic position they hold and the markets they are operating in. Furthermore, questions concerning the firms'

performance in the last 3 years and their expectations for the next 3 years are asked. In order to get a more or less comparable view, the firms should answer the questions on performance in relation to the revenue, however, settled by additional buying.

#### **Question 8 - Organisation structure**

Respondents are asked to indicate to which extent the statements regarding organisation structure apply to their firms. The question covered items such as communication, information flow and decision-making process (Table 5.1). The ten-item scale is used to measure if firms have a more organic or mechanistic structure. The respondents' ratings on these items are then averaged to arrive at a single 'organisational structure' index. In order to test the hypotheses the firms are classified into two groups. The mean value of the indices is used as the threshold to classify whether firms have organic or mechanistic structures.

#### **Question 9 - Management style**

It covers items such as attitude towards risk, degree of proactiveness, and innovation (Table 5.1). A seven-item scale is used to measure if firms are more entrepreneurial or conservative. The respondents' ratings are averaged to arrive at a single 'management style' index. In order to test the hypotheses the firms are classified into two groups. The mean value of the indices is used as the threshold to classify whether firms are entrepreneurial or conservative.

#### **Question 10 - Business environment**

The aim is to gather information on the firms' business environment (Table 5.1). The eight-item scale is used to measure if the firms' environment is hostile or benign. The respondents' ratings are averaged to arrive at a single 'business environmental hostility' index. In order to test the hypotheses the

firms are classified into two groups. The mean value of the indices is used as the threshold to classify whether firms face a hostile or benign environment.

#### **Question 11 - Ecological environment**

The question looks at the firms' ecological environment (Table 5.1). The six-item scale is used to assess the ecological impact on firms. The respondents' ratings are averaged to arrive at a single 'ecological environment' index. In order to test the hypotheses the firms are classified into two groups. The mean value of the indices is used as the threshold to classify whether firms face a hostile or benign ecological environment.

#### **Question 12 a) Ecological orientation**

The aim is to gather information on the firms' strategic orientation regarding the ecological issue (Table 5.1). The eleven-item scale is used to measure the degree to which firms are proactively oriented. The respondents' ratings are averaged to arrive at a single 'ecological orientation' index. In order to test the hypotheses the firms are classified into two groups. The mean value of the indices is used as the threshold to classify whether firms are more proactively or reactively orientated.

#### **Question 12 b) Ecological reaction**

The respondents are asked to indicate on a scale, ranging from 'today', 'concretely planned' and 'not planned', to which extent the firms are currently performing ecological activities. The statements are identical to those used for question 12a).

<b>Organisation Structure</b>	<b>Management Style</b>
<ul style="list-style-type: none"> <li>• There are few hierarchical layers in the firm</li> <li>• The organisational structure includes project teams, matrix structures or special task forces</li> <li>• Decision-making powers are decentralised</li> <li>• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures</li> <li>• There are vertically and horizontally open channels of communication</li> <li>• Financial and operating information is shared and flow quite freely throughout the firm</li> <li>• Creativity is fostered, developed and encouraged</li> <li>• My firm's structure encourages and promotes innovation and risk taking</li> <li>• My firm's culture allows for getting things done even if this means disregarding formal procedures</li> <li>• The requirements of situation and each employee's personality define proper on-job behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• The general preparedness to take risks is seen as a key to growth and survival</li> <li>• My firm has a proclivity for risk-projects aiming at achieving high returns</li> <li>• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities</li> <li>• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc</li> <li>• My firm typically initiates actions forcing competitors to respond to</li> <li>• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking</li> <li>• My firm has a strong emphasis on R&amp;D, technological leadership and innovations</li> </ul>

<b>Business Environment</b>	<b>Ecological Environment</b>
<ul style="list-style-type: none"> <li>• The business environment is very risky. A 'wrong step' might ruin my firm</li> <li>• The economic development has become far less predictable</li> <li>• The technological development has become far less predictable</li> <li>• Strong price competition dominates our business environment</li> <li>• Strong quality competition dominates our business environment</li> <li>• The rate of innovation dramatically increases</li> <li>• Market activities of our competitors have become far less predictable</li> <li>• The customer behaviour has become far less predictable</li> </ul>	<ul style="list-style-type: none"> <li>• My firm is increasingly influenced by ecological aspects</li> <li>• The presence of ecologically oriented competitors is increasing in our market</li> <li>• Development of various ecologically oriented technologies has increased</li> <li>• The influence of ecological regulations on my firm is increasing</li> <li>• The preparedness of our customers to pay a higher price for ecologically oriented products or services is seen as quite high</li> <li>• The demand for ecologically oriented products and processes has increased</li> </ul>

<b>Ecological Orientation</b>
<ul style="list-style-type: none"> <li>• Firms face new market opportunities in an ecological sensitive business environment</li> <li>• New market segments can be developed with ecologically oriented products and procedures</li> <li>• The ecological aspects should be incorporated into the business' philosophy</li> <li>• Public relation activities contribute to the increasing ecological awareness of customers and stakeholders</li> <li>• Consistently pursuing an ecological protection concept improves the firm's competitiveness</li> <li>• Ecological information should actively be incorporated into firm's activities</li> <li>• Ecological investments are seen as preventive measures</li> <li>• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms</li> <li>• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market</li> <li>• Firms should be more oriented to ecologically oriented competitors</li> <li>• With regard to the environmentalism a resistance strategy is worthwhile</li> </ul>

**Table 5.1 Statements considered in Question 8 -12**

### **5.2.2 Case Study - The ecological involvement**

The objective of the second research phase is to gain an overview of how companies perform ecological issues within their businesses. The main focus is to get an insight into the areas of ecological activities and the degree to which they are approached strategically. Furthermore, the researcher aims to discover if differences in the ecological performance of firms can be explained in the way they manage their business, thus looking at the firm's entrepreneurial and organicity dimension. This will then further acknowledge the results obtained from the first phase.

Respondents, who did not participate in the first survey, are asked to answer the questions 8-12 of the first survey (Table 5.1). Based on these results and according to the measurement scale of the first research phase, the management style and organisational structure can be identified, as well as the environment in which the firm operates. Furthermore, the results of the questionnaire allow to deduce the ecological approach pursued by the firm.

During the interviews, several business areas with regard to ecology are discussed. The topics of interest are:-

- Marketing
- Production
- Distribution / Logistic
- Controlling
- Human Resources
- Product policy
- Pricing
- General attitude / Motivation
- Opportunities and Threats
- Organisation
- Management Style
- Strategic approach

The case study outlines the firms' environmental activities based on the value chain system. The value chain approach permits to look at all strategic relevant resources allowing to systematically consider the entire business approach of a firm.

## 6 Results

### 6.1 Results of the survey - Managing in a changing world

The total sample covered 500 firms across several industries. 236 completed questionnaires were received, which represents a response rate of 47,2%. A number of questionnaires were discarded, as they only answered the profile questions or only a small fraction of the items of questions six through twelve. This resulted in a final sample of 212 firms, a final overall response rate of 42,4%, which was then used for further analysis. As already mentioned in Chapter 5 a high response rate reduces the probability that non-response bias is substantial. However, even though the response rate is comparatively high („Mail questionnaires usually have lower response rates, typically less than 15%“) a potential non-response bias still exists, thus the results respectively the respondents may not be representative of the original sample.

Several statistical techniques are available to execute different statistical tests. In this project the cross-tabulation aiming at showing the joint distribution of variables and chi-square statistics for measuring if an association between the tested variables is statistically significant were used. Furthermore hypothesis testing are performed. The aim of hypothesis testing is to test if the populations from which the groups are selected have the same means for the dependent variable. Various authors classify hypothesis testing into two procedures, the parametric tests and non-parametric tests. Non-parametric tests are more related to ordinal or nominal scale data whereas parametric tests are related to more interval scale data and it is assumed that the variables show a normal distribution rather than a U-shaped distribution. The questions 6 through to 12a have been classified as having an interval scale, representing numerically distances between any two scales and as stated by Malhotra (1993) marketing research examples for an interval scale are data related to attitudes, opinions etc. Furthermore, the questions 6 to 12a have

been tested on normal distribution. The plotted histograms with the normal distribution curve show that all questions can be defined as having a 'sufficient' normal distribution.

Moreover, the Kolmogorov-Smirnov-Test has been executed in order to test the normal distribution. There is evidence for a significant deviation from a normal distribution at  $p < 0.05$ . All results show the p-value above the significance level of 0.05. Therefore a normal distribution can be assumed. Within the parametric tests different tests are available depending on the independent or dependent variable structure. The t-test can be performed for one sample, one independent variable with 2 or k levels and one dependent sample. Whereas the Analysis of variance (ANOVA) technique allows testing one independent variable with k-levels (one-way), and independent variables with k-levels (n-way) with one dependent sample. The analysis of covariance is used when at least one independent variable is categorical and one metric. The multivariate analysis of variance (MANOVA) technique allows testing k independent with k dependent variables. The MANOVA and n-way ANOVA technique allows also the testing of interaction between the groups. Finally the regression analysis can be performed for analysing associative relationship between a dependent variable (metric) and one or k independent variables all having an interval scale. The aim is to measure whether and how much of the dependent variable variation can be explained by the independent. The correlation analysis was used to measure the strength of association between two variables.

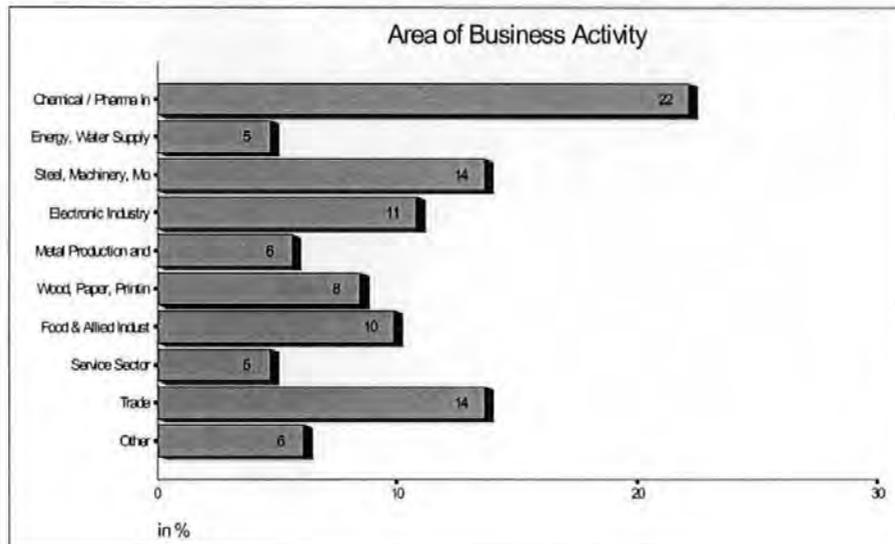
Table 6.1 shows the results of the profile questions by industry. Appendix C also summarises the total breakdown of the questions by industry.

**Table 6.1 Industry Profile Summary**

			<b>Chemical/ Pharma</b>	<b>Energy, Water Supply, Coal Mining</b>	<b>Steel, Machinery Motor vehicle</b>	<b>Electronic</b>	<b>Metal production and processing</b>
<b>Size of Firm</b>		20001 + 10001 - 20000 5001 - 10000 2001 - 5000 1001 - 2000 501 - 1000 251 - 500 1 - 250	21% 9% 6% 13% 15% 6% 15% 15%	10% 30% 20% 20% 10% - 10% -	24% 14% 7% 28% 10% 3% 7% 7%	22% 9% 4% 17% 17% 9% 17% 4%	8% 8% 8% 17% 8% 8% 25% 17%
<b>Source of Customer</b>		Trading Companies Processing Industry Service Firms Public Authority Consumers	30% 47% - - 23%	20% 30% 10% 10% 30%	10% 62% 5% 7% 17%	30% 39% 9% 9% 13%	25% 67% - 8% -
<b>Sales performance over the last 3 years</b>		Increased > 30% Increased 11-30% Increased 1-10% Remained unchanged Decreased 1-10% Decreased > 10%	9% 38% 26% 13% 15% -	- 10% 40% 20% 30% -	3% 41% 38% 10% 3% 3%	9% 35% 30% 26% - -	8% 33% 42% - 17% -
<b>Generic Strategy</b>		Cost Leadership Differentiation / Quality Specific market segm.	28% 55% 17%	40% 60% -	24% 55% 21%	9% 78% 13%	17% 58% 25%
<b>Markets</b>		Regional National National & EC Global	- 30% 28% 42%	30% 50% 10% 10%	- 14% 31% 55%	- 13% 22% 65%	- 17% 33% 50%
<b>Expected sales performance over the next 3 years</b>		Increased > 30% Increased 11-30% Increased 1-10% Remained unchanged Decreased 1-10% Decreased > 10%	13% 38% 32% 13% 4% -	- 10% 40% 40% - 10%	7% 45% 38% 10% - -	- 61% 39% - - -	- 42% 50% 8% - -

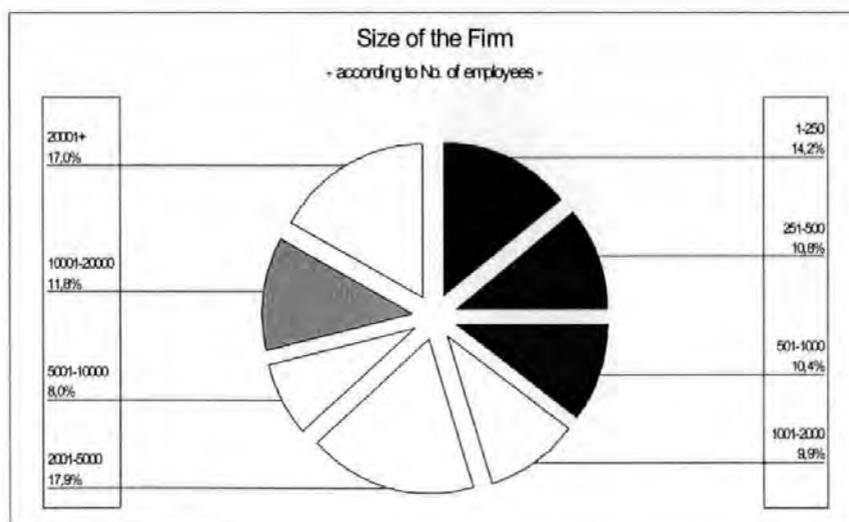
			Wood, Paper, Printing	Food & Allied	Service	Trade	Other
<b>Size of Firm</b>		20001 + 10001 - 20000 5001 - 10000 2001 - 5000 1001 - 2000 501 - 1000 251 - 500 1 - 250	- 17% 6% 22% 6% 11% - 39%	5% 10% 5% 38% 5% 24% 5% 10%	10% 20% 10% - 20% 10% 10% 20%	31% 3% 7% 10% 3% 14% 14% 17%	8% 23% 23% 8% - 23% - 15%
<b>Source of Customer</b>		Trading Companies Processing Industry Service Firms Public Authority Consumers	33% 56% 6% - 6%	81% 10% - - 10%	20% 30% 10% 10% 30%	28% 17% - 3% 52%	38% 62% - - -
<b>Sales performance over the last 3 years</b>		Increased > 30% Increased 11-30% Increased 1-10% Remained unchanged Decreased 1-10% Decreased > 10%	6% 28% 33% 17% 11% 6%	5% 33% 38% 14% 5% 5%	- 40% 30% 10% 10% 10%	7% 31% 31% 3% 24% 3%	- 23% 31% 8% 15% 23%
<b>Generic Strategy</b>		Cost Leadership Differentiation/Quality Specific market segm.	17% 61% 22%	19% 71% 10%	- 70% 30%	24% 66% 10%	31% 54% 15%
<b>Markets</b>		Regional National National & EC Global	6% 17% 33% 44%	- 29% 52% 19%	20% 30% 20% 30%	3% 52% 38% 7%	- 23% 39% 39%
<b>Expected sales performance over the next 3 years</b>		Increased > 30% Increased 11-30% Increased 1-10% Remained unchanged Decreased 1-10% Decreased > 10%	- 22% 56% 22% - -	- 43% 43% 5% 5% 5%	- 40% 60% - - -	3% 41% 48% 7% - -	8% 54% 23% 8% 8% -

The majority of the respondents (22%) belongs to the chemical/pharma industry followed by the steel, machinery, and motor vehicle manufacturing industry (14%) and trade industry (14%). Figure 6.1 summarises the share of the participating industries.



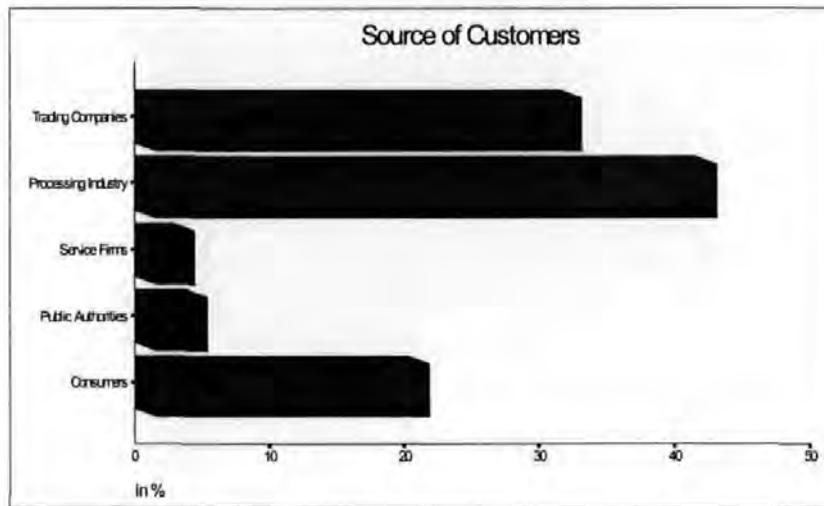
**Figure 6.1 Area of Business Activity**

The overall results show that regarding the size of firms 25% of them have up to 500 employees, 20% of the firms have between '501-2.000' employees and 26% between '2001-10.000' employees. The highest proportion is represented by firms having more than 10.001 employees.



**Figure 6.2 Size of Firms**

When asking for the primary source of customers (Question 3) the majority of firms indicated that the processing industry represents the main customer segment (42%) followed by trade companies and consumers.

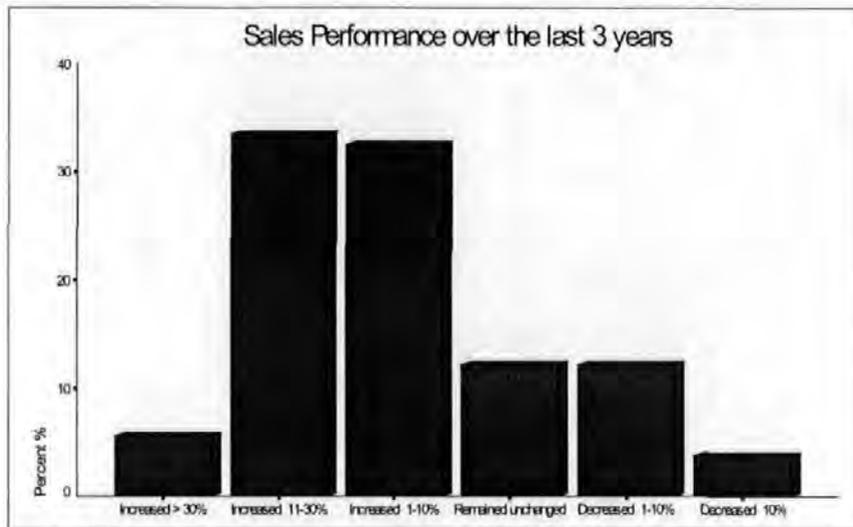


**Figure 6.3 Source of Customers**

In Question 4 firms were asked to indicate their performance over the last 3 years. The firms can be classified in roughly three groups, firms with a:-

- decreasing performance
- stable performance
- increasing performance

The majority of the firms recorded an increasing performance over the last three years (72%) followed by firms which recorded a decrease in performance (16%) and 12% of the firms recorded an unchanged performance. However, taking into account the annual inflation rate, it is questionable if an increase in performance by between 1%-10% (33%) is more likely to be termed 'stagnation' rather than an increase in performance.

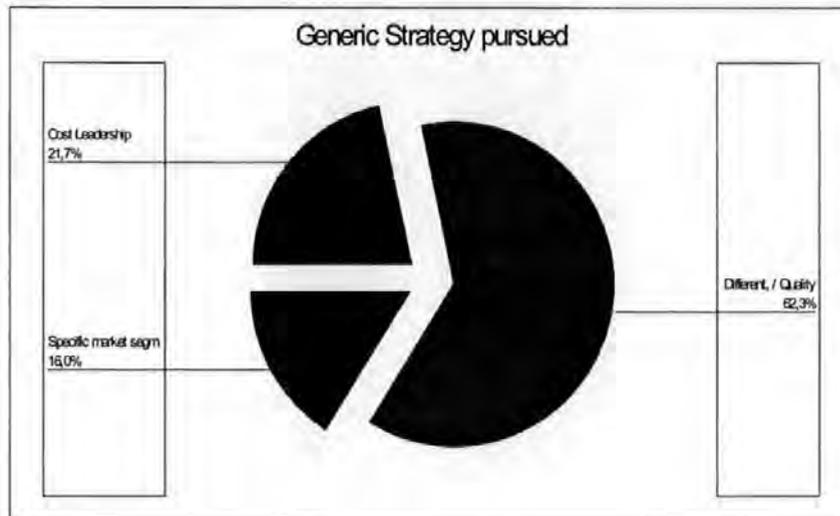


**Figure 6.4 Sales Performance over the last 3 years**

Looking among the industries and the performance over the last three years the results indicate that the majority of firms in each industry recorded an increase in performance (Table 6.1).

A valid chi-square test for testing the null-hypothesis that there is no association between size of firm and the performance over the last 3 years could not be carried out as more than 20% of the cells had a frequency less than 5. The categories for the size of firms were grouped into three ranges (1-500, 501-2,000, 2,001+) in order to avoid the risk of not fulfilling the criteria for a valid chi-square test, but again the criteria could not be fulfilled. However, the significance value of the Pearson's chi-square suggests a possible association. 74% of the firms having more than 2,001 employees recorded an increase in performance over the last 3 years compared to 68% of firms having less than 500 employees. The results indicate that the bigger sized firms performed better in the last 3 years than the smaller sized firms (Figure 6.1.B, Appendix B). But, using the analysis of variance (ANOVA) test could not reject the null-hypothesis ( $H_0$ ) that there is no difference between the size of groups and the performance over the last 3 years. Thus, the differences between the groups are not statistically significant.

In Question 5 firms were asked to indicate which strategy best describes the firm's generic strategic position. Overall, the results indicate that predominantly a differentiation/quality strategy is pursued by the firms followed by a cost leadership strategy, where only 16% of the firms put emphasis on satisfying specific market segments.



**Figure 6.5 Generic Strategy pursued**

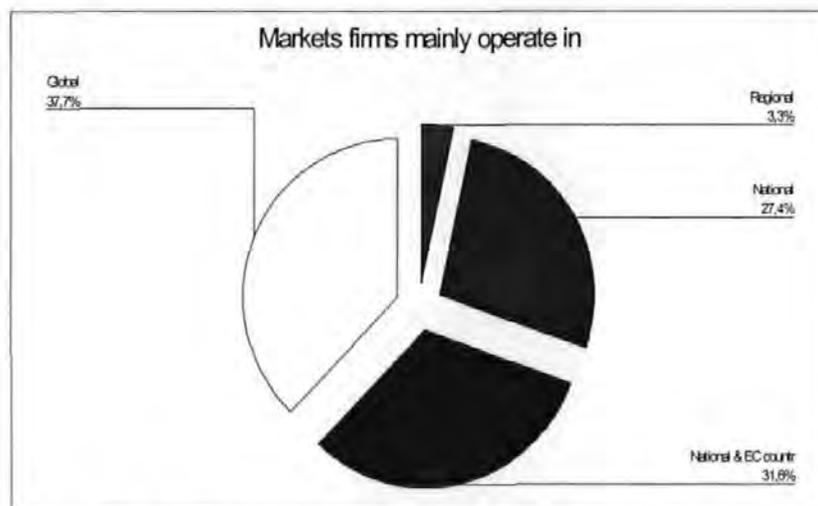
No differences with regard to the generic strategy could be found among the industries. The majority of firms regardless of the industry pursue a differentiation/quality strategy (Figure 6.2., Appendix B).

A valid chi-square test, at a significance level of 0.002, showed that there is a relationship between the size of firm and the strategic position. 55% of the firms pursuing a differentiation/quality strategy belong to the bigger sized firms whereas firms approaching a specific market segment strategy are more of smaller size (Figure 6.3., Appendix B).

No major differences were observed with regard to the performance over the last 3 years in relation to the generic strategy firms pursue (Figure 6.4., Appendix B). The majority of the firms independent of their generic strategy recorded an increase in performance. 64% of the firms, which recorded an increase in performance pursue a differentiation strategy. There was also no

evidence for a relationship between strategic position and performance over the last 3 years according to the chi-square test.

In Question 6 firms were asked to state which of the markets represent their major market. The answers can be used as an indicator for the degree of internationalisation. Overall, 38% of the firms mainly operate within the global market followed by firms operating within their national boundaries and EC countries, whereas only 3% are doing their primary business within their region.



**Figure 6.6 Markets firms mainly operate in**

As stated in the industry specific profiles (Table 6.1 and Appendix C), the majority of the firms independent of the industry see the global market as their major market. However, the trade industry and the energy, water supply, coal mining industry mainly operate within the national market, whereas the food & allied industry mainly operates within the 'national & EC market'. Firms in the energy, water supply, coal mining industry are also represented with 30% operating only within their region.

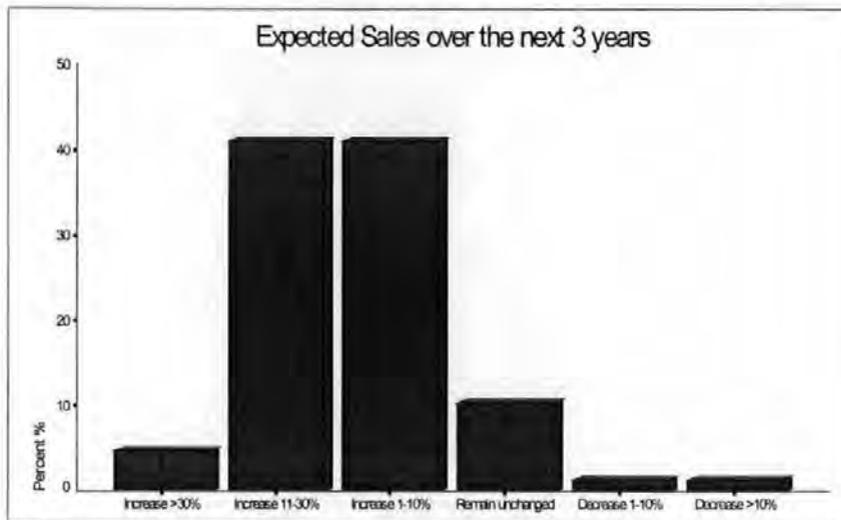
According to the cross-tabulation bigger sized firms tend to be more internationally oriented than smaller sized firms (Figure 6.5., Appendix B). 65% of the globally operating firms have more than 2.001 employee whereas

43% of the regionally operating firms have less than 500 employees. However, a chi-square test could not be performed as the criteria for a valid test were not fulfilled.

In order to examine the relationship of the performance over the last 3 years and the markets the firms are mainly operating in, the categories of sales performance were grouped into 'increased sales', 'remained unchanged' and 'decreased sales' in order to fulfil the criteria of a valid chi-square. The Pearson chi-square, showing a significance value of 0.04, suggests a possible association between performance and markets. Subsequently a hypothesis test was performed. The null hypothesis that there is no difference between the market groups and performance over the last 3 years had to be rejected. 29% of the firms, which are mainly operating within their region, registered a decreasing performance, whereas 9% of firms mainly operating within the global market recorded a decrease in performance. Moreover, 26% of firms mainly operating in national markets registered a decrease in performance and 15% of the firms operating in national & EC markets (Figure 6.6., Appendix B). In other words, 41% of the firms, which recorded an increase in performance were operating globally compared to 3% operating within their region.

In Question 7 firms were asked to indicate their expectations concerning their performance over the next 3 years. Overall, compared to the sales performance over the last three years more firms expect an increase in performance over the next three years. Only 3% of the firms expect a decrease in performance and 10% an unchanged performance. 87% of the firms state that they expect an increase in performance over the next three years. The proportion of firms expecting an increase in performance by between 1% - 10% is also quite high with 41%. Firms expecting an increase

in performance by between 11-30% are represented with the same share of 41%.



**Figure 6.7 Expected Sales over the next 3 years**

Among all industries, the majority of firms expect an increase in performance. Across all industries decreasing performance expectations for the next 3 years are below 10%.

A valid chi-square test for the size of firm and the expected performance over the next 3 years could not be carried out. However, the ANOVA test showed evidence against  $H_0$  of no significant difference between the size of groups and the expected performance over the next 3 years with a chi-square slightly above 0.05. 5% of the firms with more than '2,001' employees expect an increase of performance by more than 30% compared to 4% of the smaller sized firms. However, 56% of the firms having '501-2,000' employees expect an increase between 11-30% compared to 39% of the firms having more than '2,001' employees and 34% of the firms having less than 500 employees (Figure 6.7., Appendix B).

The cross-tabulation of performance over the last 3 years and the expectation over the next 3 years showed that 93% of the firms which recorded an

increase in performance over the last 3 years also expect an increase in the next 3 years. 68% of the firms, which registered a decreasing performance, expect an increase in performance over the next 3 years, whereas 73% of the firms, which registered an unchanged performance, expect an increase in performance over the next 3 years (Figure 6.8., Appendix B). A valid chi-square test could not be performed as more than 20% of the cells had a frequency less than 5. However, the significance level of 0.002 suggests a possible association.

The same test also could not be carried out for the relationship of the strategic position and the performance over the next 3 years. Assuming a  $H_0$  that there is no difference between the groups pursuing a specific generic strategy with regard to the performance over the next 3 years could not be rejected. The result shows that 94% of the firms pursuing a niche strategy expect an increase in performance compared to 88% of firms pursuing a differentiation/quality strategy and 78% pursuing a cost leadership strategy (Figure 6.9., Appendix B).

A valid chi-square test for the performance over the next 3 years and the firms' degree of internationalisation could not be carried out. A significance level of  $p=0.003$  suggests the existence of a relationship. There is also evidence against the  $H_0$  of no difference between the market groups with regard to the expectation of performance over the next 3 years. The result revealed a significant difference between the groups concerning the expectation of performance over the next 3 years. 94% of the globally operating firms expect an increase in performance compared to 57% of the firms operating within their region (Figure 6.10., Appendix B). Firms operating within their region expect no increase above 10%, whereas 8% of the firms operating within the global market expect an increase of more than 30% and 48% expecting an increase between 11-30%. The results indicate that with

the degree of internationalisation the expectations with regard to future performance over the next 3 years are higher. Looking at the recorded performance over the last 3 years and the expectations over the next 3 years, results show that compared to 71% of the regionally operating firms which registered an increase in performance over the last 3 years now only 57% expect an increase in performance.

In Question 8 the firms were asked to indicate on a 5-point scale, ranging from 'does not apply' (1) to 'strongly applies' (5), the degree to which statements with regard to the organisational structure apply to their firms. The rating of the ten items were then averaged to get at a single 'organisational structure' index. The mean value of 3.55 was used as the threshold to divide firms into two groups: firms having organic and mechanistic organisational structures.

Table 6.2 summarises the mean values of the statements related to the organisational structure.

	Statements	Mean Value	Ranking
Q_8_A	• There are few hierarchical layers in the firm	3,68	4
Q_8_B	• The organisational structure includes project teams, matrix structures or special task forces	3,71	3 X
Q_8_C	• Decision-making powers are decentralised	3,54	6
Q_8_D	• A problem-solving process relies more on ad hoc solutions than on existing regulations or procedures	3,22	9
Q_8_E	• There are vertically and horizontally open channels of communication	3,92	1 X
Q_8_F	• Financial and operating information is shared and flow quite freely throughout the firm	3,16	10
Q_8_G	• Creativity is fostered, developed and encouraged	3,86	2 X
Q_8_H	• My firm's structure encourages and promotes innovation and risk taking	3,42	8
Q_8_I	• My firm's culture allows for getting things done even if this means disregarding formal procedures	3,57	5
Q_8_J	• The requirements of situation and each employee's personality define proper on-job behaviour	3,46	7
<b>Q_8 Avg</b>	<b>• Organisational Structure</b>	<b>3,55</b>	

X Top Three

**Table 6.2 Mean values for organisational structure (Question 8)**

77% of the firms stated that the item *'there are vertically and horizontally open channels of communication'* applies to their firm, whereas in comparison only 37% stated that *'financial and operating information is shared and flow quite freely throughout the firm'* applies. With 70% the majority also stated that the item *'creativity is fostered, developed and encouraged'* applies to their firms. The statements *'organisational structure includes project teams, matrix structures or special task forces'* and that *'there are few hierarchical structure'* apply were stated by slightly more than 60%. Furthermore, slightly above 50% of the firms stated that the *'firm's culture allows for getting things done even if this means disregarding formal procedures'*, *'decision-making powers are decentralised'* and that *'requirements of the situation and each employee's personality define proper on-job behaviour'*. 50% of the firms stated that *'firm's structure encourages and promotes innovation and risk taking'* applies whereas only 40% stated that *'a problem solving process relies more on ad hoc solutions'* applies. Figure 6.11. (Appendix B) shows the mean values in a 'rosette' graph.

The averaged scale has a mean value of 3.55, a range from 2.1 to 4.7, a Std.Dev. of 0.5, and an inter-item reliability coefficient of 0.78. From the Boxplot (Figure 6.12., Appendix B) it is apparent that the majority of the answers are distributed between 3.3 (25-percentile) and 3.9 (75-percentile). The Boxplot shows the highest and smallest observed value, the median, the 25-percentile and 75-percentile and 50% of cases which have an observed value within the box. Figure 6.8 indicates that 54% of the firms can be classified into the group of having organic structures.

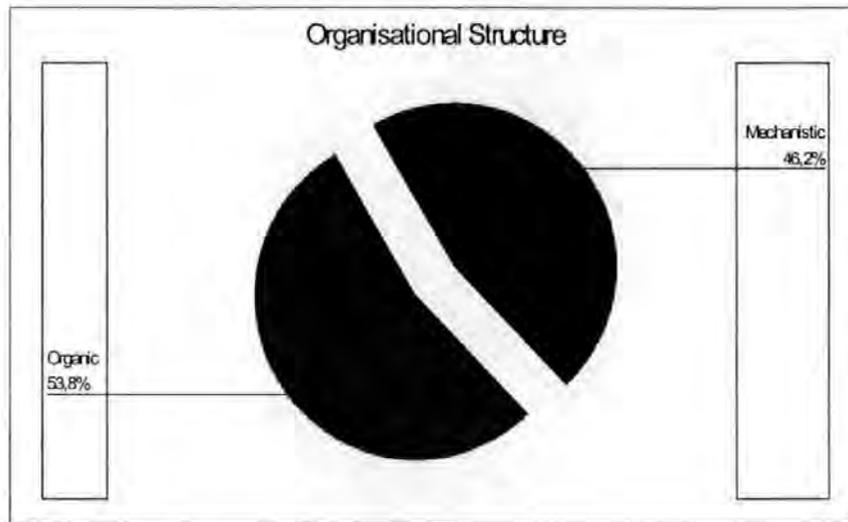


Figure 6.8 Organisational Structure

A hypothesis testing was performed assuming the null-hypothesis of no difference between the two organisational groups with regard to the organisational structure statements by using the MANOVA technique. At the significance level of 5% there was evidence against the null-hypothesis of no difference between the organisation groups. Looking at the mean values of the single items it becomes apparent that firms having 'organic' structures rate all items higher than the firms having 'mechanistic' structures (Table 6.3).

		'Organic'	'Mechanistic'
Q_8_A	• There are few hierarchical layers in the firm	4,05	3,26
Q_8_B	• The organisational structure includes project teams, matrix structures or special task forces	4,06 X	3,31 X
Q_8_C	• Decision-making powers are decentralised	3,94	3,07
Q_8_D	• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures	3,52	2,87
Q_8_E	• There are vertically and horizontally open channels of communication	4,24 X	3,55 X
Q_8_F	• Financial and operating information is shared and flow quite freely throughout the firm	3,51	2,74
Q_8_G	• Creativity is fostered, developed and encouraged	4,18 X	3,49 X
Q_8_H	• My firm's structure encourages and promotes innovation and risk taking	3,87	2,91
Q_8_I	• My firm's culture allows for getting things done even if this means disregarding formal procedures	3,96	3,12
Q_8_J	• The requirements of situation and each employee's personality define proper on-job behaviour	3,77	3,10
Q_8 Avg	• Organisational Structure	3,91	3,14

X Top Three

Table 6.3 Mean values by firms having 'organic' and 'mechanistic' structures

Hardly any differences were observed with regard to the mean values differentiated by industries (Figure 6.13., Appendix B). Table 6.3. (Appendix D) shows that the mean values across all industries range between 3.35 and 3.82, indicating that the electronic industry with 3.82 has the highest organic structure followed by the service sector and the chemical/pharma industry. The total breakdown of mean values of each single item concerning the organisational structure is given in Table 6.3. (Appendix D) and industry specific 'rosette' graphs can be found in Appendix C. Figure 6.9 summarises the classification in organic vs. mechanistic structured firms by industry (for detailed figures see also Table 6.1., Appendix D).

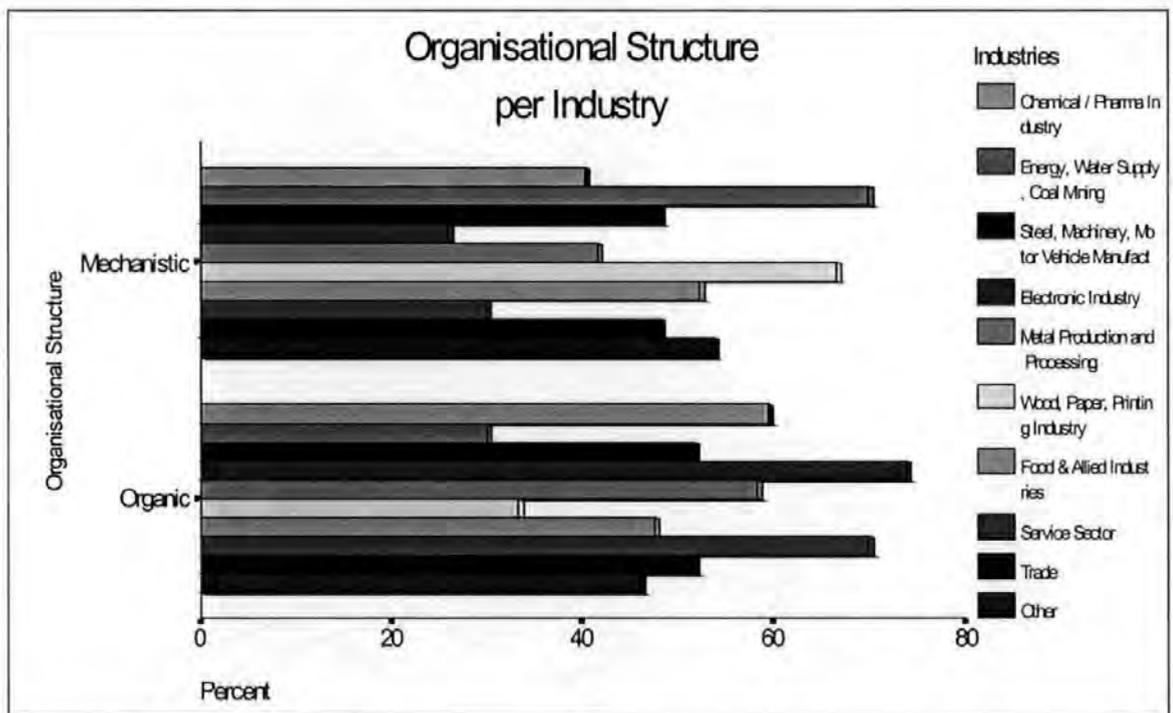


Figure 6.9 Organisational Structure per Industry

The majority of industries could be classified as having an organic structure with the exception of the energy, water supply, coal mining industry and the wood, paper, printing industry. The null-hypothesis that there is no difference between the groups of industries with regard to their organisational structure has been carried out using the ANOVA test. There was no evidence that there is a significant difference between the industry groups concerning the organisational structure. Furthermore, a MANOVA testing has been executed

in order to test the null-hypothesis that there is no difference between the industry groups across multiple dependent variables. The result, with Wilks' lambda value well above 0.05, showed that there is no evidence for rejecting  $H_0$ .

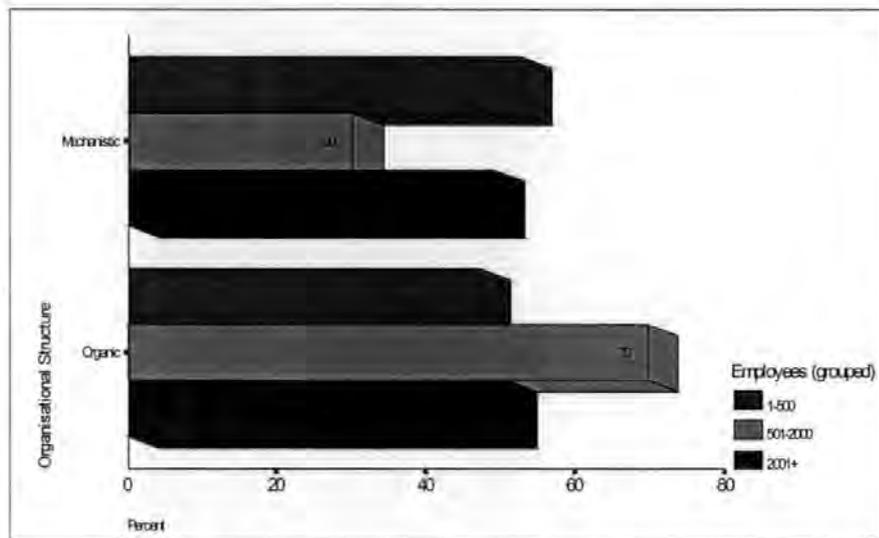
With regard to the size of firms and the degree to which they have organic or mechanistic organisational structures, the mean values range between 3.28 and 3.75, indicating that firms having '501-1.000' employees have the highest mean value, followed by firms with '251-500' employees and '20.001+', whereas firms having less than 250 employees indicate the lowest mean value (Table 6.4).

	1-250	251-500	501-1000	1001-2000	2001-5000	5001-10000	10001-20000	20001+
Q_8_A	3,60 X	4,13 X	4,05 X	3,43	3,68	3,47	3,52	3,61
Q_8_B	2,80	3,52	3,73	4,00 X	3,95 X	3,82 X	3,64 X	4,17 X
Q_8_C	3,37	3,43	3,50	3,57	3,55	3,29	3,56 X	3,83 X
Q_8_D	2,87	3,43	3,59	3,38	3,26	3,06	3,16	3,11
Q_8_E	3,70 X	4,26 X	4,18 X	3,95 X	3,87 X	4,12 X	3,72 X	3,81
Q_8_F	2,77	3,30	3,27	3,24	3,16	3,00	3,28	3,25
Q_8_G	3,77 X	3,91 X	3,91 X	3,90 X	3,84 X	3,88 X	3,56 X	4,08 X
Q_8_H	3,13	3,48	3,86	3,52	3,32	3,29	3,24	3,61
Q_8_I	3,43	3,70	3,73	3,81	3,58	3,35	3,32	3,61
Q_8_J	3,37	3,91 X	3,64	3,52	3,16	3,06	3,52	3,58
Q_8 Avg	3,28	3,71	3,75	3,63	3,54	3,44	3,45	3,67

X Top Three

**Table 6.4 Mean values regarding organisational structure by size of firms**

Figure 6.10 indicates the classification in organic vs. mechanistic structures by the three grouped size of firms.



**Figure 6.10 Organisational structure by size of firm**

The cross-tabulation, using the chi-square test, indicated that there is an statistical significant association between the size of firms and the organisational structure. 67% of firms with '1-250' employees could be classified as mechanistic compared to 33% of firms with '2001 +' employees. There was also evidence against  $H_0$  that there is no difference between the size groups with regard to their organisational structure using the ANOVA test. Subsequently a MANOVA testing has been executed in order to test the null-hypothesis that there is no difference between the size groups across multiple dependent variables. The null-hypothesis had to be rejected as the significance level was well below 0.05. For two statements the null-hypothesis could be rejected. The statement *'the organisational structure includes project teams, matrix structures or special task forces'* applies more to bigger sized firms and *'the requirements of situation and each employee's personality define proper on-job behaviour'* was rated higher by smaller sized firms.

The cross-tabulation of organisational structure and the performance over the last 3 years indicated that a relationship exists. Furthermore the correlation analyses was performed, using the Product Moment Correlation, which analysis the strength of the association between two metric variables

measuring if a linear relationship exists.  $H_0$  of no relationship between performance over the last 3 years and the organisational structure could be rejected, which supports the prior result. The results show that with a significance level of 0.001, the coefficients are highly significantly correlated and the negative sign implies a negative relationship (a low value of the one variable results in a high value of the other variable). In this case firms indicating higher organic structures (higher value indicates a higher degree of agreement) result in higher increased performance (lower value indicates increasing performance). The null-hypothesis that there is no difference in groups of organisational structure with regard to the performance over the last 3 year could be rejected, using ANOVA. 78% of the firms having an organic structure recorded an increasing performance over the last 3 years compared to 64% of firms having mechanistic structures. Looking further into the increasing ranges, the observation shows that 40% of the firms with organic structures noticed an increase in performance by between 11-30% compared to 27% of firms with mechanistic structures (Figure 6.14., Appendix B). Also 8% of the firms with organic structures showed an increase of more than 30% compared to 3% of firms with mechanistic structures. A higher proportion of firms with mechanistic structures observed a decrease in performance.

The null-hypothesis that there is no association between organisational structure and the generic strategy a firm pursues could not be rejected. The cross-tabulation indicated that the majority of the firms despite their organisational structure pursue a differentiation/quality strategy.

A valid chi-square testing the relationship between the organisational structure and the degree to which a firm is operating internationally could not be carried out as more than 20% of the cells had a frequency less than 5. The ANOVA test showed evidence against rejecting  $H_0$  of no difference between the

groups of 'degree of internationalisation' with regard to the organisational structure and also no difference between the groups across the multiple organisational structure statements, by using the MANOVA technique, could be validated. Figure 6.11 shows that 60% of the globally operating firms are classified as having organic structures compared to 29% of regionally operating firms.

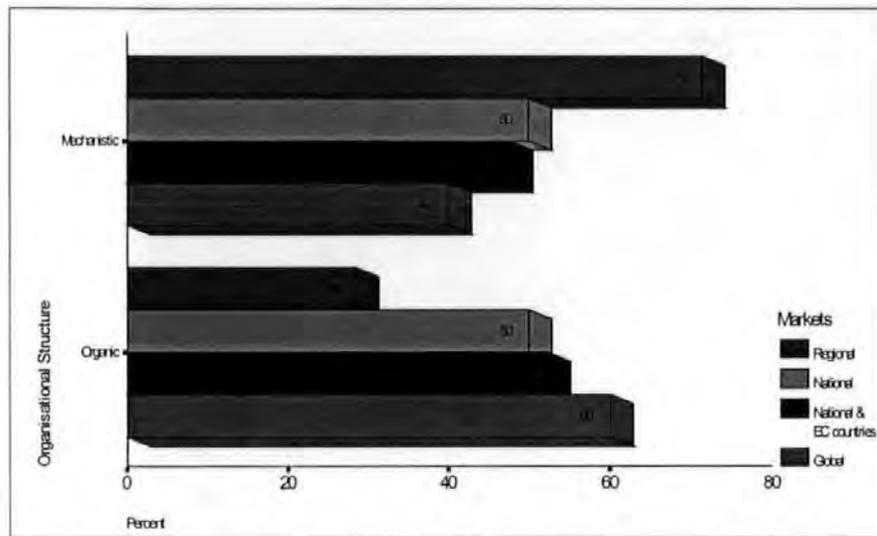


Figure 6.11 Organisational structure by degree of internationalisation

Table 6.5 indicates that more globally operating firms rate their organisational structure as being organic than other firms.

		'Regional'	'National'	'National& EC'	Global
Q_8_A	• There are few hierarchical layers in the firm	3,29	3,72 <del>X</del>	3,73 <del>X</del>	3,65
Q_8_B	• The organisational structure includes project teams, matrix structures or special task forces	2,57	3,45	3,78 <del>X</del>	3,95 <del>X</del>
Q_8_C	• Decision-making powers are decentralised	2,86	3,48	3,61	3,58
Q_8_D	• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures	3,43 <del>X</del>	3,07	3,25	3,28
Q_8_E	• There are vertically and horizontally open channels of communication	3,71 <del>X</del>	3,83 <del>X</del>	3,94 <del>X</del>	3,99 <del>X</del>
Q_8_F	• Financial and operating information is shared and flow quite freely throughout the firm	3,00	3,16	3,15	3,18
Q_8_G	• Creativity is fostered, developed and encouraged	3,29	3,98 <del>X</del>	3,73 <del>X</del>	3,94 <del>X</del>
Q_8_H	• My firm's structure encourages and promotes innovation and risk taking	3,00	3,40	3,45	3,46
Q_8_I	• My firm's culture allows for getting things done even if this means disregarding formal procedures	3,43 <del>X</del>	3,53	3,57	3,61
Q_8_J	• The requirements of situation and each employee's personality define proper on-job behaviour	3,29	3,31	3,52	3,54
Q_8 Avg		3,19	3,49	3,57	3,62

~~X~~ Top Three

**Table 6.5 Mean values regarding organisational structure by degree of internationalisation**

Although the criteria for a valid chi-square test of organisational structure and expected performance over the next 3 years were not met, the significance level suggest a relationship between the organisational structure and the expected performance over the next 3 years. The null-hypothesis that there is no difference between the organisational groups with regard to the expectation on performance over the next 3 years could be rejected. Furthermore, the correlation analysis supports the prior result. The result shows that the relationship is highly significant and the negative sign implies a negative relationship. In this case firms indicating higher organic structures (higher value indicates degree of agreement) result in higher increased performance (lower value indicates increasing performance). The results show that 97% of the firms having an organic structure expect an increase in

performance compared to 76% of the firms with mechanistic structures. Furthermore, the observation shows that 53% of the firms with organic structures expect an increase between 11-30% compared to 28% of firms with mechanistic structures. Also 6% of the 'organic' firms expect an increase of more than 30% compared to 3% of the 'mechanistic' firms (see also Figure 6.15., Appendix B)

In Question 9 the firms were asked to indicate on a 5-point scale, ranging from 'does not apply' (1) to 'strongly applies' (5) the degree to which statements with regard to management style apply to their firm. The ratings of the items, excluding statements 'B', 'D', 'H', were then averaged to get at a single 'management style' index. The mean value of 3.19 was used as the threshold to divide firms into two groups, firms having an entrepreneurial or a conservative management style. Table 6.6 summarises the mean values of the statements related to the management style.

	Statements	Mean Value	Ranking
Q_9_A	• The general preparedness to take risks is seen as a key to growth and survival	3,20	8
Q_9_B	• My firm pursues a policy of growth primarily through external financing	1,94	10
Q_9_C	• My firm has a proclivity for risk-projects aiming at achieving high returns	2,06	9
Q_9_D	• My firm pursues the objective to stabilize current businesses, additionally attempting to identify new market opportunities	4,01	1 X
Q_9_E	• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	3,53	4
Q_9_F	• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	3,26	6
Q_9_G	• My firm typically initiates actions forcing competitors to respond to	3,25	7
Q_9_H	• My firm actively assesses external information	3,59	2 X
Q_9_I	• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	3,48	5
Q_9_J	• My firm has a strong emphasis on R&D, technological leadership and innovations	3,58	3 X
Q_9 Avg	• Management Style	3,19	

X Top Three excluding Statements B / D / H

**Table 6.6 Mean values for management style (Question 9)**

83% of the firms stated that the item *'pursuing the objective to stabilise current businesses, additionally attempting to identify new market opportunities'* applies to their firm. The majority with more than 50% also stated that the items *'firm actively assesses external information'*, *'firm has a strong emphasis on R&D, technological leadership and innovations'*, *'firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities'* and *'strategic objectives are based on innovation, new products and processes, opportunities and risk taking'* apply to their firms. On the other side the majority with more than 70% stated that the items *'firm pursues a policy of growth primarily through external financing'* and *'firm has a proclivity for risk-projects aiming at achieving high returns'* are "not" or "scarcely applicable" to their firms.

The averaged scale has a mean value of 3.19, a range of 1.3 and 4.6, a Std.Dev. of 0.6, and an inter-item reliability coefficient of 0.79. Figure 6.11. (Appendix B) shows the mean values in a 'rosette' graph. The Boxplot (Figure 6.12., Appendix B) indicates that the majority of the responses range between 2.7 (25-percentile) and 3.6 (75-percentile). Figure 6.12 shows the 53% of the firms can be classified as being 'entrepreneurial'.

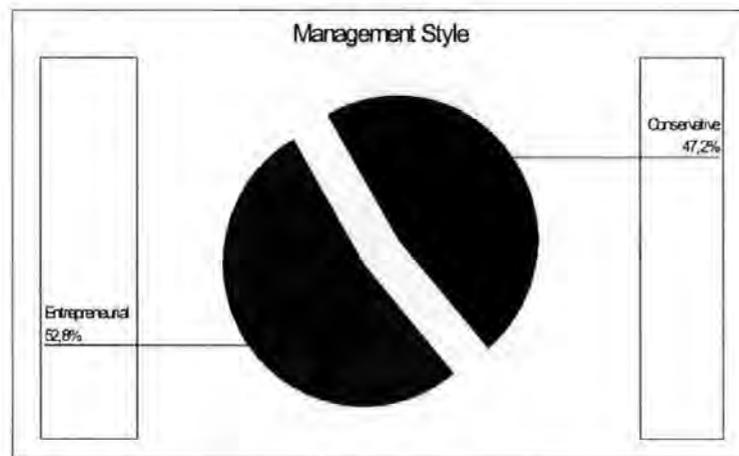


Figure 6.12 Management style

The null-hypothesis of no difference between the two management style groups with regard to the management style statements has been tested. At the significance level of 5% there was evidence against the null-hypothesis of no difference between the groups for nine of the ten statements. Looking at the mean values of the single items it becomes apparent that 'entrepreneurial' firms rate all items higher (Table 6.7).

		'Entrepreneurial'	'Conservative'
Q_9_A	• The general preparedness to take risks is seen as a key to growth and survival	3,67	2,67
Q_9_B	• My firm pursues a policy of growth primarily through external financing	2,00	1,87
Q_9_C	• My firm has a proclivity for risk-projects aiming at achieving high returns	2,41	1,66
Q_9_D	• My firm pursues the objective to stabilise current businesses, additionally attempting to identify new market opportunities	4,29	3,71
Q_9_E	• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	3,99 X	3,02 X
Q_9_F	• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	3,80	2,65
Q_9_G	• My firm typically initiates actions forcing competitors to respond to	3,75	2,70
Q_9_H	• My firm actively assesses external information	3,84	3,31
Q_9_I	• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	3,95 X	2,96 X
Q_9_J	• My firm has a strong emphasis on R&D, technological leadership and innovations	4,17 X	2,92 X
Q_9 Avg	• Management Style	3,68	2,65

X Top Three excluding Statements B / D / H

**Table 6.7 Mean values by 'entrepreneurial' and 'conservative' firms**

The Boxplot (Figure 6.16., Appendix B) indicates hardly any differences in the mean values across the industries, with the exception of the energy, water supply, coal mining industry where the median lies below 3. Table 6.3. (Appendix D) shows that the mean values range between 2.84 and 3.38, indicating that the electronic industry with a mean value of 3.38 is most likely to employ an entrepreneurial management style followed by the metal production & processing industry and the chemical/pharma industry. The total breakdown of mean values of each single item concerning the management

style is given in Table 6.3. (Appendix D) and industry specific 'rosette' graphs can be found in Appendix C. Figure 6.13 summarises the classification of firms in entrepreneurial vs. conservative management style by industry indicating that all industries, with exception of the energy, water-, and supply coal mining industry, can be classified as having a more entrepreneurial management style (for detailed figures see Table 6.1., Appendix D).

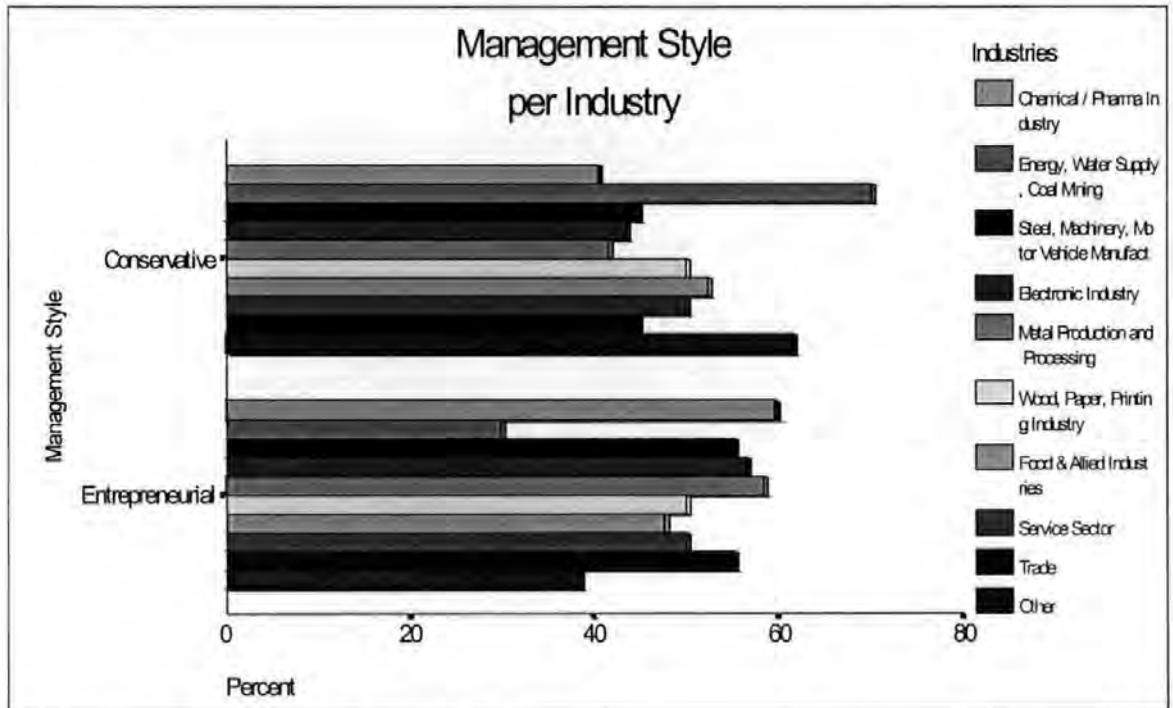


Figure 6.13 Management style per Industry

The null-hypothesis that there is no difference between the groups of industries with regard to their management style can not be rejected. Furthermore, the MANOVA test gave no evidence against the null-hypothesis that there is no difference between the groups of industries across multiple dependent variables (single items), with Wilks' lambda value well above 0.05.

The mean values with regard to the size of firms and the degree to which they employ an entrepreneurial management style range between 2.81 and 3.43, indicating that firms having '501-1.000' employees have the highest mean value, followed by firms with '20001+' and '1.001-2.000' employees, whereas firms having less than 250 employees indicate the lowest mean value

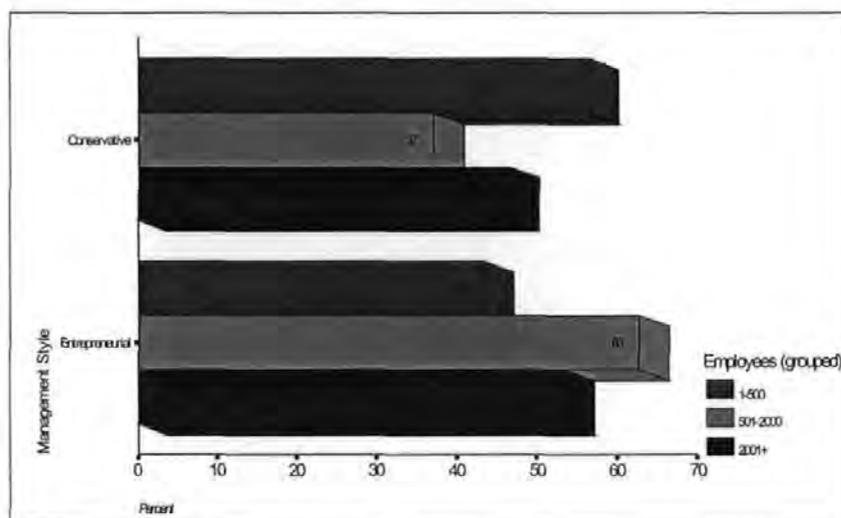
(Table 6.8). The results are quite similar to the results observed for the organisational structure.

	1-250	251-500	501-1000	1001-2000	2001-5000	5001-10000	10001-20000	20001+
Q_9_A	2,93	3,22	3,64	3,19	3,03	3,00	3,12	3,47
Q_9_B	1,97	2,17	1,91	1,86	1,95	2,06	1,84	1,83
Q_9_C	1,87	2,04	2,50	2,05	2,03	2,00	1,84	2,17
Q_9_D	3,87	4,22	4,05	4,38	3,89	3,76	4,04	4,00
Q_9_E	3,37 X	3,74 X	3,77 X	3,57 X	3,42 X	3,47 X	3,32 X	3,67 X
Q_9_F	2,67	3,35	3,18	3,52	3,16	3,12	3,52	3,58
Q_9_G	2,73	3,43	3,32	3,52	3,11	3,35	3,24	3,50
Q_9_H	3,27	3,78	3,64	3,81	3,58	3,47	3,56	3,67
Q_9_I	3,07 X	3,70 X	3,82 X	3,62 X	3,34 X	3,24	3,32 X	3,78 X
Q_9_J	3,07 X	3,78 X	3,77 X	4,10 X	3,37 X	3,41 X	3,76 X	3,64 X
Q_9 Avg	2,81	3,32	3,43	3,37	3,06	3,08	3,16	3,40

X Top Three excluding Statements B / D / H

**Table 6.8 Mean values regarding management style by size of firms**

Figure 6.14 summarises the classification of firms in firms having an entrepreneurial and a conservative management style by the three grouped sizes of firms.



**Figure 6.14 Management style by size of firm**

The significance value of the chi-square test suggests an association between the size of firms and management style. The significance value in the ANOVA test was below the threshold of 0.05. Thus the null-hypothesis of no difference between the size groups and management style could be rejected.

However, the MANOVA test gave no evidence against the null-hypothesis that there is no difference between the size groups across multiple dependent variables. Between 60-70% of the firms having '251-500', '501-1.000' and '20.001 +' employees are classified as having an entrepreneurial management style compared to 30% of the firms having less than 250 employees.

The significance value of the chi-square test for management style and the performance over the last 3 years indicated an association. The correlation analysis, using the Product Moment Correlation, gave evidence, at a significance value of 0.000, for rejecting  $H_0$  of no relationship between performance over the last 3 years and management style. The negative sign implies a negative relationship (a low value of one variable results in a high value of the other variable) thus indicating that a higher entrepreneurial degree results in higher performance. The null-hypothesis that there is no difference in groups of management style with regard to the performance over the last 3 year could be rejected, using ANOVA. Thus, the difference between the two groups regarding the performance over the last 3 years is statistically significant. The results indicated that 80% of the firms having an entrepreneurial management style recorded an increasing performance over the last 3 years compared to 63% of firms having a conservative management style. The observation on the performance increase between 11-30% indicates that 22% of the conservative firms compared to 44% of the entrepreneurial firms registered this increase (Figure 6.17., Appendix B).

The cross-tabulation of management style and the strategy pursued, using the chi-square test, indicated no association. The results show that the majority of the firms pursuing a conservative or entrepreneurial management style pursue a differentiation/quality strategy. However, a majority of firms adopting a cost leadership strategy can be classified as being conservative firms.

A valid chi-square testing  $H_0$  that there is no relationship between the management style and the degree a firm is international could not be carried out as the criteria for a valid chi-square test was not fulfilled, however the significance level suggested a possible association. The results show that 66% of the global operating firms adopt an entrepreneurial management style compared to 29% of the regional operating firms (Figure 6.15)

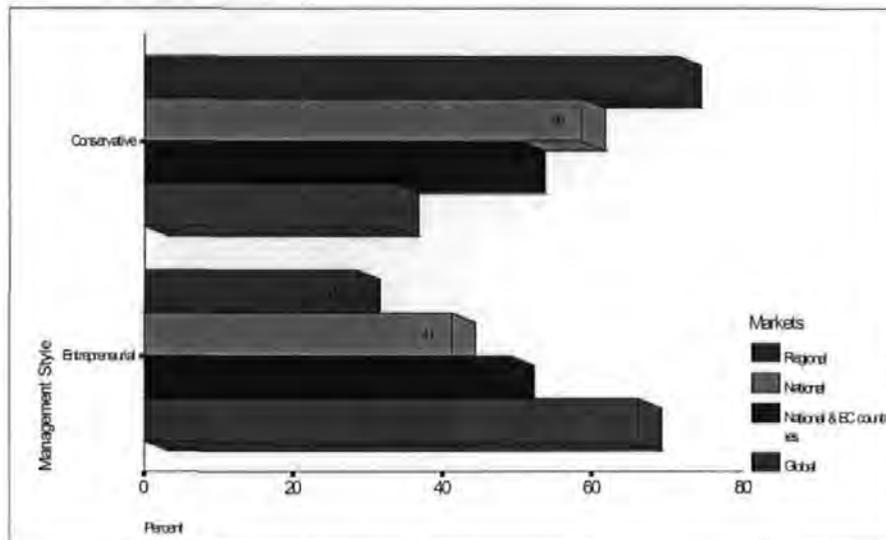


Figure 6.15 Management style by degree of internationalisation

The cross-tabulation and Table 6.9 indicate that with a higher degree of internationalisation the degree of an entrepreneurial management style increases. No evidence could be established for the null-hypothesis that there is no difference between the "market" groups with regard to management style, using ANOVA. Subsequently a MANOVA test has been performed in order to test the null-hypothesis that there is no difference between the market groups across multiple dependent variables. The significance level of 0.007 gave evidence to reject the null-hypothesis of no difference between the groups. Statistical significant differences between the groups were validated for four statements. 50% of the firms operating within the global market indicated that the statement '*firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc*' applies with an observed mean value of 3.55 (Table 6.9). In

contrast, 33% of national operating firms resulted in a mean value of 3.09. Less than 30% of the nationally operating firms indicated that the statement *'firm typically initiates actions forcing competitors to respond to'* applies with an observed mean value of 3.10 compared to over 50% of the globally operating firms with a mean value of 3.47. With regard to the statement *'strategic objectives are based on innovation, new products and processes, opportunities and risk-taking'* 29% of the regional operating firms stated that this applies up to strongly applies (mean value of 2.86) compared to 64% of the global operating firms with a mean value of 3.74 and 47% of the firms operating within the national & EC market with a mean value of 3.40.

38% of the global operating firms indicated that the statement *'firm has a strong emphasis on R&D, technological leadership and innovations'* applies strongly with a mean value of 4.01 compared to 14% of the regional operating firms indicating a mean value of 2.57 and 12% of the national operating firms with a mean value of 3.12. Furthermore, the correlation analysis indicates that a significant relationship exists and the positive sign implies a positive relationship. Thus, it may be concluded that a higher degree of internationalisation results in a higher degree of entrepreneurial style.

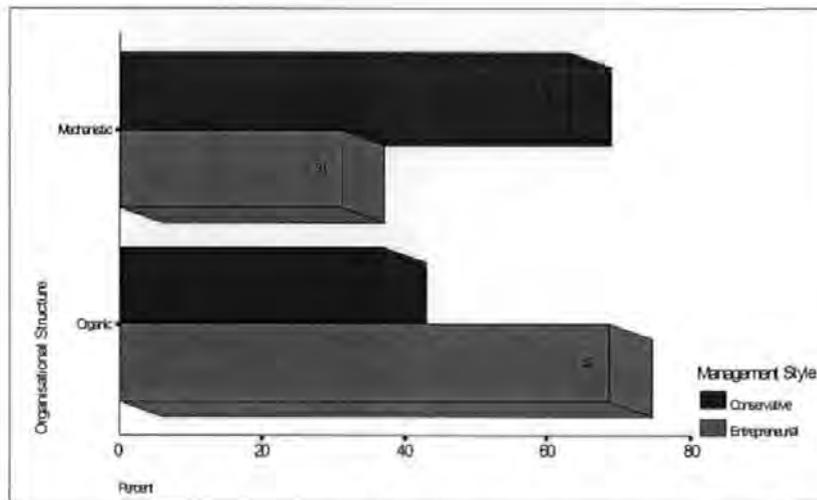
		'Regional'	'National'	'National& EC'	Global
Q_9_A	• The general preparedness to take risks is seen as a key to growth and survival	3,29 X	3,16 X	3,12	3,29
Q_9_B	• My firm pursues a policy of growth primarily through external financing	2,43	1,76	1,99	1,99
Q_9_C	• My firm has a proclivity for risk-projects aiming at achieving high returns	1,57	2,05	2,03	2,13
Q_9_D	• My firm pursues the objective to stabilise current businesses, additionally attempting to identify new market opportunities	3,86	3,88	4,00	4,14
Q_9_E	• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	2,86 X	3,47 X	3,51 X	3,66 X
Q_9_F	• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	2,14	3,09	3,18	3,55
Q_9_G	• My firm typically initiates actions forcing competitors to respond to	2,29	3,10	3,22	3,47
Q_9_H	• My firm actively assesses external information	3,29	3,53	3,60	3,65
Q_9_I	• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	2,86 X	3,29 X	3,40 X	3,74 X
Q_9_J	• My firm has a strong emphasis on R&D, technological leadership and innovations	2,57	3,12	3,57 X	4,01 X
Q_9 Avg		2,51	3,04	3,15	3,41

X Top Three excluding Statements B / D / H

**Table 6.9 Mean values regarding management style by markets**

A valid chi-square for the management style and the performance over the next 3 years could not be carried out. However, the significance level suggests an associations. The null-hypothesis that there is no difference between the groups of management style with regard to the expectation on performance over the next 3 years could be rejected. The correlation analysis indicates that the relationship is highly significant and the negative sign implies a negative relationship, thus higher degree of entrepreneurial management style results in a higher expectation of performance. 90% of the firms having an entrepreneurial management style expect an increase in performance compared to 83% of the 'conservative firms' (see also Figure 6.18., Appendix B). A more significant difference can be seen, when looking at the expectations of an increase in performance over 11%, indicating that 59% of the 'entrepreneurial' firms compared to 31% of the 'conservative' firms stated this expectation.

The cross-tabulation, using the chi-square, indicated an association between management style and organic structure. Figure 6.16 shows that 69% of the 'entrepreneurial' firms have organic structures and 63% of the 'conservative' firms rather have more mechanistic structures. The correlation analysis shows that the relationship is highly significant and the positive sign implies a positive relationship, thus a higher degree of entrepreneurial management style may result in a higher degree of organicity.



**Figure 6.16 Organisational structure by management style**

The null-hypothesis of no difference between the groups of management style concerning the organisational structure could be rejected, using the ANOVA technique. The 'entrepreneurial' firms rated their organisational structure to be more organic, with a mean value of 3.74, than the 'conservative' firms with a mean value of 3.35 (Table 6.10). Subsequently a MANOVA test has been performed in order to test the null-hypothesis of no difference between the groups of management style across multiple dependent variables (organisational structure statements). The null-hypothesis had to be rejected as the significance level was well below 0.05. For six statements the null-hypothesis could be rejected.

The statements are: -

- *'the organisational structure includes project teams, matrix structures or special task forces'*,
- *'there are vertically and horizontally open channels of communication'*,
- *'creativity is fostered, developed and encouraged'*,
- *'firm's structure encourages and promotes innovation and risk taking'*,
- *'firm's culture allows for getting things done even if this means disregarding formal procedures'*
- *'requirements of situation and each employee's personality define proper on-job behaviour'*.

'Entrepreneurial' firms rated all these statements significantly higher than the 'conservative' firms.

		'Entrepreneur'	'Conservative'
Q_8_A	• There are few hierarchical layers in the firm	3,81	3,54 X
Q_8_B	• The organisational structure includes project teams, matrix structures or special task forces	3,93 X	3,47
Q_8_C	• Decision-making powers are decentralised	3,63	3,43
Q_8_D	• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures	3,31	3,11
Q_8_E	• There are vertically and horizontally open channels of communication	4,09 X	3,73 X
Q_8_F	• Financial and operating information is shared and flow quite freely throughout the firm	3,28	3,02
Q_8_G	• Creativity is fostered, developed and encouraged	4,09 X	3,61 X
Q_8_H	• My firm's structure encourages and promotes innovation and risk taking	3,76	3,05
Q_8_I	• My firm's culture allows for getting things done even if this means disregarding formal procedures	3,81	3,30
Q_8_J	• The requirements of situation and each employee's personality define proper on-job behaviour	3,66	3,24
Q_8 Avg	• Organisational Structure	3,74	3,35

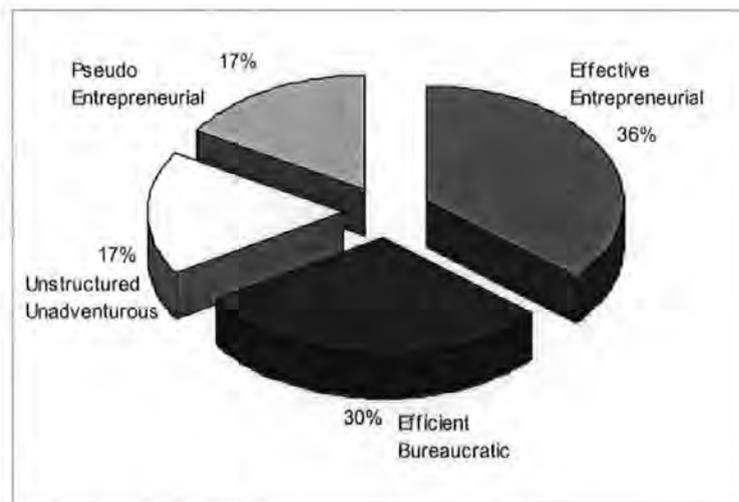
X Top Three

**Table 6.10 Mean values by 'entrepreneurial' and 'conservative' firms regarding the organisational structure**

Furthermore, a stepwise regression analysis was applied in order to analyse if the variation in performance over the next 3 years can be explained in terms of variation in management style and organisational structure. The results

show that the overall regression equation gives evidence for rejecting the hypothesis of no linear relationship between the management style and the organisational structure. The strength of association is measured by  $R^2$  (the square of the multiple correlation coefficient). As the value for  $R^2$  in the partial regression analysis is higher than for the bivariate case it can be suggested that the addition of the second independent variable (organisational structure) makes a contribution in explaining the variation in performance over the next 3 years and thus representing a good indicator.

According to the cross-tabulation of management style and organisational structure, the firms could be categorised in the following groups: 'Effective Entrepreneurial', 'Efficient Bureaucratic', 'Unstructured Unadventurous' and 'Pseudo Entrepreneurial'.



**Figure 6.17 Relationship between organisational structure & management style**

Table 6.4. (Appendix D) summarises the sales performance over the last 3 years and Table 6.5. (Appendix D) the expectation over the next 3 years based on these four groups. With regard to the sales performance over the last 3 years, 83% of the firms belonging to the 'Effective Entrepreneurial' firms recorded increasing sales over the last 3 years compared to 60% of the 'Efficient Bureaucratic', 68% of the 'Unstructured Unadventurous' and 71%

of the 'Pseudo Entrepreneurial'. 96% of the 'Effective Entrepreneurial' firms expect an increase in performance compared to 75% of the 'Efficient Bureaucratic', 97% of the 'Unstructured Unadventurous' and 77% of the 'Pseudo Entrepreneurial' firms. With regard to the expected performance increase of more than 11%, the difference is much higher. 78% of the 'Effective Entrepreneurial' firms expect an increase in performance of more than 11% compared to 30% of the 'Efficient Bureaucratic'. Also the difference is much higher with regard to the recorded performance above 11%. 64% of the 'Effective Entrepreneurial' firms expect an increase in performance of more than 11% compared to 32% of the 'Efficient Bureaucratic'.

In Question 10 the firms were asked to indicate on a 5-point scale, ranging from 'does not apply' (1) to 'strongly applies' (5) the degree to which statements with regard to their business environment apply to their firm. The rating of the eight items were then averaged to get at a single 'business environment' index. The mean value of 3.38 was used as the threshold to divide firms into two groups, i.e. firms being in a hostile or benign environment. Table 6.11 summarises the mean values of the statements related to the business environment.

	Statements	Mean Value	Ranking
Q_10_A	• The business environment is very risky. A 'wrong step' might ruin my firm	2,80	8
Q_10_B	• The economic development has become far less predictable	3,47	4
Q_10_C	• The technological development has become far less predictable	4,31	1 X
Q_10_D	• Strong price competition dominates our business environment	3,03	7
Q_10_E	• Strong quality competition dominates our business environment	3,55	3 X
Q_10_F	• The rate of innovation dramatically increases	3,68	2 X
Q_10_G	• Market activities of our competitors have become far less predictable	3,04	6
Q_10_H	• The customer behaviour has become far less predictable	3,18	5
<b>Q_10 Avg</b>	• <b>Business Environment</b>	<b>3,38</b>	

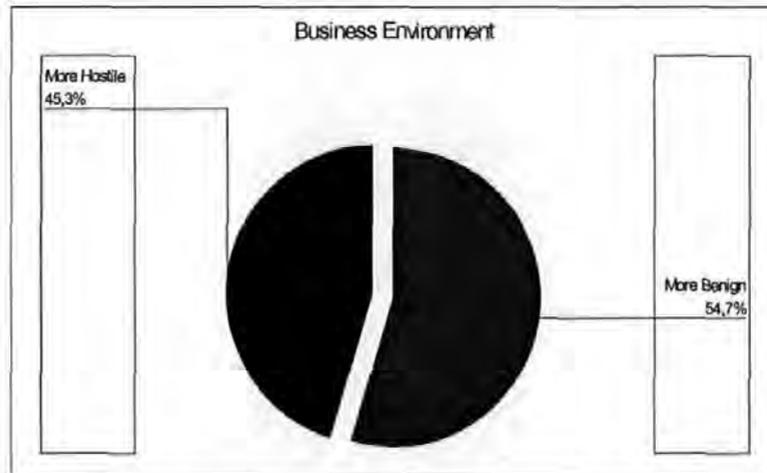
X Top Three

**Table 6.11 Mean Values for the Business Environment (Question 10)**

86% of the firms stated that the item *'technological development has become far less predictable'* applies to their firm and 66% stated that the *'the rate of innovation dramatically increases'* applies. The majority with 55% also stated that the items *'strong quality competition dominates our business environment'* and *'economic development has become far less predictable'* applies. 31% of the firms indicated that *'market activities of competitors have become far less predictable'* applies and 38% indicated that *'the customer behaviour has become far less predictable'*. Only 27% stated that the statement *'the business environment is very risky. A wrong step might ruin my firm'* applies and 34% stated that the statement *'strong price competition dominates our business environment'* applies.

Figure 6.20. (Appendix B) shows the mean values in a 'rosette' graph. The averaged scale has a mean value of 3.38, a range of 1.6 and 4.9, a Std.Dev. of 0.5, and an inter-item reliability coefficient of 0.72. From the Boxplot (Figure 6.12., Appendix B) it is apparent that the majority of the answers are distributed between 3.0 (25-percentile) and 3.8 (75-percentile). According to

the observation (Figure 6.18) 55% of the firms can be classified as facing a benign environment.



**Figure 6.18 Business Environment**

A hypothesis testing was performed assuming the null-hypothesis of no difference between the two business environment groups with regard to the statements by using the MANOVA technique. At the significance level of 5%, there was evidence against the null-hypothesis of no difference between the groups. Looking at the mean values of the single items it becomes apparent that firms facing a hostile environment rate all items higher (Table 6.12).

		'Hostile'	'Benign'
Q_10_A	• The business environment is very risky. A 'wrong step' might ruin my firm	3,11	2,53
Q_10_B	• The economic development has become far less predictable	4,02 X	3,02
Q_10_C	• The technological development has become far less predictable	4,55 X	4,11 X
Q_10_D	• Strong price competition dominates our business environment	3,67	2,50
Q_10_E	• Strong quality competition dominates our business environment	3,96	3,22 X
Q_10_F	• The rate of innovation dramatically increases	4,19 X	3,27 X
Q_10_G	• Market activities of our competitors have become far less predictable	3,58	2,59
Q_10_H	• The customer behaviour has become far less predictable	3,75	2,72
Q_10 Avg	• Business Environment	3,85	2,99

X Top Three

**Table 6.12 Mean values by Firms operating in 'hostile' and 'benign' environments**

The assessments of the business environment differentiate among the industries (Figure 6.19., Appendix B). Table 6.3. (Appendix D) illustrates that the mean values range between 2.86 and 3.70, indicating that the metal production & processing industry is in the most hostile environment with 3.70 followed by the wood, paper, printing industry. The energy, water supply-, and coal mining industry faces a quite benign environment with a mean of 2.86. The total breakdown of mean values of each single item with regard to the business environment is given in Table 6.3. (Appendix D). Figure 6.19 summarises the classification of firms facing a benign or hostile environment by industry (for detailed figures see Table 6.1. Appendix D).

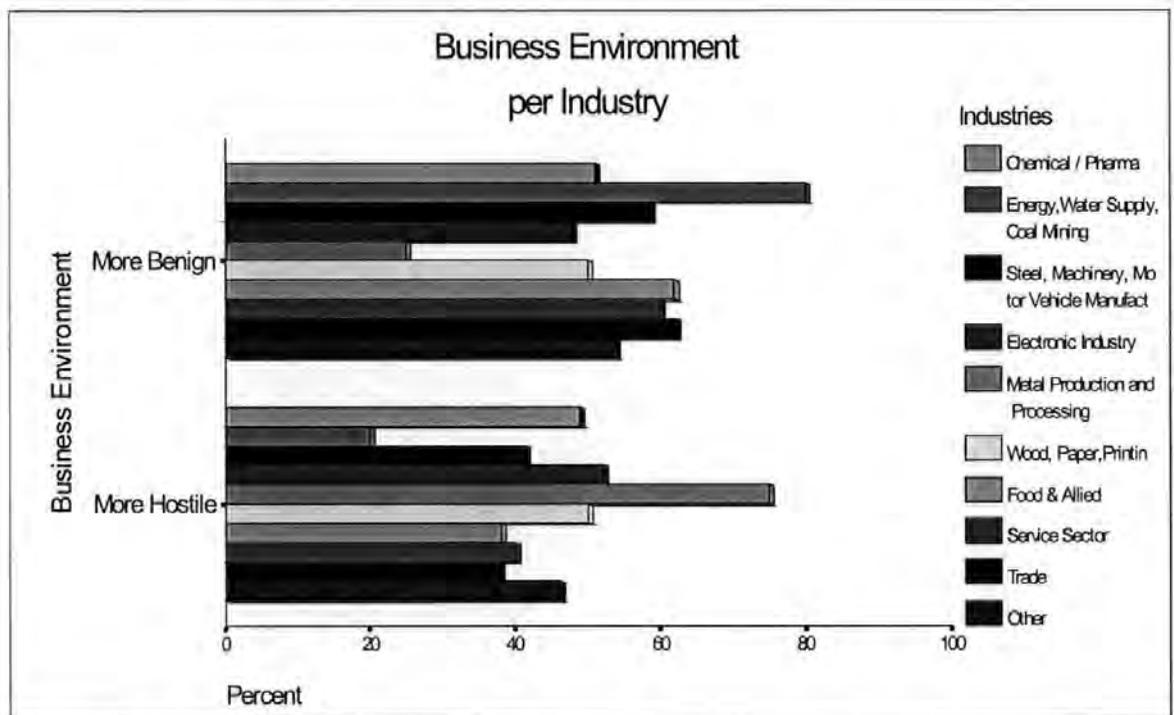


Figure 6.19 Business Environment per Industry

The null-hypothesis that there is no difference between the groups of industries with regard to their assessment of the business environment has been carried out. There was evidence against the null-hypothesis. Furthermore, a MANOVA test has been executed in order to test the null-hypothesis that there is no difference between the groups of industries across multiple dependent variables. The result, with Wilks' lambda value well below

0.05, shows that there is evidence against  $H_0$ . Statistically significant differences between the groups could be validated for three statements. 66% of the firms belonging to the steel, machinery, motor vehicle manufacturing industry and the electronic industry stated that the statement '*technological development has become far less predictable*' strongly applies to their business environment compared to 10% of the energy, water supply, coal mining industry. The chemical/pharma industry stated with 30% that this statement strongly applies to their business environment. 40% of the electronic industry indicated that the statement '*the rate of innovation dramatically increases*' strongly applies followed by the metal production & processing industry. 30% of the energy, water supply, coal mining industry stated that this does scarcely apply to their industry. 25% of the metal production & processing industry stated that the statement '*customer behaviour has become far less predictable*' applies strongly followed by the trade industry. 50% of the firms belonging to the service industry stated that it scarcely applies and 60% of the energy, water supply-, and coal mining industry.

There was no evidence against the null hypothesis of no association between the size of firms and their assessment of the business environment. The cross-tabulation of firms being in hostile or benign environment and the performance over the last 3 years (Figure 6.21., Appendix B) shows that 72% of firms facing a benign and hostile environment registered an increase in performance over the last 3 years. No association between firms being in hostile or benign environment and their recorded performance could be validated.

A valid chi-square, testing the relationship between the business environment and the degree to which a firm is international, could not be carried out as more than 20% of the cells had a frequency less than 5. However, the significance level suggests an association. The data indicates that the more

international a firm is the more it faces a hostile environment (Figure 6.20 and Table 6.13). Firms operating in the national & EC market indicate the highest mean value.

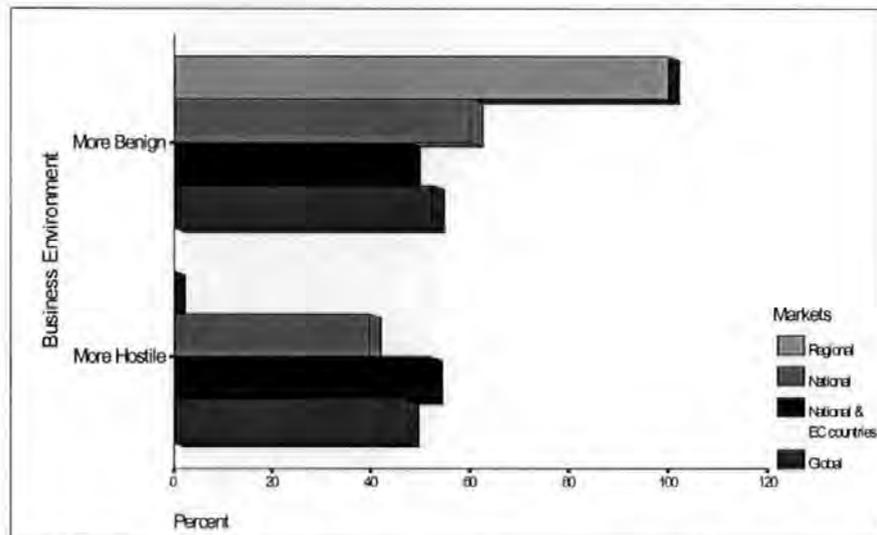


Figure 6.20 Business environment by degree of internationalisation

		'Regional'	'National'	'National & EC'	Global
Q_10_A	• The business environment is very risky. A 'wrong step' might ruin my firm	2,71	2,78	2,91	2,73
Q_10_B	• The economic development has become far less predictable	3,43	3,55	3,61	3,30
Q_10_C	• The technological development has become far less predictable	3,71	4,26	4,36	4,36
Q_10_D	• Strong price competition dominates our business environment	2,14	2,98	3,09	3,09
Q_10_E	• Strong quality competition dominates our business environment	2,71	3,36	3,54	3,78
Q_10_F	• The rate of innovation dramatically increases	2,57	3,31	3,78	3,97
Q_10_G	• Market activities of our competitors have become far less predictable	2,71	3,07	3,10	2,99
Q_10_H	• The customer behaviour has become far less predictable	2,71	3,22	3,28	3,11
Q_10 Avg		2,84	3,32	3,46	3,42

X Top Three

Table 6.13 Mean values regarding the business environment by markets

The ANOVA test showed evidence for rejecting  $H_0$  that there is no significant difference between the market groups with regard to the business environment and also a difference between the groups across the multiple statements, by using the MANOVA technique, could be validated, with Wilks

Lambda below 0.05. There were only two statements where the difference appeared to be statistically significant among the groups. 50% of the global operating firms indicated that the statement '*strong quality competition dominates the business environment*' applies and a mean value of 3.78 could be observed compared to 35% of national operating firm with a mean value of 3.36 or 43% of regional operating firm stating that it scarcely applies with a mean value of 2.71. The statement '*the rate of innovation dramatically increases*' was stated by 26% of the global operating firms that it strongly applies indicating a mean value of 3.97, whereas only 9% of the national operating firms said that it strongly applies. 29% of the regional operating firms stated that it does not apply to their business environment with an observed mean value of 2.57.

The cross-tabulation of firms being in a benign or hostile environment and the expectations in performance over the next 3 years indicated that 45% of the firms expecting an increase in performance face a hostile environment compared to 33% of the firms expecting a decrease in performance (Figure 6.22., Appendix B). However, 88% of the firms in a benign environment and 86% of firms in a hostile environment expect an increase in sales (Figure 6.23., Appendix B). No valid chi-square test could be carried out. The null-hypothesis that there is a difference between the 'groups of business environment' with regard to the expectations in performance could not be rejected.

The cross-tabulation using the chi-square indicates no association between the organisational structure and the business environment. 55% of the firms operating in a benign environment are classified as having an organic structure compared to 52% of the firms operating in a hostile environment (Figure 6.24., Appendix B). The null-hypothesis of no difference between the business

environment groups concerning the organisational structure could also not be rejected. The mean values show only slight differences (Table 6.14).

		'Hostile'	'Benign'
Q_8_A	• There are few hierarchical layers in the firm	3,73	3,65
Q_8_B	• The organisational structure includes project teams, matrix structures or special task forces	3,77 X	3,66 X
Q_8_C	• Decision-making powers are decentralised	3,57	3,51
Q_8_D	• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures	3,17	3,26
Q_8_E	• There are vertically and horizontally open channels of communication	3,92 X	3,92 X
Q_8_F	• Financial and operating information is shared and flow quite freely throughout the firm	3,14	3,17
Q_8_G	• Creativity is fostered, developed and encouraged	3,91 X	3,83 X
Q_8_H	• My firm's structure encourages and promotes innovation and risk taking	3,50	3,36
Q_8_I	• My firm's culture allows for getting things done even if this means disregarding formal procedures	3,67	3,49
Q_8_J	• The requirements of situation and each employee's personality define proper on-job behaviour	3,50	3,43
Q_8 Avg	• Organisational Structure	3,59	3,53

X Top Three

**Table 6.14 Mean values by firms belonging to 'hostile' or 'benign environment with regard to the organisational structure**

The results indicate that the majority of firms facing a hostile environment adopt an entrepreneurial style with a slight majority of firms facing benign environments adopting a conservative style (Figure 6.25., Appendix B).

The cross-tabulation of the management style and the business environment gives no evidence that there is an association. However, the correlation analysis, using the Product Moment Correlation, indicated that at a significance value of 0.001, a significant relationship between management style and business environment exists. The positive sign implies a positive relationship, indicating that a higher degree of hostility results in a higher degree of 'entrepreneurial' management style. There is also strong evidence for rejecting the null-hypothesis of no difference between the groups of firms in hostile vs. benign environment with regard to the management style using the ANOVA test. Furthermore, firms in a hostile environment rated their

management style to be more entrepreneurial than firms in a benign environment (Table 6.15). Subsequently, a MANOVA testing has been performed. The null-hypothesis has to be rejected for the following statements:-

- *'my firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc.'*,
- *'strategic objectives are based on innovation, new products and processes, opportunities and risk taking'*
- *'my firm has a strong emphasis on R&D, technological leadership and innovations'*.

All three statements have been rated higher or to be more applicable for firms in a hostile environment than for firms in a benign environment.

		'Hostile'	'Benign'
Q_9_A	• The general preparedness to take risks is seen as a key to growth and survival	3,26	3,15
Q_9_B	• My firm pursues a policy of growth primarily through external financing	1,97	1,91
Q_9_C	• My firm has a proclivity for risk-projects aiming at achieving high returns	2,15	1,98
Q_9_D	• My firm pursues the objective to stabilise current businesses, additionally attempting to identify new market opportunities	4,13	3,92
Q_9_E	• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	3,66 X	3,43 X
Q_9_F	• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	3,44	3,11
Q_9_G	• My firm typically initiates actions forcing competitors to respond to	3,36	3,16
Q_9_H	• My firm actively assesses external information	3,74	3,47
Q_9_I	• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	3,60 X	3,38 X
Q_9_J	• My firm has a strong emphasis on R&D, technological leadership and innovations	3,89 X	3,33 X
Q_9 Avg	• Management Style	3,34	3,08

X Top Three excluding Statements B / D / H

**Table 6.15 Mean values by firms belonging to 'hostile' or 'benign' environment with regard to the management style**

Table 6.16 indicates that 'higher' performing firms facing a hostile environment rate their management style rather 'entrepreneurial' and their organisational structure rather 'organic' than firms in a benign environment.

<i>Business Environment</i>	<i>Performance over last 3 years</i>	<i>Mean Value for Management Style</i>	<i>Mean Value for Organisational Structure</i>
Hostile	Increasing Sales	3,40	3,64
	Remain unchanged	2,98	3,45
	Decreasing Sales	3,34	3,44
Benign	Increasing Sales	3,17	3,60
	Remain unchanged	3,08	3,57
	Decreasing Sales	2,65	3,19

**Table 6.16 Past performance by Style, Structure & Environment**

Table 6.17 also indicates that firms expecting 'higher' performance and facing a hostile environment rate their management style higher 'entrepreneurial' and their organisational structure higher 'organic' than firms in a benign environment.

<i>Business Environment</i>	<i>Performance over next 3 years</i>	<i>Mean Value for Management Style</i>	<i>Mean Value for Organisational Structure</i>
Hostile	Increasing Sales	3,36	3,62
	Remain unchanged	3,18	3,38
	Decreasing Sales	3,29	3,60
Benign	Increasing Sales	3,13	3,58
	Remain unchanged	2,69	3,13
	Decreasing Sales	2,68	3,10

**Table 6.17 Future performance by Style, Structure & Environment**

Finally the sample could be categorised in the following groups: 'Effective Entrepreneurial', 'Efficient Bureaucratic', 'Unstructured Unadventurous' and 'Pseudo Entrepreneurial' with regard to their business environment (Figure 6.21). The results indicate that 40% of the firms facing a hostile environment are classified as 'effective entrepreneurial' firms and 29% of the firms facing a

benign environment are classified as 'efficient bureaucratic'. Figure 6.26. (Appendix B) shows the proportion of the total sample.

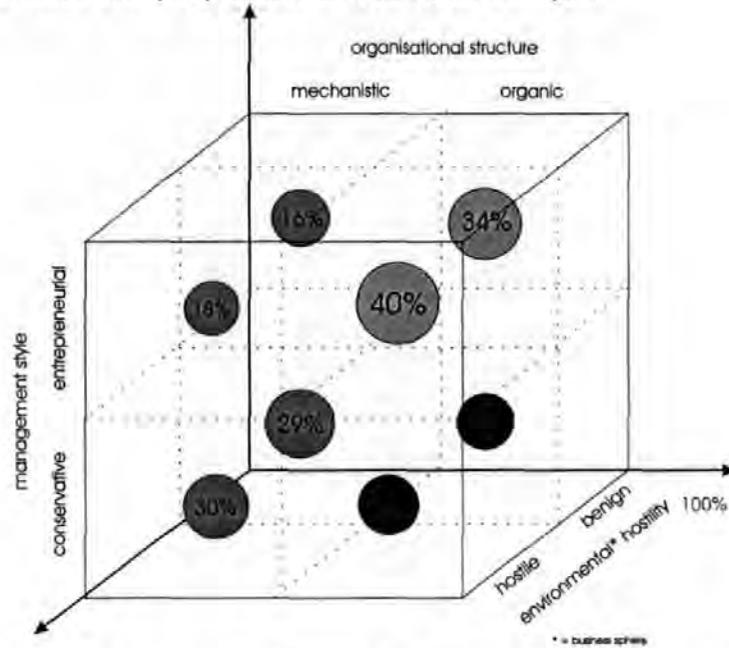


Figure 6.21 Portray "Relationship between Organisational Structure, Management Style and Business Environment" (percentage of single group)

### 6.1.1 The Ecological Issue

In Question 11 the firms were asked to indicate on a 5-point scale, ranging from 'does not apply' (1) to 'strongly applies' (5), the degree to which statements apply to their firm with regard to their ecological business environment. The rating of the six items were then averaged to get at a single 'ecological environment' index. Question 11 (E) has been inverted as a lower degree of application implies a higher hostility. The mean value of 3.39 was used as the threshold to divide firms into two groups, firms being in a hostile and benign ecological environment.

Table 6.18 summarises the mean values of the statements related to the ecological environment.

	Statements	Mean Value	Ranking
Q_11_A	• My firm is increasingly influenced by ecological aspects	3,54	3 X
Q_11_B	• The presence of ecologically oriented competitors is increasing in our market	3,06	5
Q_11_C	• Development of various ecologically oriented technologies has increased	3,36	4
Q_11_D	• The influence of ecological regulations on my firm is increasing	3,76	2 X
Q_11_E	• The preparedness of our customers to pay a higher price for ecologically oriented products or services is seen as quite high	2,11	1 X
Q_11_F	• The demand for ecologically oriented products and processes has increased	2,76	6

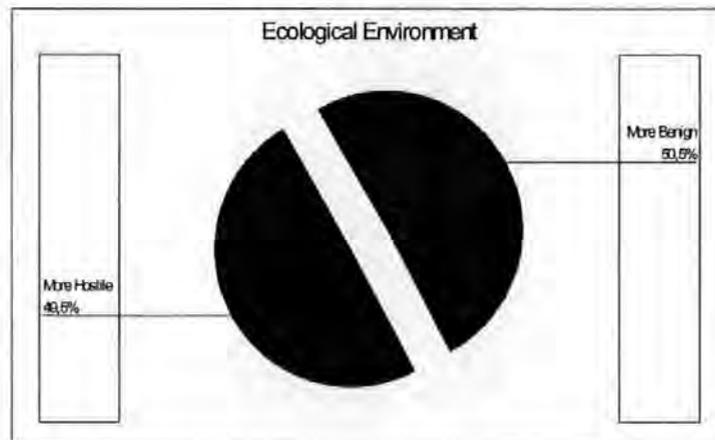
Q_11 Avg.	• Ecological Environment	3,39	
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X Top Three

**Table 6.18 Mean Values for the Ecological Environment (Question 11)**

More than 50% of the firms stated that the items *'influence of ecological regulations on my firm is increasing'*, *'the presence of ecologically oriented competitors is increasing in our market'* and that *'development of various ecologically oriented technologies has increased'* applies. There is no majority of firms in favour of the statement that *'firm is increasingly influenced by ecological aspects'* and that *'the demand for ecologically oriented products and processes has increased'*. However, 69% of the firms stated that *'the preparedness of our customers to pay a higher price for ecologically oriented products or services is seen as quite high'* does not apply or scarcely applies.

The averaged scale has a mean value of 3.39, a range of 1.7 and 5.0, a Std.Dev. of 0.6, and an inter-item reliability coefficient of 0.84. Figure 6.31. (Appendix B) shows the mean values in a 'rosette' graph. From the Boxplot (Figure 6.12., Appendix B) it is apparent that the majority of the answers are to be found between 3.0 (25-percentile) and 3.8 (75-percentile) indicating that the majority lies above the 50-percentile. According to the observation (Figure 6.22) 50% of the firms can be classified as being in a hostile ecological environment.



**Figure 6.22 Ecological Environment**

A hypothesis testing was performed assuming the null-hypothesis of no difference between the two ecological environment groups with regard to the degree of hostility statements by using the MANOVA technique. At the significance level of 5%, there was evidence against the null-hypothesis of no difference between the groups. Looking at the mean values of the single items it becomes apparent that firms facing a hostile 'ecological environment' rate all items higher than firms facing a benign 'ecological environment' (Table 6.19).

		'Hostile'	'Benign'
Q_11_A	• My firm is increasingly influenced by ecological aspects	4,11 X	2,97 X
Q_11_B	• The presence of ecologically oriented competitors is increasing in our market	3,76	2,36
Q_11_C	• Development of various ecologically oriented technologies has increased	4,01 X	2,72 X
Q_11_D	• The influence of ecological regulations on my firm is increasing	4,28 X	3,25 X
Q_11_E	• The preparedness of our customers to pay a higher price for ecologically oriented products or services is seen as quite high	2,29 X	1,93 X
Q_11_F	• The demand for ecologically oriented products and processes has increased	3,29	2,24
Q_11 Avg.	• Ecological Environment	3,86	2,94

X Top Three

**Table 6.19 Mean values by firms operating in 'hostile' and 'benign' ecological environments**

The assessments of the ecological environment differentiate to a lesser extent than the business environment among the industries (Figure 6.27., Appendix

B). The mean values range between 3.03 and 3.57 (Table 6.3.Appendix D), indicating that the metal production & processing industry and the energy, water supply, coal mining industry with a mean value of 3.57 face a high ecological environment hostility followed by the chemical/pharma industry. The service industry faces the lowest ecological environmental hostility with 3.03. The total breakdown of mean values of each single item with regard to the ecological environment is given in Table 6.3. (Appendix D). Figure 6.23 summarises the classification of firms facing a benign or hostile ecological environment by industry (for detailed figures see Table 6.1., Appendix D).

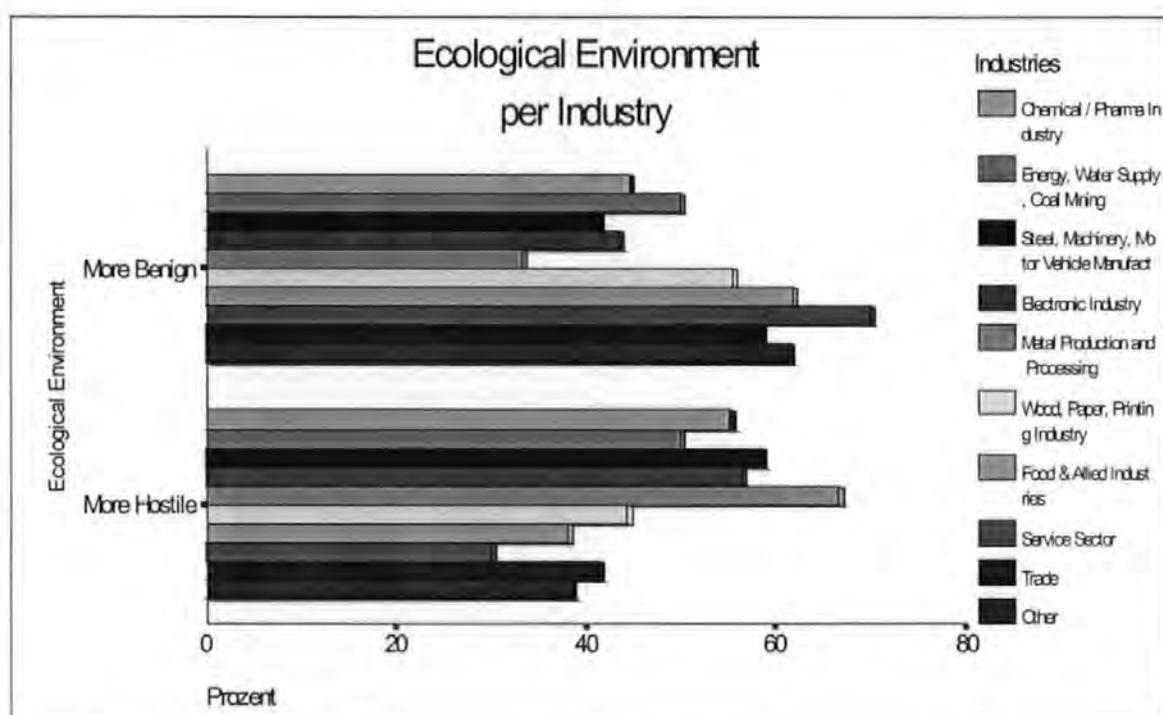


Figure 6.23 Ecological environment by Industry

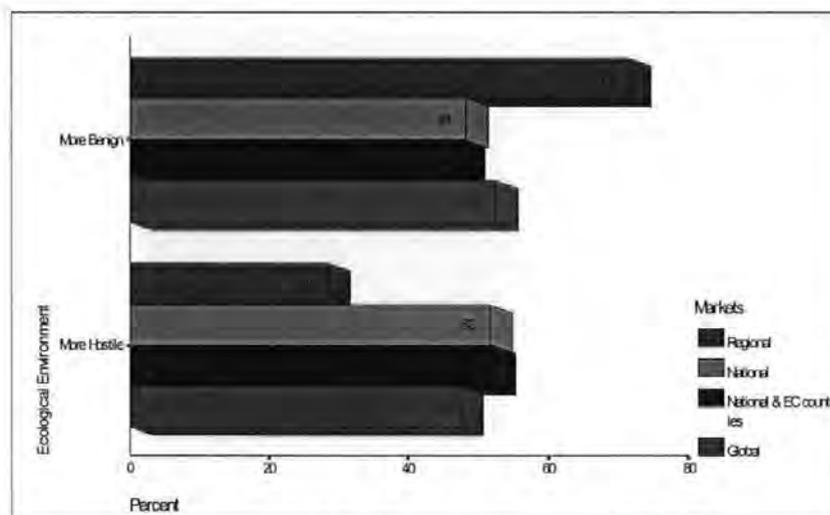
The null-hypothesis that there is no difference between the groups of industries concerning their assessment of the ecological environment could not be rejected. Thus, no significant difference exists among the groups.

The cross-tabulation indicates that 58% of the firms with more than 2,001 employees assess their ecological environment as hostile indicating a mean value of 3.43 compared to 51% of the firms with less than 500 employees with a mean value of 3.45 (Figure 6.28., Appendix B). The chi-square test

showed no association between the size of firm and the ecological environment.

The same test was performed for firms being in a hostile or benign ecological environment and the performance over the last 3 years, showing that 72% of the firms in benign and in hostile ecological environments registered an increase in performance over the last 3 years. No association could be validated. The null-hypothesis of no association between the ecological environment and the recorded performance could not be rejected.

A valid chi-square testing the relationship between the ecological environment and the degree to which a firm is internationally orientated could not be carried out. The cross-tabulation however showed that slightly more than 50% of firms operating within the national and national & EC market face a more hostile ecological environment than the global and regional players (Figure 6.24). The mean values indicate that the national firms rated their ecological environment with 3.46 as more hostile than other firms (Regional = 3.29, National & EC countries = 3.38 and Global = 3.37).



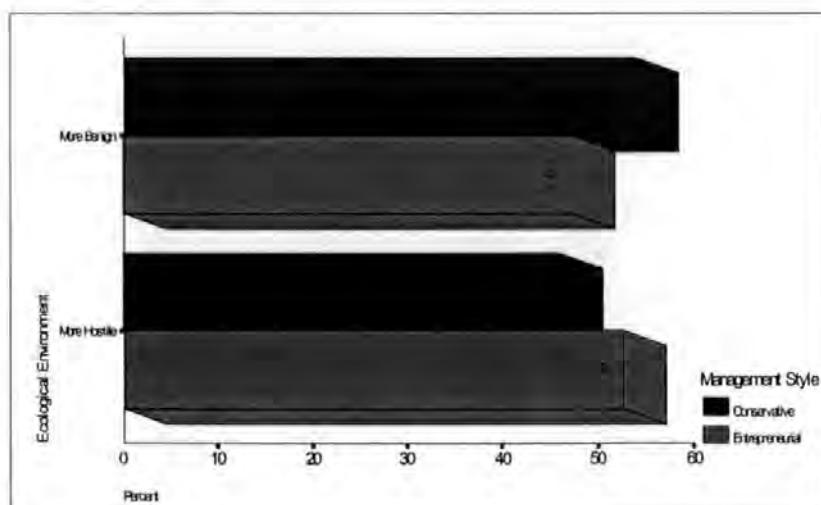
**Figure 6.24 Ecological environment by degree of internationalisation**

No valid chi-square test for the ecological environment and the expected performance could be performed. The results indicate that 89% of the firms

facing a benign ecological environment expect an increase in performance in contrast to 85% of the firms in a hostile ecological environment (Figure 6.29., Appendix B).

Hardly any variances could be identified with regard to the ecological environment and the organisational structure. No evidence could be found for rejecting the null-hypothesis of no association between ecological environment and organisational structure. Firms operating in a benign environment indicated a mean value of 3.54 concerning the organisational structure compared to 3.57 of firms in a hostile environment.

Slightly the same observation could be made by looking at management style and ecological environment. No association could be validated. The results indicate that the majority of firms in hostile ecological environment (56%) pursue an entrepreneurial management style and 51% of the firms facing benign ecological environment pursue a conservative style. Firms facing a hostile ecological environment rated their management style more entrepreneurial, with a mean value of 3.24 compared to 3.15 rated by firms within a benign environment.



**Figure 6.25 Ecological environment by management style**

Furthermore, Figure 6.25 indicates that 53% of the 'entrepreneurial' firms stated that they face a hostile ecological environment and 54% of the

'conservative' firms stated that they face a benign ecological environment. However, there was no evidence for rejecting the null-hypothesis of no differences in the groups of ecological environment with regard to the management style.

The cross-tabulation of the business environment and the ecological environment showed that the 57% of firms facing a hostile business environment also face a hostile ecological environment (observed mean value of 3.46) and 57% facing a benign business environment face also a benign ecological environment, with an observed mean value of 3.34 (Figure 6.30., Appendix B). As the value of the Pearson chi-square test is below 0.05, an association between business environment and ecological environment can be concluded. However, the null-hypothesis of no difference between the two groups of business environment with regard to the ecological environment could not be rejected.

In Question 12 (a) the firms were asked to indicate on a 5-point scale, ranging from 'does not apply' (1) to 'strongly applies' (5) the degree to which statements with regard to the ecological business orientation generally apply to their firm. The rating of the eleven items were then averaged to get at a single 'ecological orientation' index. The statements 9-11 were inverted as a high value implies a more reactive orientation. The mean value of 3.66 was used as the threshold to divide firms into two groups, i.e. firms being proactively and reactively orientated. Table 6.20 summarises the mean values of the statements related to the organisational structure.

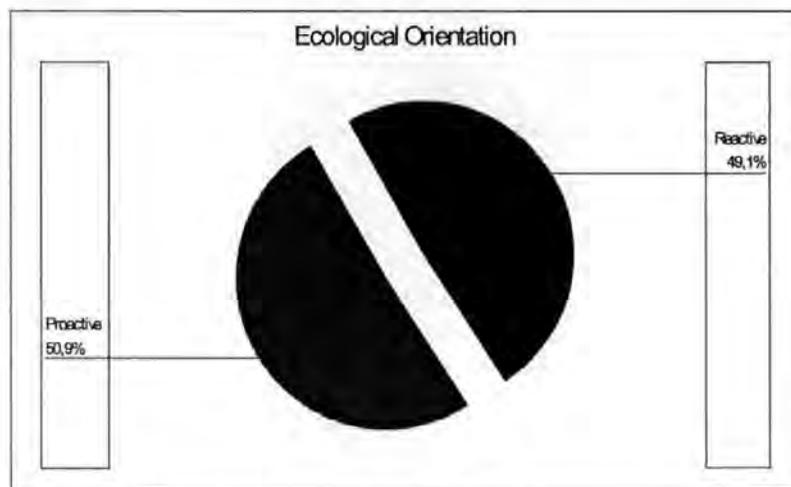
	Statements	Mean Value	Ranking
Q_12.A_1	• Firms face new market opportunities in an ecological sensitive business environment	3,16	7
Q_12.A_2	• New market segments can be developed with ecologically oriented products and procedures	3,04	8
Q_12.A_3	• The ecological aspects should be incorporated into the business' philosophy	4,06	1 X
Q_12.A_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	3,53	5
Q_12.A_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	3,25	6
Q_12.A_6	• Ecological information should actively be incorporated into firm's activities	3,88	3 X
Q_12.A_7	• Ecological investments are seen as preventive measures	3,83	4
Q_12.A_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	3,95	2 X
Q_12.A_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	1,86	10
Q_12.A_10	• Firms should be more oriented to ecologically oriented competitors	2,92	9
Q_12.A_11	• With regard to the environmentalism a resistance strategy is worthwhile	1,67	11
Q_12.A Avg	• Ecological Orientation	3,66	

**Table 6.20 Mean Values for Ecological Orientation (Question 12a)**

80% of the firm stated that the statement '*ecological aspects should be incorporated into the business' philosophy*' applies. 77% stated that '*ecological information should actively be incorporated into firm's activities*' and '*ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms*' applies. Also 70% of the firms stated that '*ecological investments are seen as preventive measures*' and 60% indicated that '*public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders*' applies. However only 40% indicated that '*firms face new market opportunities in an ecological sensitive business environment*' applies. 48% of the firms stated that '*in existing market segments with the ecological impact being regarded as high firms should withdraw from the market*' does not apply and '*with regard to*

*the environmentalism a resistance strategy is worthwhile'* also does not apply for 60% of the firms.

The averaged scale has a mean value of 3.66, a range of 2.1 and 4.8, a Std.Dev. of 0.5, and an inter-item reliability coefficient of 0.82. Figure 6.31. (Appendix B) shows the mean values in a 'rosette' graph. From the Boxplot (Figure 6.12., Appendix B) it is apparent that the majority of the answers are distributed between 3.4 (25-percentile) and 4.0 (75-percentile). Figure 6.26 indicates that 51% of the firms can be classified as being proactively orientated.



**Figure 6.26 Ecological orientation**

A hypothesis testing was performed assuming the null-hypothesis of no difference between the two groups with regard to the ecological orientation statements by using the MANOVA technique. At a significance level of 5%, there was evidence against the null-hypothesis of no difference between the groups. Looking at the mean values of the single items it becomes apparent that firms proactively oriented rate all items higher than the reactively oriented firms (**X** Top Three

Table 6.21).

		'Proactive'	'Reactive'
Q_12.A_1	• Firms face new market opportunities in an ecological sensitive business environment	3,69	2,60
Q_12.A_2	• New market segments can be developed with ecologically oriented products and procedures	3,58	2,47
Q_12.A_3	• The ecological aspects should be incorporated into the business' philosophy	4,58 X	3,52 X
Q_12.A_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	4,09	2,95
Q_12.A_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	3,87	2,62
Q_12.A_6	• Ecological information should actively be incorporated into firm's activities	4,33 X	3,41 X
Q_12.A_7	• Ecological investments are seen as preventive measures	4,24	3,40
Q_12.A_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	4,35 X	3,53 X
Q_12.A_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	1,59	2,14
Q_12.A_10	• Firms should be more oriented to ecologically oriented competitors	3,16	2,66
Q_12.A_11	• With regard to the environmentalism a resistance strategy is worthwhile	1,39	1,96
Q_12:A Avg	• Ecological Orientation	4,06	3,25

X Top Three

**Table 6.21 Mean values of ecological orientation by 'proactive' and 'reactive' firms**

Hardly any differences were observed with regard to the mean values among industries (see Figure 6.32., Appendix B). Table 6.3. (Appendix D) shows that the mean values range between 3.50 and 3.95, indicating that the energy, water supply and coal mining industry show the highest proactive ecological orientation followed by the chemical/pharma industry. The total breakdown of mean values of each single item concerning the ecological orientation is given in Table 6.3. (Appendix D). Figure 6.27 summarises the classification of firms in proactive and reactive orientated firms by industry (for detailed figures see Table 6.1., Appendix D).

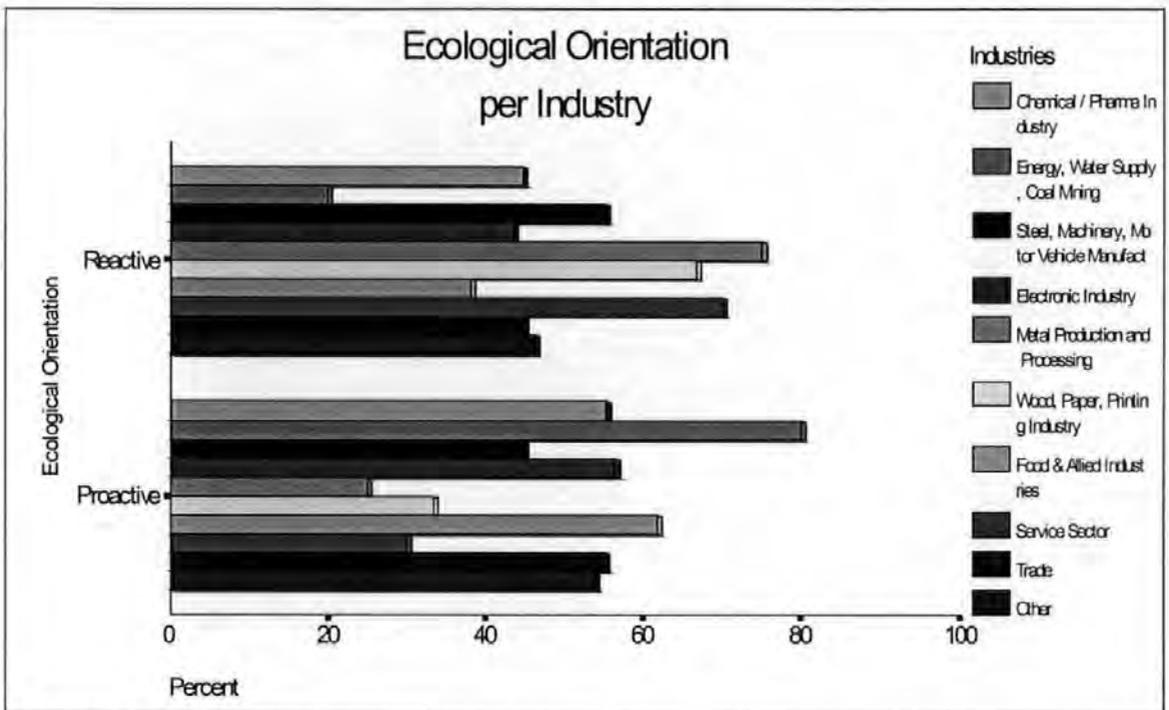
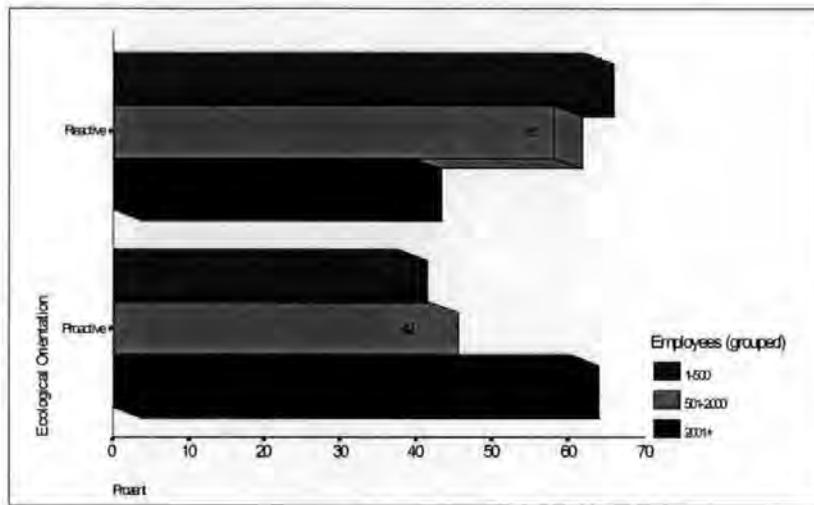


Figure 6.27 Ecological orientation by Industry

The null-hypothesis that there is no difference between the groups of industries concerning their ecological orientation has been carried out. There was no evidence that there is a significant difference between the groups of industries.

With regard to the size of firms and the ecological orientation a valid chi-square value indicated that there is an association. 60% of the firms having more than 20.000 employees show a proactive ecological orientation whereas only 38% of the firms having less than 500 employees indicate a proactive orientation (Figure 6.28).



**Figure 6.28 Ecological orientation by size of firm**

The result of the correlation analysis with a significance level of 0.000 indicates a positive relationship. Thus, the bigger the firms are the more proactively they are orientated with regard to the ecological aspect. Table 6.22 supports the correlation analysis. Firms having less than 500 employees show a mean value of 3.46 compared '501-2.000' employees with a mean value of 3.63 and firms having more than '20.001' employees with a mean value of 3.76 for the ecological orientation.

	1-250	251-500	501-1000	1001-2000	2001-5000	5001-10000	10001-20000	20001+
Q_12.A_1	2,83	2,78	3,09	3,19	3,13	3,24	3,20	3,64
Q_12.A_2	2,93	2,70	3,00	2,90	2,92	3,06	3,04	3,56
Q_12.A_3	3,77 <b>X</b>	3,91	4,00 <b>X</b>	3,95 <b>X</b>	4,00 <b>X</b>	4,18 <b>X</b>	4,36 <b>X</b>	4,31 <b>X</b>
Q_12.A_4	3,23	3,13	3,50	3,48	3,34	3,71	3,84	4,00
Q_12.A_5	3,07	3,04	3,36	3,29	3,11	3,18	3,16	3,72
Q_12.A_6	3,43 <b>X</b>	3,96 <b>X</b>	3,91 <b>X</b>	3,90 <b>X</b>	3,89 <b>X</b>	3,71	4,00	4,17 <b>X</b>
Q_12.A_7	3,47 <b>X</b>	4,13 <b>X</b>	3,73	3,67	3,55	4,00 <b>X</b>	4,24 <b>X</b>	4,03
Q_12.A_8	3,43 <b>X</b>	4,00 <b>X</b>	3,86 <b>X</b>	3,76 <b>X</b>	3,82 <b>X</b>	4,29 <b>X</b>	4,28 <b>X</b>	4,25 <b>X</b>
Q_12.A_9	2,30	1,78	1,82	1,67	2,08	1,88	1,60	1,64
Q_12.A.10	2,70	2,91	3,05	2,90	2,87	2,94	2,56	3,31
Q_12.A_11	2,00	1,61	1,77	1,57	1,84	1,59	1,44	1,44
Q_12.A Avg	3,38	3,58	3,62	3,64	3,54	3,72	3,87	3,93

**X Top Three**

**Table 6.22 Mean values regarding ecological orientation by size of firms**

The ANOVA test also shows evidence for rejecting  $H_0$  that there is no significant difference between the size of firms and the ecological orientation.

The cross-tabulation of performance over the last 3 years and the ecological orientation showed no significant variances. There were no indications that a relationship between ecological orientation and recorded performance exists. 72% of the firms pursuing a proactive ecological orientation recorded an increase in performance and 71% of the reactively orientated firms registered an increase (Figure 6.33., Appendix B).

The observation also showed that the ecological orientation of the firm is quite independent of the generic strategy firms pursue. The chi-square test showed no evidence of association. The majority of firms pursuing a differentiation strategy were proactively oriented with 55% compared to 38% of firms aiming at a specific market and 48% pursuing a cost leadership strategy.

Although no valid chi-square, testing the relationship between the ecological orientation and the degree to which a firm is international could be carried out as more than 20% of the cells had a frequency less than 5. The ANOVA test showed evidence against rejecting  $H_0$  that there is no significant difference between the groups 'degree of internationalisation' and 'ecological orientation'. The data indicates that 55% of the globally operating firms could be classified as being proactively orientated compared to 43% regionally operating firms (Figure 6.29).

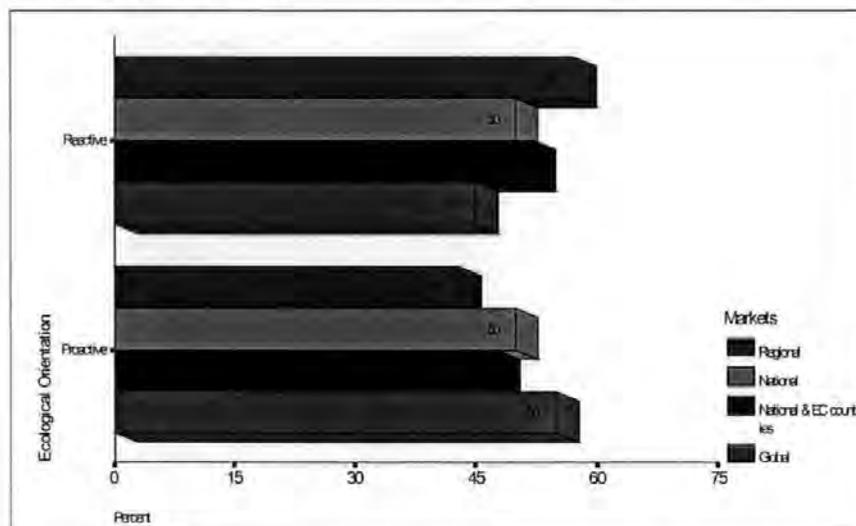


Figure 6.29 Ecological orientation by degree of internationalisation

However, it can be identified that globally operating firms rated their ecological orientation with a mean value of 3.71 higher than other firms (Table 6.23).

		'Regional'	'National'	'National & EC'	Global
Q_12.A_1	• Firms face new market opportunities in an ecological sensitive business environment	2,86	3,36	3,04	3,12
Q_12.A_2	• New market segments can be developed with ecologically oriented products and procedures	2,71	3,14	2,99	3,04
Q_12.A_3	• The ecological aspects should be incorporated into the business' philosophy	3,57 X	4,10 X	4,09 X	4,05 X
Q_12.A_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	3,57 X	3,72	3,46	3,45
Q_12.A_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	3,00	3,22	3,19	3,35
Q_12.A_6	• Ecological information should actively be incorporated into firm's activities	3,29	3,91 X	3,81 X	3,97 X
Q_12.A_7	• Ecological investments are seen as preventive measures	3,71 X	3,76	3,75	3,96
Q_12.A_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	3,57 X	3,95 X	3,88 X	4,04 X
Q_12.A_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	1,29	1,97	1,97	1,75
Q_12.A_10	• Firms should be more oriented to ecologically oriented competitors	2,71	3,02	3,00	2,79
Q_12.A_11	• With regard to the environmentalism a resistance strategy is worthwhile	1,43	1,95	1,55	1,59
Q_12_A Avg		3,53	3,66	3,61	3,71

X Top Three

**Table 6.23 Mean values regarding the ecological orientation by markets**

No evidence could be established for rejecting the null-hypothesis of no relationship between ecological orientation and performance over the next 3 years. A quite similar result could be observed as for the performance over the last 3 years. 84% of the firms pursuing a proactive ecological orientation expect an increase in performance and 89% of the reactively orientated firms expect an increase (Figure 6.34., Appendix B).

Furthermore, looking at the proactively and reactively oriented firms with regard to performance and the size of firms, no significant difference could be observed (Figure 6.37., 6.38., 6.39., 6.40., Appendix B). The same observation resulted in looking among the industries and the performance with regard to their ecological orientation.

The chi-square test of organisational structure and the ecological orientation showed no significant relationship. For both groups of ecological orientation, the majority of the firms are classified as having an organic structure. Also the null-hypothesis of no differences between the two groups of ecological orientation with regard to their organisational structure could not be rejected (Figure 6.35., Appendix B).

57% of the 'entrepreneurial' firms can be classified as having a proactive ecological orientation compared to 44% of the 'conservative' firms (Figure 6.30). The value of the Pearson chi-square test was slightly above 0.05. Thus an association between management style and ecological orientation can be assumed. The result of the correlation analysis suggests that with a significance level of 0.001, indicating a positive sign, a positive relationship. Thus, a higher degree of an 'entrepreneurial' management style results in a greater proactive ecological orientation (see Table 6.24 and Table 6.25). There was also evidence against the null-hypothesis of no difference between the two management styles groups concerning their ecological orientation, by using ANOVA. Subsequently, a MANOVA testing has been performed. At the significance level of 5% there was evidence against the null-hypothesis of no difference between the groups for five statements:-

- *'the ecological aspects should be incorporated into the business' philosophy',*
- *'consistently pursuing an ecological protection concept improves the firm's competitiveness',*
- *'ecological information should actively be incorporated into firm's activities',*
- *'ecological investments are seen as preventive measures',*
- *'ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms'.*

Entrepreneurial firms rated all statements significantly higher than conservative firms (see Table 6.24). A further hypothesis testing was performed assuming the null-hypothesis of no difference between the two ecologically oriented groups with regard to the management style by using the MANOVA technique. There was evidence against the null-hypothesis for three statements '*the general preparedness to take risks is seen as a key to growth and survival*', '*my firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc.*', and '*strategic objectives are based on innovation, new products and processes, opportunities and risk taking*'.

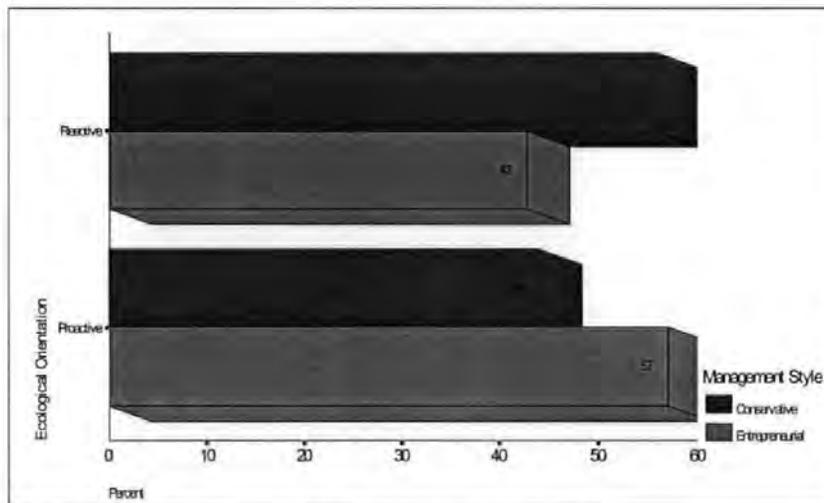


Figure 6.30 Ecological orientation by management style

		'Entrepreneur'	'Conservative'
Q_12.A_1	• Firms face new market opportunities in an ecological sensitive business environment	3,24	3,06
Q_12.A_2	• New market segments can be developed with ecologically oriented products and procedures	3,11	2,96
Q_12.A_3	• The ecological aspects should be incorporated into the business' philosophy	4,20 X	3,91 X
Q_12.A_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	3,64	3,41
Q_12.A_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	3,42	3,07
Q_12.A_6	• Ecological information should actively be incorporated into firm's activities	4,06 X	3,68 X
Q_12.A_7	• Ecological investments are seen as preventive measures	4,04	3,59
Q_12.A_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	4,11 X	3,77 X
Q_12.A_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	1,82	1,91
Q_12.A_10	• Firms should be more oriented to ecologically oriented competitors	2,98	2,84
Q_12.A_11	• With regard to the environmentalism a resistance strategy is worthwhile	1,57	1,78
Q_12:A Avg	• Ecological Orientation	3,77	3,54

X Top Three

**Table 6.24 Mean values regarding ecological orientations by 'entrepreneurial' and 'conservative firms**

		'Proactive'	'Reactive'
Q_9_A	• The general preparedness to take risks is seen as a key to growth and survival	3,35	3,04
Q_9_B	• My firm pursues a policy of growth primarily through external financing	1,88	2,00
Q_9_C	• My firm has a proclivity for risk-projects aiming at achieving high returns	2,06	2,06
Q_9_D	• My firm pursues the objective to stabilise current businesses, additionally attempting to identify new market opportunities	4,06	3,96
Q_9_E	• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	3,64 X	3,42
Q_9_F	• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	3,40	3,12 X
Q_9_G	• My firm typically initiates actions forcing competitors to respond to	3,37	3,13
Q_9_H	• My firm actively assesses external information	3,74	3,43
Q_9_I	• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	3,61 X	3,35 X
Q_9_J	• My firm has a strong emphasis on R&D, technological leadership and innovations	3,60 X	3,56 X
Q_9 Avg	• Management Style	3,29	3,10

X Top Three

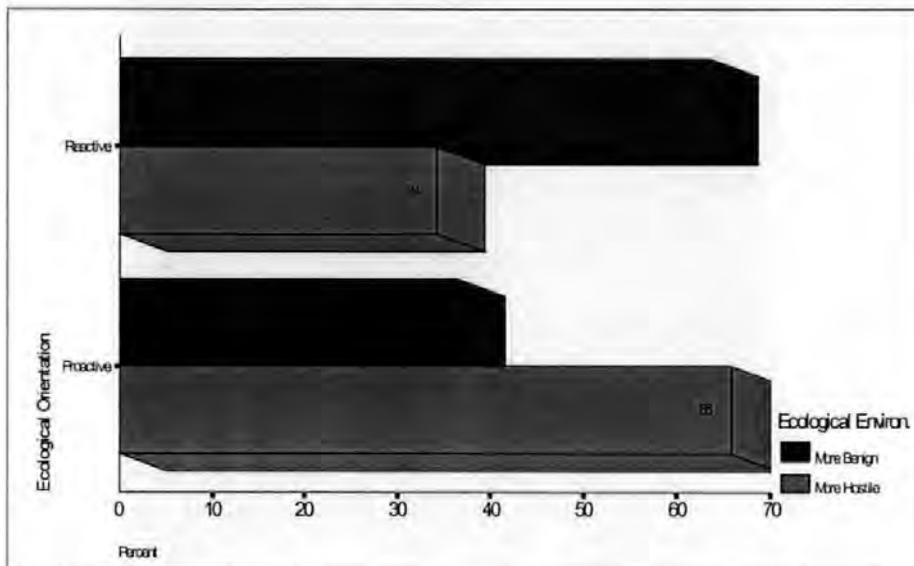
**Table 6.25 Mean values regarding management style by ecological orientation**

Looking at the performance over the last 3 years of environmentally oriented firms with regard to their management style, no statistical significance could

be observed for firms pursuing a reactive ecological approach. However, an association for firms pursuing a proactive ecological approach could be identified. The ANOVA test showed evidence for rejecting  $H_0$  that there is no significant difference between the management style groups with regard to the performance over the last 3 years. Furthermore, the correlation analysis indicates that a higher entrepreneurial degree results in higher increased performance for ecologically proactive firms. 83% of firms adopting an entrepreneurial management style and pursuing a proactive environmental approach recorded an increase in sales compared to 57% of firms pursuing a conservative management style.

With regard to the expected performance a similar tendency can be observed. However, a valid chi-square test could not be carried out for both cases, as more than 20% of the cells had a frequency less than 5. However, for both cases - pursuing a proactive or reactive ecological approach - the ANOVA test showed evidence for rejecting  $H_0$  that there is no significant difference between the management style groups with regard to the performance in the next 3 years. The correlation analysis indicates that a relationship between the management style and performance exists. Firms having an entrepreneurial management style and pursuing a proactive environmental approach expect an increase in sales of 89% compared to firms pursuing a conservative management style with 77% (see also Figure 6.41. and 6.42., Appendix B).

A highly significant relationship could also be established for 'ecological environment' and 'ecological orientation'. The cross tabulation indicates that 66% of the firms facing a hostile ecological environment pursue a proactive ecological orientation compared to 64% of firms facing a benign ecological environment pursue a more reactive ecological approach (Figure 6.31).



**Figure 6.31 Ecological orientation by ecological environment**

From the correlation analysis which indicates a significant relationship and a positive sign implying that with increasing hostility of the ecological environment the proactiveness of firms increases (Table 6.26). There is also evidence for rejecting the null-hypothesis of no difference between the groups of ecological environment with regard to the ecological orientation. Subsequently a MANOVA testing has been performed in order to test the null-hypothesis of no difference between the two ecological environment groups across multiple dependent variables (ecological orientation). The null-hypothesis had to be rejected as the significance level was well below 0.05. For nine statements the null-hypothesis could be rejected. The statements for which the null-hypothesis could not be rejected were *'in existing market segments with the ecological impact being regarded as high firms should withdraw from the market'* and *'with regard to the environmentalism a resistance strategy is worthwhile'* both statements were quite similarly rated.

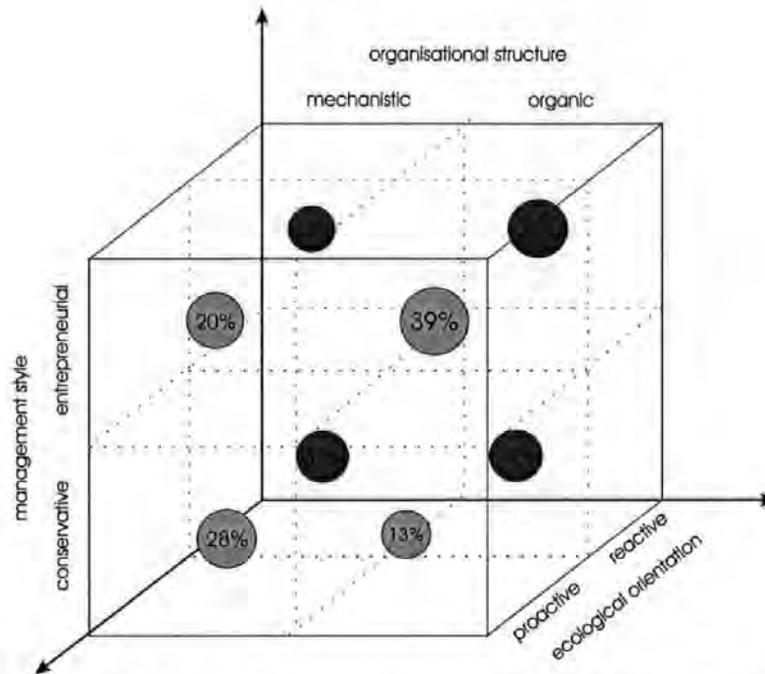
		'Hostile'	'Benign'
Q_12.A_1	• Firms face new market opportunities in an ecological sensitive business environment	3,55	2,77
Q_12.A_2	• New market segments can be developed with ecologically oriented products and procedures	3,37	2,71
Q_12.A_3	• The ecological aspects should be incorporated into the business' philosophy	4,37 X	3,76 X
Q_12.A_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	3,85	3,22
Q_12.A_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	3,63	2,89
Q_12.A_6	• Ecological information should actively be incorporated into firm's activities	4,10 X	3,67 X
Q_12.A_7	• Ecological investments are seen as preventive measures	4,02	3,64
Q_12.A_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	4,16 X	3,74 X
Q_12.A_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	1,89	1,84
Q_12.A_10	• Firms should be more oriented to ecologically oriented competitors	3,32	2,51
Q_12.A_11	• With regard to the environmentalism a resistance strategy is worthwhile	1,63	1,71
Q_12:A Avg	• Ecological Orientation	3,84	3,49

X Top Three

**Table 6.26 Mean values regarding ecological orientation by 'hostile' and 'benign' ecological environment**

Finally the sample could be categorised in the following groups: 'Effective Entrepreneurial', 'Efficient Bureaucratic', 'Unstructured Unadventurous' and 'Pseudo Entrepreneurial' with regard to their ecological orientation (Figure 6.32).

The data indicates that 39% of the firms pursuing a proactive ecological approach can be classified as being effective entrepreneurial. Figure 6.36.B shows the percentages of the total sample indicating that 20% of the firms are effectively entrepreneurial pursuing a proactive ecological approach.



**Figure 6.32** Portray "Relationship between Organisational Structure, Management Style and Ecological Orientation" (percentage of single group)

In Question 12 (b) the firms were asked to indicate if they already react concerning the statements of ecological orientation on the scale 'today', 'concretely planned' and 'not planned'. Figure 6.45. (Appendix B) shows the mean values of the statements with regard to the ecological orientation and the related assessment to which extent the firms react. The results show that with a higher mean value of the statements (12a) the percentage of firms which already react 'today' increases. A total breakdown of the individual assessments for the overall sample and by industry is listed in Table 6.2. (Appendix D).

Furthermore, Table 6.27 indicates the percentage of how many of the firms classified as being proactively oriented are already reacting today as regards their ecological orientation and how much of the more reactive orientated firms. The data indicates that proactively ecological oriented firms pursue the majority of statements already today.

	Statements pursued TODAY	Proactive	Reactive
Q_12.B_1	• Firms face new market opportunities in an ecological sensitive business environment	74%	40%
Q_12.B_2	• New market segments can be developed with ecologically oriented products and procedures	67%	32%
Q_12.B_3	• The ecological aspects should be incorporated into the business' philosophy	92%	53%
Q_12.B_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	82%	44%
Q_12.B_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	69%	32%
Q_12.B_6	• Ecological information should actively be incorporated into firm's activities	81%	49%
Q_12.B_7	• Ecological investments are seen as preventive measures	80%	53%
Q_12.B_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	79%	43%
Q_12.B_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	12%	17%
Q_12.B_10	• Firms should be more oriented to ecologically oriented competitors	55%	23%
Q_12.B_11	• With regard to the environmentalism a resistance strategy is worthwhile	13%	10%

**Table 6.27 Percentage of 'proactive' and 'reactive' firms reacting today**

Furthermore, Table 6.28 indicates the percentage of how many of the firms being classified as 'entrepreneurial' are already reacting today compared to 'conservative' firms. The results indicate that a higher percentage of 'entrepreneurial' firms react already today compared to 'conservative' firms.

	Statements pursued TODAY	'Entrepreneur'	'Conservative'
Q_12.B_1	• Firms face new market opportunities in an ecological sensitive business environment	64%	50%
Q_12.B_2	• New market segments can be developed with ecologically oriented products and procedures	58%	40%
Q_12.B_3	• The ecological aspects should be incorporated into the business' philosophy	77%	67%
Q_12.B_4	• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	68%	59%
Q_12.B_5	• Consistently pursuing an ecological protection concept improves the firm's competitiveness	62%	38%
Q_12.B_6	• Ecological information should actively be incorporated into firm's activities	73%	56%
Q_12.B_7	• Ecological investments are seen as preventive measures	76%	56%
Q_12.B_8	• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	68%	54%
Q_12.B_9	• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	16%	13%
Q_12.B_10	• Firms should be more oriented to ecologically oriented competitors	46%	31%
Q_12.B_11	• With regard to the environmentalism a resistance strategy is worthwhile	13%	10%

**Table 6.28 Percentage of 'entrepreneurial' and 'conservative' firms reacting today**

### 6.1.2 Executive Summary

The aim of this sub-chapter is to summarise the major (statistically) significant statements, which are also summarised in Table. 6.28 with regard to their statistical results.

#### **Organisational Structure**

- The majority of firms (54%) can be classified as having organic structures.
- An association between the size of firms and their organisational structure can be concluded. The majority of firms with '1-250' employees have a mechanistic structure compared to 33% of firms with '20001+' .
- An association between the organisational structure and the performance over the last 3 years can be identified. Firms with a higher degree of organic structures recorded an increased performance.
- Firms with a higher degree of organic structures result in increasing expectations of performance for the next 3 years.

#### **Management Style**

- The majority of firms (53%) can be classified as pursuing an entrepreneurial management style.
- An association between the size of the firm and its management style can be identified. Bigger sized firms rate their entrepreneurial scale higher.
- A more entrepreneurial management style results in higher increased performance over the last 3 years.
- More internationally operating firms assess their degree of entrepreneurial management higher than e.g. regional operating firms.

- A higher degree of entrepreneurial management style results in higher expectations of performance for the next 3 years.
- A significant correlation between management style and organisational structure can be identified. A higher degree of entrepreneurial management style results in a higher degree of organicity.
- 36% of the firms can be classified as 'Effective Entrepreneurial' followed by 30% 'Efficient Bureaucratic'.
- The 'Effective Entrepreneurial' firms recorded the highest performance and expect the highest performance.

### **Business Environment**

- The majority of the firms (55%) can be classified as facing a benign environment.
- More internationally operating firms assess their business environment hostility to be higher than e.g. regional operating firms.
- A significant correlation between management style and business environment structure can be identified. A higher degree of business environment hostility style results in a higher degree of entrepreneurial management.
- 'Higher' performing firms facing a hostile environment rate their degree of entrepreneurial management style higher than firms facing a benign environment.
- 40% of the firms facing a hostile environment can be classified as 'Effective Entrepreneurial' firms followed by 'Efficient Bureaucratic' firms with 30%.

### **Ecological Environment**

- 50% of the firms face a hostile ecological environment.

- An association between business environment and ecological environment can be identified. The majority of firms facing a hostile business environment assess their ecological environment as hostile.
- The majority of entrepreneurial firms stated that they face a hostile ecological environment and the majority of conservative firms stated that they face a benign ecological environment

### **Ecological Orientation**

- A slight majority of firms can be classified as being proactively orientated.
- A significant correlation between the size of the firm and the ecological orientation can be identified. Bigger sized firms rate their degree of proactivity higher.
- A higher degree of entrepreneurial management style results in a higher degree of proactivity with regard to the ecological behaviour.
- No statistical significance could be observed, however, it can be assumed that entrepreneurial firms pursuing a proactive approach perform better.
- With an increasing hostility of the ecological environment, the proactiveness of firms increases.
- Firms classified as being proactively orientated rate their 'today's' activity higher than reactive orientated firms.
- 39% of the proactive orientated firms can be classified as 'Effective Entrepreneurial' firms followed by 'Efficient Bureaucratic' firms with 28%.

	Q1 Industry	Q2 Employ- ees	Q3 Custom- er	Q4 Sales past	Q5 Strategic Posture	Q6 Market	Q7 Sales future	Q8 Organi- sation	Q9 Manag- ement	Q10 Business Environ.	Q11 Eco- Environ.	Q12 Eco- orient.
Q1 Industry										$H_0$		
Q2 Employees				✓				✓ $H_0$	✓ $H_0$			✓ $C_{orr} H_0$
Q3 Customer												
Q4 Sales past						✓ $H_0$		✓ $C_{orr} H_0$	✓ $C_{orr} H_0$			
Q5 Strategic Posture												
Q6 Market							✓ $H_0$		✓ $C_{orr} H_0$	✓ $H_0$		
Q7 Sales future								✓ $C_{orr} H_0$	✓ $C_{orr} H_0$			
Q8 Organisation								$H_0$	✓ $C_{orr} H_0$			
Q9 Management									$H_0$	$C_{orr} H_0$		✓ $C_{orr} H_0$
Q10 Business Environ.										$H_0$	✓	
Q11 Eco Environ.											$H_0$	✓ $C_{orr} H_0$
Q12 Eco-orientation												$H_0$

**Legend:** ✓ = Relationship (valid chi-square)      $H_0$  = Null-hypothesis could be rejected      $C_{orr}$  = significant Correlation

Table 6.29 Summary of statistically significant results

## **6.2 Results of the interviews - Case Study**

The questionnaire employed in the first phase indicates that a higher entrepreneurial management style results in a more proactive ecological orientation of a firm.

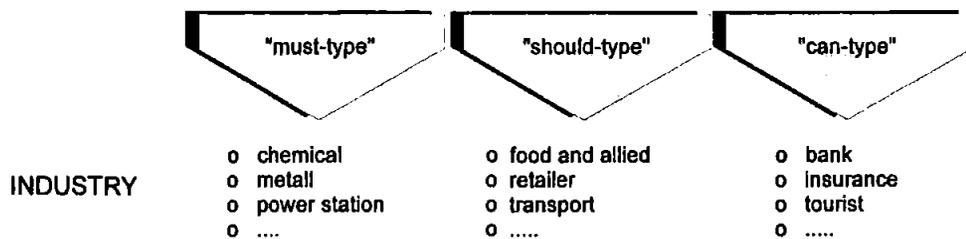
As stated by Malhotra (1993) a case study approach allows a comprehensive description and analysis of a situation. This case study approach aims to clarify the nature of response, identify the environmental activities pursued and the degree to which firms integrate the ecological issue into their business. A further objective is to discover and show any differences in the ecological performance between the firms and if they can be explained in the way firms manage their business, looking at the entrepreneurial and organicity dimension. Furthermore, it will be aimed to validate the results of the first research phase. This case study research is based on 10 cases within the food & allied industry.

However, some shortcomings of case study research should be mentioned. Interpretations resulting from case study research are judgmental and subject to error. Furthermore, the results should be considered suggestive rather than conclusive.

It has to be pointed out that product specific issues, which are already performed due to food quality requirements like food processing, handling, distribution and hygiene regulations, will not be covered in this research. There will no attention be paid to measures due to food regulations, which may go hand in hand with the ecological issue.

## 6.2.1 Food & Allied Industry

Firms in the food & allied industry do not necessarily belong to the producing sector of environmentally damaging products and materials or employ environmentally harmful production processes or substances like the chemical industry. However, it can be concluded that the firms' business behaviour have an impact on the ecology. Figure 6.33 outlines the necessity of environmental activities quite well.



adopted with alterations from Manager Magazin (1991)

**Figure 6.33 Types of industries**

The data of the first survey indicate that 38% of the firms in the food & allied industry assess their ecological environment as hostile. Interestingly 62% of the firms could be classified as pursuing a proactive ecological orientation. The statements *'my firm is increasingly influenced by ecological aspects'* and *'the influence of ecological regulations on my firm is increasing'* were scored highest by the firms in the food & allied industry. The preparedness of the customers to pay a higher price for ecologically oriented products is rated very low compared to other industries. This is also supported by the interviews, which indicate that the consumer does not sufficiently honour the firms' environmental effort.

A trend towards more healthy food has not at least become a question due to the 'mad-cow-disease' discussion. A food revolution is noticed to be triggered by two different age groups. The post-war generation which wants to live more healthy for their remaining years and the today's youth generation where

the 20-30 year-old turn away from fast-food and grew up with ecological issues, increasingly discover the advantages of „clean food“ (BAG Handelsmagazin 1997). Therefore, it can be argued that the food & allied industry will increasingly come under pressure.

The governmental regulation on the circular flow of packaging material had the greatest impact on firms' decision on environmental activities. For each product, licences have to be paid to the 'Duales System' (a recycling concept in Germany) by the firms in order to display the "Grüner Punkt" ("green dot") on their products. Due to this regulation firms, especially in the food & allied industry, have to pay an enormous sum of money to the 'Duales System'. However, this has fostered creativity with regard to the packaging material, as the licence to be paid depends on the volume and weight of the packaging. Consequently this has triggered off ideas of how high volumes of packaging material can be avoided already at the beginning of the process.

A noticeable shift towards a more comprehensive environmental approach and a trend to increasingly approaching the Eco-Audit and ISO 14001 certification can be noticed. Firms argue that sooner or later the requirement for an ISO 14001 certificate will be standard as the ISO 9001 certificate is today.

### **6.2.2 The environmental approach**

Detailed information on firms' environmental activities are outlined in individual cases in Appendix E. Figure 6.34 shows a summary of the environmental activities.

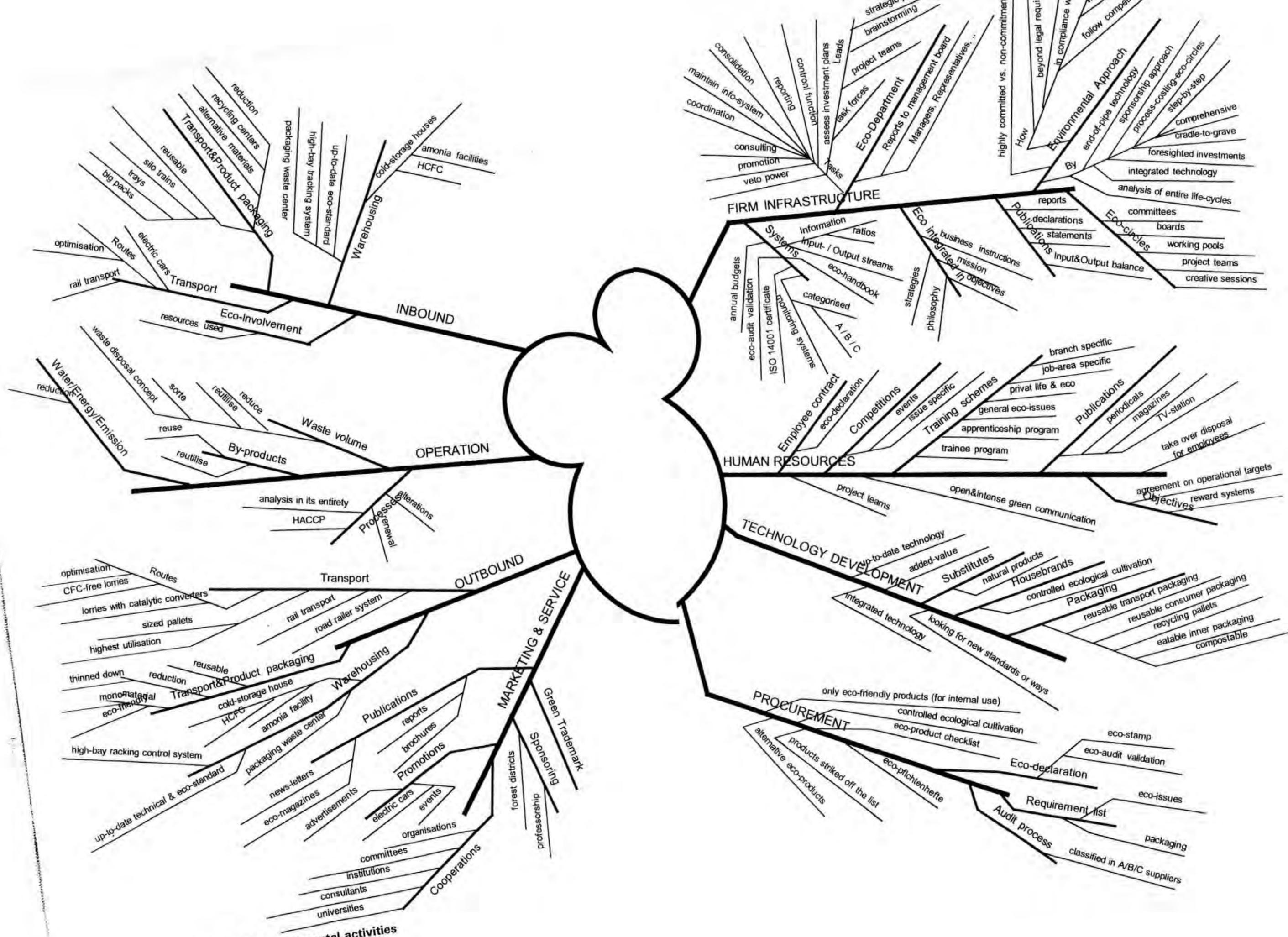


Figure 6.34 Environmental activities

The information gathered during the interviews allows for arguing that the firms can be divided into two groups, firms approaching the ecological issue more proactively by integrating more environmental activities and those which are involved to a lesser extent in environmental issues.

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### Inbound Logistics

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All firms concentrate on reducing the packaging material motivated by the 'DSD' initiative. Further activities like usage of reusable transport packaging and new warehousing systems are partly pursued.

*Some of the interviewed firms go further:*

They extend the usage of reusable packaging to new product groups. Firms search for new or altered reusable packaging in co-operation with institutions. Warehousing processes and systems are altered or new approaches are introduced. Transport routes are continuously optimised or best utilised. Firms look and search beyond their own processes by integrating or influencing suppliers' activities. Co-operation with suppliers is approached in order to help each other and look for new ways. Firms especially look for environmentally friendly partners.

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### Operations

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All firms have partially reduced energy-, water- and waste consumption. By-products have been analysed and are partially identified as reusable. The major objective pursued is to reduce, sort and recycle materials where recognised. Some firms have performed a minimum of alterations of production processes. They even moved certain lines of production to another place in order to avoid ecological visibility.

*Some of the interviewed firms go further:*

Next to the general objective of keeping the waste-, water-, emission- and energy consumption very low, the firms pursue an all-encompassing approach of analysing every stage of the product life-cycle. Every single production aspect is called in question. Firms continuously perform ecological impact assessments. New processes and technical standards have been introduced which further support the comprehensive environmental approach (e.g. increased reuse of by-products). Firms aim at searching for alternative materials and thus reduce the usage of non-acceptable materials. Depending on the environmental impact, several alterations or renewals of the production processes have been conducted. Whenever new production lines or machines are to be introduced, the ecological impact is taken into consideration.

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#### Outbound Logistics

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All firms have optimised transport routes or they decided to leave the responsibility to the haulage contractor. Transport packaging has been reduced. Further feasibility studies are still under development.

*Some of the interviewed firms go further:*

Firms mainly use lorries with oxidation catalytic converters, CFC-free refrigerators. They continuously look for ways to further increase or optimise the utilisation of transports and warehouses by e.g. using alternative pallets. Rewarding systems have been established in order to encourage customers to order ecologically oriented. Firms increasingly shift transports onto the rail. As the Germany railway is expensive and not reliable enough, firms search for further alternatives. Environmentally friendly and modern warehousing systems have been introduced. The waste disposal concepts have been extended, with the objective to achieve a stronger cradle-to-grave approach and further establish partnerships as with regard to the recycling, disposal, etc.

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## Marketing & Sales

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Some firms practically pursue no marketing activities.

*Some of the interviewed firms go further:*

Green trademarks have been established. Firms publish ecological magazines, brochures and advertisements. Several sponsorships are pursued (e.g. ecological professorship, forest districts, etc.). In order to maintain a knowledge transfer, firms co-operate with universities, institutions, committees and ecological organisations, which are supported by the firms. Furthermore, firms arrange events, organise industry working pools and workshops. All these activities are pursued with the objective to further inform and educate the population and thus increase the environmental awareness.

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## Procurement

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All firms' purchasing departments check suppliers' offers with regard to the ecological issue. However, some firms only sporadically perform audits. They are mainly based on purely product procurement issues. All firms have purchasing lists for internal products (to be used in the office) which include mainly environmentally friendly products.

*Some of the interviewed firms go further:*

Firms developed ecological checklists in order to systematically rate the environmentally friendliness of products and suppliers. Packaging and the ecological requirements are in place to which suppliers have to comply to. Environmental audits are continuously performed which are fully integrated into the general audit process grouping suppliers into different classes. Appropriate departments accompany the audits. In some cases, the firms struck products off their procurement lists. Firms look for environmentally friendly suppliers or subcontractors.

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## Technology Development

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Some firms perform purely no activities concerning technological development.

*Some of the interviewed firms go further:*

Firms increasingly develop environmentally friendly house brands based on controlled ecological cultivation. New products resulted from the ecological issue (e.g. eatable packaging, consumer packaging, etc.). Firms search for new ways of handling the ecological issue, e.g. they work on the development of a new reusable transport packaging system and pallets made of recycled material. R&D departments continuously search for ecological substitutes, natural products and alternative packaging. Furthermore, consumer analyses are performed with the objective to discover and develop new opportunities. Research & development task forces have been established to especially concentrate on ecological issues. R&D knowledge is shared with suppliers.

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## Human Resource Management

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All firms offer general ecological and department specific seminars. The firms' newspaper includes ecological articles with the objective to inform employees.

*Some of the interviewed firms go further:*

Job-area specific training related to branches are performed, which have to be attended by all employees. Firms also educate employees how to behave at home. The ecological issue is integrated into the apprenticeship and trainee program. Employees have to sign an ecological declaration, which is part of their contract. Periodical circulars inform employees of the firms' environmental objectives, strategies and measures and point out specific ecological issues. Firms emphasise an open and intense communication concerning ecological issues. Hence, the employees' motivation is closely related to the high commitment to the firms' environmental behaviour. Ideas

and creativity with regard to environmental opportunities are encouraged. Thus new rewarding systems have been developed. The firms conduct environmental competitions and events. Project teams and task forces have been developed in order to support environmental inter-departmental tasks. Environmental targets are integrated into the objectives of managers and supervisors.

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### **Firm Infrastructure**

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The management of some firms supports environmental activities. In the case of the certified firm, an environmental policy is developed. Firms define and monitor ecological targets. However, some firms only monitor targets for logistics and operations. Some firms pursue environmental measures merely in order to comply with existing legal regulations. Furthermore, a strategic approach could not be observed. Environmental activities are rather pursued sporadically, step-by-step. The environmental responsibility is allocated to a specific person who is responsible for the whole company. The environmental representative does not report to the top management. Meetings between the operation and the environmental representative do not take place on a regular basis. An information system with regard to environmental data needed does not exist. Ratios and figures are identified and analysed when needed.

#### *Some of the interviewed firms go further:*

The ecological issue is integrated into the firms' philosophy. The management is strongly committed to the environmental approach. The firms established an environmental specific mission. Environmental strategies are integrated into the firms' strategic concept. Departments, branches, divisions develop their own strategies according to the firms' strategic concept. Environmental measures are included into the budgeting process, which is continuously monitored by the environmental representative, the operational manager and

the ecological committee. The progress on these measures is reported in a reporting paper for the top management.

Environmental departments have been established consisting of several employees. The environmental manager reports directly to the top management. Several representatives exist for locations, divisions, branches, etc.. The environmental department has a plethora of responsibilities. However, the appropriate manager holds the responsibility for environmental issues of each business division. Hence, the environmental objectives are integrated into the agreement on operational targets of managers. An environmental board or committee is established which consists of upper and lower management representing a body of experts and holds decision-making power. An ecological management information system is integrated into the controlling system. Hence ecological information is gathered and analysed offering further opportunities.

Generally, it can be stated that firms pursue an environmental management approach (partly based on the management system ISO 14001). Internal environmental audits are continuously performed, project teams and task forces are initiated with the objective to further optimise the processes and identify further opportunities. All-encompassing product life-cycle analysis is performed, starting from the resource delivery (supplier) through to operation to the end of product life. Producing sectors are increasingly approaching a validation according to Eco-Audit and a certificate according to the environmental management system ISO 14001.

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#### Overall results

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The results of the interviewed firms further indicate that 50% of the firms assess their ecological environment as hostile. Furthermore, 50% of the firms could be also classified as pursuing a proactive ecological approach.

It is interesting to note that the majority of firms integrate the ecological issue into all business activities. The depth of ecological response can be argued as being far-reaching or above-average. Furthermore, the results indicate that 60% of the firms could be classified as pursuing to a high degree ecologically oriented inbound and outbound logistic activities. Likewise, 60% of the firms pursue to a high degree ecologically oriented human resources and firm infrastructure activities. 50% of the firms pursue to a high degree ecologically oriented operations and technology development activities. Finally, ecologically oriented marketing & sales and procurement activities are pursued to a high degree by approx. 40% of the firms.

A plethora of reasons why firms pursue an ecological approach and integrate environmental issues deeper into their business strategy can be identified. The key statements are summarised below:-

*„Social responsibility is an integral part of our firm’s core philosophy“*

*„Our top management is strongly committed to the ecological issue“*

*„Our major objective is to anticipate legal requirements“*

*„We aim to be the marketing manager for ecology“*

*„We want to be the first in introducing new products, processes  
(being the Forerunner)“*

*„It is a question of location“*

*„Our objective is to open up new markets“*

*„Ecology represents a quality standard“*

*„We approach ecological issues due to image reasons“*

*„We approach ecological issues due to cost savings“*

*„We aim to achieve a competitive advantage especially on the European  
market“*

*„We approach ecological issues in order to protect our competitiveness“*

The interviews indicate that the ecological issue has already required organisational changes within firms. Environmental regulations like the regulation on the circular flow of packaging material required administrative tasks and changes in processes within a firm which were non-existent in the past. Firms have established new departments, responsibilities and processes. Ecology is not a task to be performed only top-down. It requires all organisational units to take over an ecological responsibility. This is supported by the following statements: *„We approach a more collaborative style“*, *„we need the participation and creativity of employees“*, *„we have to be increasingly flexible“*, *„we have to emphasise and share the ecological vision and mission“*, *„employees are valuable in achieving environmental performance“*, *„employees are a core part of the whole system“*. It can be noticed that proactively orientated firms lay emphasis on an open and intense communication policy. Furthermore, firms attach great importance to high motivation and a strong involvement of employees. They foster creativity and project teams, as well as task forces. Moreover, new rewarding systems have been introduced in order to support the sense of responsibility, creativity with regard to environmental issues. It can be argued that firms place great emphasis on the appropriate organisational support. The results suggest that an appropriate organisational support resulted into several interesting ideas and innovations.

A majority of firms indicated that *„shorter realisation and thus shorter decision-making times are needed“*. They further stated that a *„direct access of the ‘environmental issue’ to the upper management is of advantage as it results in faster decision making and the appropriate attention“*. It should be further mentioned, that firms made the experience that a decentralised structure and faster decision making is more of an advantage. This supports greater speed of action and allows firm to be closer to the needs of the market. This is supported by the following statements: *„we need to be more*

*flexible*", „the firm requires faster and more fundamental changes, thus demanding higher innovation rates", „without more risk openness, lesser new ideas can be created". However, bigger sized firms stated that individual business units may tend to pursue a defensive approach with regard to environmental activities in order to save time and money. Hence, they had to take up countermeasures by integrating environmental measures into financial budgets, divisional strategies, the agreements on operational objectives as well as into the employees' assessment system.

According to the results of the questions, firms are classified into two groups with regard to their organisational structure and management style. The results of the interviewed firms indicate that 62.5% of the firms can be classified as adopting an entrepreneurial management style and 50% of the firms having organic organisational structures. Interestingly, 75% of all firms assessed their business environment as being hostile.

50% of the firms scored high on both the management style and organisational dimension. On the management style dimension, the firms identify risk as a key to growth. They pursue an aggressive, proactive business strategy with a strong emphasis on innovation, new processes and products and opportunities. The firms typically initiate actions before they are forced to (e.g. as from competitors). The firms have few structural layers with decentralised decision making powers, which lead to faster response to changes. Business units are almost autonomous acting very close to the market. Project teams, special task forces and matrix structures are of advantage for opportunity seeking and problem solving processes. As the complexity of business increases firms stress the need for creativity and innovation and thus encourage employees in this respect.

Conservative firms rated their management style and organisational structure below the threshold. Firms seem to have a centralised organisation, structured in major business functions having several hierarchical layers. Firms do not place emphasis on a free flow of communication. The management holds fast to tried and historical business principles. Proactivity and risk-taking is not wished and thus creativity or an involvement of employees not required. The firms are more reacting to market changes and responding to competitors rather than initiating any actions.

## **7 Conclusions**

The major aim of the research project was to analyse if the firm's nature of strategic response to business challenges has an influence on the ecological strategic response. Furthermore, the objective was to analyse the degree to which firms proactively approach the ecological issue. According to the results of the research project, it appears reasonable to conclude that firms adopting a proactive ecological approach integrate the ecological issue comprehensively and strategically into their business approach. Furthermore, the entrepreneurial management style supported by an appropriate organisational structure can be regarded as an adequate platform for adopting a proactive ecological approach. This endows firms with good prerequisites to follow the path of achieving environmental sustainability. The entrepreneurial style offers a framework of how to combine economic and ecological objectives. It may even offer a framework of combining economic, ecological and social objectives.

### ***7.1 Conclusions drawn from the survey***

In total, nine industries participated in the survey as it was decided that the research should not focus on one specific industry or size of firm in order to achieve a more general applicability of results.

One aim of the survey was to analyse the hostility of firms' business environment and the nature and style of firms' strategic response. The stated hypotheses for the survey were: -

H<sub>(1)</sub>: Companies facing a hostile environment adopt an entrepreneurial management style.

H<sub>(2)</sub>: Companies having organic structures are better prepared to recognise and satisfy the need for flexibility and thus will be more positively correlated to an entrepreneurial management style.

H<sub>(3)</sub>: Companies facing a hostile environment have organic structures.

A further aim was to analyse the hostility of the ecological environment and the degree to which firms are proactively oriented concerning environmental issues. The stated hypotheses were:-

H<sub>(4)</sub>: Companies facing a hostile ecological environment pursue a proactive ecological approach.

H<sub>(5)</sub>: A proactive ecological approach is positively correlated to an entrepreneurial management style.

The majority of firms surveyed were classified as adopting an *entrepreneurial management style*. These firms tend to adopt a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities and place great emphasis on R&D, technological leadership and innovations. They indicate that their strategic objectives are based on innovation, new products and processes, opportunities and risk taking. However, it is interesting to note that they tend to be rather risk-averse. Therefore, it may possibly be assumed that the entrepreneurial management style adopted by German firms is strongly based on innovation and proactivity rather than on risk-taking.

Concerning their business environment, the majority of the firms surveyed assess their *business environment* as being more benign than hostile. Firms facing a hostile environment are highly influenced by the economic & technological development, which has become far less predictable. The strong quality competition and the rate of innovation, which dramatically increases, dominate their business environment.

The findings suggest that *firms facing hostile environments tend to adopt an entrepreneurial management style*, which is mainly based on innovation and proactivity. Firms facing hostile environments place stronger emphasis on R&D, technological leadership and innovation. They pursue strategic objectives which are based on innovation, new products and processes, opportunities and risk taking. These firms aim to be the first business to introduce new products or services, administrative techniques and operating technologies. The dynamic of technological changes and innovations forces firms to react faster and adopt an anticipatory stance in order to maintain or develop a competitive edge. A high quality demand requires firms to be innovative and willing to approach new ways of performing, thus being able to continuously introduce quality improvements. Generally, it may be argued that entrepreneurial firms seem to be much better equipped to compete in these environments than conservative firms. They have the ability to respond to changes in the external environment more quickly and effectively. It appears reasonable to conclude that hostile environments encourage firms to adopt an innovative and proactivity oriented entrepreneurial management style.

*The research hypothesis  $H_{(1)}$  stating that companies facing a hostile environment adopt an entrepreneurial management style can be validated.*

The results of the survey suggest that *firms adopting an entrepreneurial management style have performed better* over the last 3 years and expect a higher performance in the future than firms adopting a conservative management style, especially when looking at the performance above 11% p.a.. Therefore, it may be concluded that firms adopting an entrepreneurial management style, based on a proactive stance and placing a strong emphasis on innovation, result in a better performance of firms.

In the context of adopting an entrepreneurial management style, the research project suggests some further interesting implications. It seems that *smaller-sized firms tend to adopt a more conservative management style than bigger-sized firms* , even though no statistically significant conclusion can be drawn from the results.

Furthermore, it is interesting to note that firms indicating *a higher degree of internationality tend to adopt an entrepreneurial management style*. The major differences between regionally and internationally operating firms could be found in their attitude towards innovation and proactively approaching the market. According to the statistical significance, it seems reasonable to claim that internationally operating firms place greater emphasise on being the first business to introduce new products or services and aim to initiate actions forcing competitors to respond to. International firms base their strategic objectives on innovation, new products and processes, opportunities and risk-taking. They place great emphasis on R&D and innovations. It is reasonable to suggest that firms which operate on an international dimension need to adopt an entrepreneurial management style in order to be able to cope with the diversity, complexity and dynamics of the markets. Furthermore, it appears that internationally operating firms rate their business environment more hostile than regional or nationally operating firms. Hence, these findings appear to further support the assumption that firms facing a hostile environment adopt an entrepreneurial management style.

As already mentioned, the results strongly suggest that *international operating firms rate their business environment more hostile* than nationally or regionally operating firms. According to the statistical significance, it can be concluded that internationally operating firms assess their business environment to be strongly dominated by quality competition and rate of innovation. This might indicate that the diversity of markets involve a certain danger and complexity.

It is interesting to note that regional operating firms seem to have problems in assessing the hostility of their business environment, as they rated all environmental issues quite equally.

The majority of firms surveyed were classified in having *organic organisational structures*. Firms having organic structures strongly indicate that they have vertically and horizontally open channels of communication. However, it is interesting to note that financial information is apparently handled more strictly. Organic firms place great emphasis on creativity with a policy to foster, develop and encourage creativity among the organisation. They have structures that include project teams and special task forces. Furthermore, these firms indicate that they have few hierarchical layers and a culture that allows for getting things done even if this means disregarding formal procedures. However, these firms tend to rely more on existing regulations or procedures rather than on ad hoc solutions.

It can be observed that the majority of entrepreneurial firms have organic organisational structures and conservative firms tend to have mechanistic structures. The research strongly suggests that *a higher degree of entrepreneurial management style firms have organic structures*. Entrepreneurial firms place greater emphasis on providing the appropriate framework necessary to encourage, foster and promote creativity, innovation and risk-taking. Collaborations among diverse groups of specialists are encouraged in order to be able to respond rapidly to market opportunities. Therefore, firms prefer multifunctional teams working on specific tasks. In order to support these structures and let employees participate in the success, entrepreneurial firms have vertically and horizontally open channels of communication. They stress the need to offer a greater freedom to act and encourage personal initiative by allowing the organisation to get things done

even if this means disregarding formal procedures and that requirements of the situation and each employee's personality define proper on-job behaviour.

It is reasonable to suggest that entrepreneurial firms believe that the innovative and proactive stance needs to be borne by the whole organisation rather than by individuals. Thus a supportive organisational structure is seen as crucial in developing the appropriate framework. An organisational framework that creates and fosters an entrepreneurial culture is necessary as it strongly encourages and supports entrepreneurial actions from all employees. Every part of an organisation must be able to respond to the changes. According to the framework of Covin et al (1990) one third of the firms surveyed could be grouped as 'Effective Entrepreneurial' and one third as 'Efficient Bureaucratic'.

*The hypothesis  $H_{(2)}$  stating that companies having organic structures are better prepared to recognise and satisfy the need for flexibility and thus will be more positively correlated to an entrepreneurial management style can be validated.*

As outlined before, the results reveal that entrepreneurial firms recorded a higher performance in the past and expect a higher performance for the future than conservative firms. Moreover, the research suggests that *the management style in relationship with the organisational structure represent good indicators for the performance of a firm*. The results indicate that 'Effective Entrepreneurial' firms perform better than other firms. This underlines the previous statement that firms adopting an entrepreneurial approach need to have the appropriate structures in order to backup and approach the innovation, proactivity and risk-taking path more successfully.

In the context of organisational structures, the research project suggests some further interesting implications. *Firms having organic structures recorded a better performance over the last three years and expect an increasing*

performance over the next three years. Therefore, it can be suggested that firms with a higher organicity index may achieve a better financial performance than firms with rather mechanistic structures. It may be argued that an organic organisational structure - recognised by its highly responsive and flexible structures with open communication channels, and high creativity potentials - allows firms to rapidly respond to market demands.

Furthermore, it can be observed that *bigger-sized firms tend to have more organic structures than smaller-sized firms*. The results indicate that bigger-sized firms place greater emphasise on structures that include project teams, matrix structures and special task forces and decentralisation of decision-making powers than smaller-sized firms. One possible explanation for the higher degree of organicity in bigger-sized firms may be that with the size of firm the comprehensibility decreases, the inertia intensifies, etc.. This forces firms to take countermeasures such as establishing smaller autonomous units in order not to risk the required flexibility needed for approaching the market. A further explanation may be that with the size of firm the 'degree of internationality' increases. It can be argued that firms which operate in an international market need to be more adaptive, flexible and faster towards changes in the marketplace as the diversity of markets involve a certain danger and complexity. This view is further strengthened by the results, which indicate that bigger-sized firms tend to operate rather on an international landscape. Although no statistical significance could be found with regard to how internationally operating firms rate their organisational structure, the results somewhat indicate that internationally operating firms rate their structures to be more organic than others.

Generally, it can be concluded that firms adopting an entrepreneurial management style tend to have the appropriate organisational framework. Entrepreneurial firms have organic structures, which support, create and foster

the entrepreneurial behaviour within the organisation. It endows firms with the capability to respond quickly and adopt a proactive and innovative stance.

However, the findings do not contribute to reaching a definite conclusion on a relation between *organisational structure and the hostility of the firm's business environment*. A possible explanation for this may be that the organisational structure should be regarded as a supportive issue having an influence on the effectiveness of the business' strategy. Thus, it is strongly related to the management style rather than being directly influenced by the business environment. This is also supported by the view that structure follows strategy (Chandler 1962).

*Therefore it has to be concluded that  $H_{(3)}$ , stating that companies facing a hostile environment have organic structures can not be validated.*

### **7.1.1 The ecological issue**

According to the results it can be noted that continuously increasing ecological regulations and the development of various ecologically oriented technologies, methodologies, and processes have a great impact on firms. Consumers are less prepared to pay a higher price for ecologically oriented products and services. Generally, it appears further that the stakeholders can have great influence on business.

It is worth noting, that an association between the hostility of the business environment and the hostility of the ecological environment can be identified. Thus it may be suggested that a *hostile business environment can closely be related to a hostile ecological environment*. On the one hand, it may support the statement, that the ecological issue can be regarded as a further

'increasing' external issue next to the 'political', 'economic', 'social' and 'technological' issues having an impact on firms. However, on the other hand, there are opposing voices stating that the ecological issue is more than an "additional" business issue.

The majority of firms surveyed could be classified as adopting a *proactive ecological orientation*. The proactive oriented firms emphasise the need to actively incorporate the ecological objective into the business' philosophy and into all firm's business activities. They argue that ecologically related innovations lead to an improvement of the ecologically wholesomeness of the firm. Ecological investments are seen as preventive measures. Moreover, it can be observed that proactive oriented firms do not tend to pursue reactive strategies like withdrawing businesses from the market. However, it may possibly be assumed that firms do not inevitably associate the ecological issue with a market opportunity.

The research strongly suggests that *with the degree of environmental hostility as regards the ecological issue the degree of pursuing a proactive ecological approach increases*. It may be argued that firms increasingly facing ecological impacts are more encouraged to meet ecology through choice and anticipation rather than merely adopting a reactive stance.

*It can be concluded that  $H_{(4)}$  stating that companies facing a hostile ecological environment pursue a proactive environmentally oriented approach can be validated.*

In the context of ecological environment, the research project suggests some further interesting implications. It can be noted that the results slightly indicate that *firms operating in national markets assess their ecological environment more hostile* than other firms, even though no statistical significance could be

identified. A possible indication for this might be the high ecological standard required in Germany compared to other European countries.

The research project identifies a strong association between management style and ecological orientation. The results suggest that *an entrepreneurial management style elicits a proactive ecological approach*. It can be concluded that with the degree of entrepreneurial behaviour the degree of pursuing a proactive ecological approach increases. It is noticeable that entrepreneurial firms place greater emphasise on ecological investments which are seen as preventive measures. Moreover, they place great emphasise on ecologically related innovations which lead to an improvement of the ecologically wholesomeness of firms. Furthermore, they express the need to incorporate the ecological issue into their business' philosophy' and into the overall business activities. Entrepreneurial firms perceive that consistently pursuing an ecological concept represents a crucial issue towards improving the firm's competitiveness.

Within this context, it is interesting to note that the major differences between firms pursuing a proactive and reactive ecological approach concerning the management style can be noticed in their attitude towards innovation, proactivity and risk-taking. It can be observed that firms adopting a proactive ecological approach place greater emphasise on the general preparedness to take risks which is seen as a key to growth and survival. Proactively orientated firms aim at being the first business to introduce new products or services, administrative techniques, operating technologies. Moreover, proactively oriented firms are more likely to adopt strategic objectives based on innovation, new products and processes, opportunities and risk taking.

According to these findings, the results strongly suggest that complex and changing environments elicit entrepreneurial behaviour and that an

entrepreneurial management style supports a proactive ecological approach. Thus, the way a firm responds to its business environment may have an implication on the firms' ecological approach. It may be argued that firms which continuously anticipate and respond positively to changes are appropriately equipped for pursuing a proactive ecological approach. At this point it should be added, that a combination of an entrepreneurial business approach and the appropriate ecological posture and vision might be very effective.

*The research hypothesis  $H_{(5)}$  indicating that a proactive environmentally oriented approach is positively correlated to an entrepreneurial management style can be validated.*

In the context of adopting a proactive ecological approach, the research project provides some further interesting implications. The findings contribute little to reaching a definite conclusion on the performance of ecologically oriented firms with regard to their managerial style. However, a weak indication can be identified, i.e. that *entrepreneurial firms pursuing a proactive ecological approach tend to perform better* than other firms. A possible explanation for not being able to identify a more definite conclusion may be due to the fact that performance can not directly be related to ecological activities. Firms' management information systems concerning the overall financial impact of ecological activities are still not exhaustively developed. Up to now, measuring the ecological orientation is still not seen as being essential.

It is interesting to note that *bigger-sized firms rate their ecological orientation as being more proactive* than smaller sized firms. According to the results, it can be suggested that the degree of adopting a proactive approach may increase with the size of firm. A possible explanation may be that bigger-sized firms have sufficient resources, the technology and processes, the appropriate

reach and the respective public visibility leading to a better framework. Thus, it may enable firms to more easily adopt a proactive approach.

It has been observed that the majority of proactively oriented firms indicate that they already adopt the stated strategies - examined in the survey - with the exception of the more defensive strategies. Therefore, it can be assumed that as regards the proactive firms *the gap between firms' ecological attitude and behaviour is comparably lower*. Furthermore, the findings suggest that firms pursuing a proactive ecological approach can be identified as being ahead of the reactively oriented firms, with regard to the translation of ecological strategies. This assumption further applies for firms adopting an entrepreneurial management style.

According to the research project four of the five hypothesis could be validated. However, the study offers some further hypotheses to be discussed.

- H<sub>(6)</sub> An entrepreneurial management style is positively related to the performance of the firm.*
- H<sub>(7)</sub> Firms having organic organisational structures perform better.*
- H<sub>(8)</sub> The management style in relationship with the organisational structure represent good indicators for the performance.*
- H<sub>(9)</sub> Firms which decide to pursue a proactive ecological approach and adopt an entrepreneurial management style tend to perform better.*
- H<sub>(10)</sub> Bigger-sized firms tend to adopt a more entrepreneurial management style than smaller-sized firms.*
- H<sub>(11)</sub> The degree of internationality of firms is positively related to an entrepreneurial management style.*
- H<sub>(12)</sub> Bigger-sized firms tend to have more organic structures than smaller-sized firms.*

*H<sub>(13)</sub> Bigger-sized firms rate their ecological orientation as more proactive than smaller sized firms*

*H<sub>(14)</sub> International firms rate their business environment more hostile than regional or national operating firms.*

*H<sub>(15)</sub> A hostile business environment is closely related to a hostile ecological environment.*

## **7.2 Conclusions drawn from the cases - Case study**

The major aim of the case study was to identify the firms' environmental activities and the degree to which the ecological issue is integrated into the company's strategic approach. Furthermore, the research aims to analyse the firms' management style and organisational structure. Based on this analysis, it should be identified if a firm's ecological approach can be related to the firms' general nature of strategic response. The case study may then support the results of the first phase.

The stated hypotheses for the case study were: -

H<sub>(1)</sub>: Companies pursuing a proactive ecological approach consider ecological factors in all areas of strategic behaviour and thus can be considered ecologically sound.

H<sub>(2)</sub>: The proactive ecological approach can be related to an entrepreneurial management style supported by an organic organisational structure.

According to the responses to the questionnaire, firms have been clustered in proactively and reactively oriented firms.

It is apparent that firms' ecological activities are strongly concentrated on inbound and outbound logistic activities, which in the beginning offered a myriad of ecological opportunities. This supports the arguments on supply chain management and reverse logistics. The major objectives are to reduce, recycle, reuse and avoid environmentally damaging resources and products. However, the firms adopting a more proactively ecological approach are still seeking for new ways of how they can perform even better with regard to their ecological behaviour. Furthermore, they aim to discover and introduce new products, ways and processes; requiring more than small changes.

Moreover, proactive firms place great emphasis on issues related to the firms' infrastructure and human resources. Within proactive firms the importance of human capital is higher. It can be concluded that participation and creativity of the whole organisation is desired. In order to encourage and enhance creativity and participation, firms ensure that employees are highly educated, motivated, committed and well informed. Therefore, these firms also cultivate an open and intense communication. It can be argued that a highly sensitive organisation elicits creative and innovative potentials. Furthermore, the firms perceive multi-functional teams - beyond hierarchies and departments - as being a crucial issue for seeking further opportunities of being increasingly ecologically sound.

The results suggest that a strongly committed upper management is of vital importance in order to attach the appropriate importance to the ecological issue. Firms point out that appropriate ecological know-how or competencies are necessary which may be embodied in environmental departments. However, it is stressed that the head of an environmental department should report directly to the upper management in order to further attach the adequate importance to the ecological issue and speed up the decision and reaction process.

Firms adopting a proactive approach perceive the need for a comprehensive approach. It appears reasonable to conclude that methods such as life-cycle analysis, stream analysis of resources, etc. disclose a myriad of improvements and allow a 'cradle-to-grave' approach. It can be observed that firms tend to move away from an 'end-of-pipe technology' approach towards a 'cradle-to-grave' approach, emphasising the need for considering the whole process (from the resources- to the disposal-stage) rather than keeping an eye on the ecological impact at the end of the process.

Moreover, the ecological approach should comprise the suppliers', the retailers' and the consumers' value chain. It seems reasonable to suggest that some firms accept that they have a certain responsibility to support the shaping of the consumers' opinion concerning ecological issue. They emphasise the need towards a closer co-operation throughout the supplier-customer chain. In this context, collaborations with suppliers, traders or other academic institutions end up in further interesting developments, ideas and innovations. Firms appear to increasingly work closely with outside bodies for the purpose of transferring knowledge and development of knowledge and new technologies.

Proactively oriented firms rely heavily on R&D activities searching for new environmentally friendly elements, product alternatives, etc. New industries emerged due to the ecological issue leading to new technological standards. It is noticeable that firms ambitiously seek for further innovative developments to be approached and implemented. Firms aim to broaden their product range through innovations and variations. They even trim back the product range through elimination of ecologically non-acceptable products and resources.

Proactively oriented firms approach the ecological issue in a rather comprehensive and strategic way. They integrate the ecological issue into their philosophy, mission and their business objectives and develop appropriate strategies covering all business activities. The strategies and objectives are continuously monitored and appropriately further developed. External information such as new regulations, new technologies and innovations, new ecological developments, consumer behavioural pattern, future perspectives, etc. are monitored and according to their impact considered in their strategic approach. Adopting a strategic ecological approach can be regarded as a crucial point for handling the ecological issue in its entirety; i.e. in a more comprehensive and all-encompassing way. Several firms also approach

environmental management system standards in order to approach the issue systematically.

It can be suggested that an all-encompassing environmental strategic management approach is seen as the appropriate way to handle the ecological issue strategically and effectively. Thus, it suggests that a proactive ecological approach should be approached from a strategic management perspective. Furthermore, it seems reasonable to claim that, generally, the traditional strategic management process can be regarded as an adequate framework for firms when approaching the ecological issue. However, the ecological strategic management approach should not be seen as a static instrument based on a predefined concept. As firms face continuous changes and challenges a flexible and adaptive approach to the strategic management process is necessary. Thus, according to the results some issues with regard to the approach of the strategic management process should be emphasised. Firms need to place greater emphasis on the participation of the whole organisation, thus having a strategic impact on all business activities and levels. Hence, this will require new forms of organisations, structures and ways of collaboration. Moreover, a stronger emphasis has to be allocated to the whole supply chain, integrating the ecological issue into the relevant stakeholder processes.

Generally, it can be concluded that firms pursuing a proactive approach are more likely to search for new products, processes, etc.. It can be argued that ecologically proactive firms meet the ecological challenge through choice and anticipation. Those firms may also be in a better position of being ahead of any legal requirements and give fresh impetus to the market, their future business and the ecological development. It enables firms to increasingly participate in shaping and affecting the ecological challenge. The results, furthermore, confirm that firms adopting a proactive environmental approach also integrate the ecological issue to a higher degree into their strategic

approach and overall business activities than reactively oriented firms. Finally, it appears reasonable to suggest that the proactive ecological approach can be seen as a good path towards achieving ecological improvements.

*The stated hypothesis  $H_{(1)}$  stating that companies pursuing a proactive ecological approach consider ecological factors in all areas of strategic behaviour and thus can be considered ecologically sound can be validated.*

However, it can be argued that it is not only a question of pursuing a comprehensive strategic management approach. It is furthermore a question of the appropriate organisational support and management culture in order to challenge the environmental situation. Firms have to speed up reaction time and be increasingly flexible due to the increasing dynamics and complexity of the ecological situation. It is a question of being prepared to initiate actions rather than purely reacting to external factors. Firms need to place strong emphasis on research and development seeking for new processes, products and ways how to handle the ecological issue. Moreover, it is a question of fundamental changes to be induced. All these require an appropriate corporate culture and the supportive organisational structure in order to backup and support a proactive and entrepreneurial ecological approach. For this purpose, the individual cases have been clustered based on the results of the questionnaire and interviews.

Figure 7.1 summarises the interpretations of the cases. According to the assessments, the individual cases can be grouped in two major clusters. Cluster '1' covers firms which pursue a proactive ecological approach and integrate the ecological issue to a high degree into their overall business activities and consequently behave more in a strategic manner. These firms could be classified as adopting an entrepreneurial management style supported by organic structures. Cluster '2' covers firms, which pursue a rather reactive

ecological approach and do not integrate the ecological issue into their overall business activities. These firms also adopt a conservative management style and have more mechanistic structures, with the exception of one case.

	Organisational Structure	Management Style	Tendency of relationship	Depth of ecological activities	Ecological approach	Cluster
Company A	●	●	EE	●	●	1
Company B	○	○	EB	◐	○	2
Company C	●	●	EE	◐	●	1
Company D	○	○	EB	◐	○	2
Company E	●	●	EE	●	●	1
Company F	○	●	PE	○	○	2
Company G	●	●	EE	●	●	1
Company H	○	○	EB	◑	◑	3

**Index:**

<b>Organisational Structure</b>	○ Mechanistic Structure	● Organic Structure			
<b>Management Style</b>	○ Conservative Style	● Entrepreneurial Style			
<b>Tendency of Relationship</b>	EE = Effective Entrepreneurial	PE = Pseudo Entrepreneurial	EB = Effective Bureaucratic	UU = Unstructured Unadventurous	
<b>Depth of ecological activities</b>	○ Nothing	◐ emerging	◑ Quite good	◒ Well Developed	● well advanced
<b>Ecological approach</b>	○ Reactive	◑ Neutral	● Proactive		

**Figure 7.1 Classification of cases**

Hence, the following conclusions for each cluster can be drawn.

- **Cluster 1**

The environmental activities pursued by these firms can be classified as well advanced. The opportunities in the inbound and outbound logistics and operations are almost exhausted. However, firms still search for new ways and further opportunities. Firms perceive the 'cradle-to-grave' approach as being a crucial issue. The firms' marketing activities concentrate on education and information of consumers in order to increase the environmental awareness. Hence, this also includes the firms' employees. It can be concluded that the firms have an all-encompassing human resources concept, underlining the need for information, communication, integration and innovation with regard to the ecological issue, emphasising the need for collaborative frameworks. Firms collaborate closely with external bodies. They furthermore emphasise the need to integrate the suppliers', retailers' business into the firms' environmental approach. Firms continually seek for new technologies, products and processes. The ecological issue is approached in a comprehensive strategic management way covering all business aspects and is integrated into the firms' philosophy. Furthermore, it can be stated that the firms' upper management is strongly committed and the firms see the ecological issue to be an integral part of their social responsibility. Some firms also aim to integrate foreign subsidiaries into their overall ecological approach by transfer of the national ecological know-how.

It can be concluded that these approaches represent an appropriate platform for the firms' objective of pursuing a proactive ecological approach. Firms assess the ecological issue as a challenge. Environmental activities and investments are seen as being preventive measures. Thus anticipating ecological issues rather than being merely forced to react.

Concerning their management style the firms adopt a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities and place great emphasis on R&D, technological leadership and innovations. Furthermore, know-how, creativity and the wealth of ideas of employees is encouraged and promoted as it is seen as a crucial issue for being able to support and enhance an innovative and proactive approach. An open and intense communication policy is fostered and furthermore project teams, task forces, etc are organised in order to work on problem solutions and innovative issues. Generally, it can be argued that a higher flexibility and organisational adaptability is desired.

- **Cluster 2**

The major ecological activities, which have been approached by these firms, aimed at cost savings in the short run. The firms mainly pursue some environmental activities with regard to packaging materials and optimisation of routes within the inbound and outbound logistics area. However, the opportunities have not been exhausted at all. Some firms even moved away production lines. Firms lay no emphasis on integrating the suppliers' and retailers' activities. Furthermore, the firms place no great emphasis on an appropriate human resources concept.

The majority of activities have solely been pursued in order to comply with environmental regulations. The firms' ecological activities are mainly triggered off by legal requirements. Hence, the ecological issue is not integrated into the firm's philosophy and is only pursued sporadically. The firms do not aim to pursue the ecological issue in a comprehensive and strategic way. Furthermore, no commitment of the management as regards ecology could be noticed.

With regard to the management style firms generally approach a more conservative approach placing no emphasis on R&D, innovations and technological leadership. They mainly base their strategic objectives on cost and defence issues rather than proactively approaching the market. The organisation relies on existing regulations and is more oriented towards formal procedures. The participation and creativity of employees is not fostered. The firms also have a strong tendency towards centralisation.

It appears reasonable to claim that an entrepreneurial management style and organic organisational structure is more likely to support or even elicit a proactive ecological approach. The results suggest that firms adopting an entrepreneurial style have a behavioural pattern which allows them to - or inevitably leads those firms to - adopt a proactive ecological approach more effectively. It enables them to give fresh impetus to the ecological development. Furthermore, firms need to have an organisation, which holds an 'organisational' responsibility. Firms need to establish an appropriate organisational framework for pursuing a proactive ecological approach. Therefore, it can be argued that new forms of organisational behaviour are needed instead of the traditional mechanistic structures.

*It can be concluded that  $H_{(2)}$  indicating that the proactive ecological approach can be related to an entrepreneurial management style supported by an organic organisational structure can be validated.*

The interviews further suggest some interesting implications. It has to be stressed that the general attitude towards the ecological issue plays a significant role. Firms' management need to be strongly committed to the ecological issue in order to approach it more seriously, responsibly and business oriented. The reasons why firms pursue a proactive ecological approach are various. However, two main strands of motivation can be

observed. On the one hand firms face purely a myriad of market potentials and thus decide to grasp the opportunities. On the other hand a very common reason can be identified: 'ecology' representing an integral part of their core ideology and thus being part of their social responsibility. In some firms it could be observed that an appropriate culture is triggered by the awareness of the owner.

It is reasonable to assume that firms which are family or privately owned businesses consider the ecological development more strategically and proactively; being part of their social responsibility. It may be argued that the field of interest of those firms is different to e.g. stock companies, which have nominated managers on fixed term contracts. Those managers are similar to politicians who have to be successful in the realisation of their campaign promises during their term. Similarly, managers have to be successful in achieving their targets of revenue, profit, market growth, shareholder value etc. during their terms, so that their contract will be renewed. Hence, this leads to the fact that managers in stock companies may approach more short-term objectives or in other words objectives, which may have a chance of success within their term. Therefore, it is reasonable to claim that it is easier for firms which are family or privately owned to pursue a more middle- and long-term ecological approach and thus are more likely to adopt a proactive ecological approach.

Firms have to increasingly consider and integrate the stakeholders' environment. Stakeholders increasingly have a major influence on the firms' business. As outlined before, some firms already integrate the suppliers' and retailers' business activities into the firms' overall ecological approach. However, among suppliers and retailers it can be observed that the major obstacle for not being willing to support these activities is the attitude toward the ecological issue. It appears reasonable to suggest that an ecological

approach should not be handled as being purely an internal company matter. It seems that retailers have a greater influence on manufacturing firms than vice versa. Several retailers in Germany still place greater emphasis on cost, handling and display issues. Therefore, some firms increasingly aim to develop an added value, i.e. try to combine ecologically oriented product alterations with an improvement of handling for retailers. In some cases firms and retailers collaborate in order to achieve an ecological improvement for both parties under consideration of economic and other functional issues.

However, it can be argued that the stakeholder approach concerning ecological issues is not going far enough. Audits and reports are not applied seriously enough, despite the fact that they offer an appropriate platform for stakeholder dialogue. Business accountability is still lacking. Firms need to increasingly inform stakeholder about their progress towards environmental development.

It appears that the consumers represent a crucial issue. Consumers have a powerful influence on retailers, firms and thus suppliers and play a decisive role in achieving a sustainable environment. It can be observed that consumers' environmental awareness depends on several other factors such as unemployment, other social values and also economic issues. Firms indicate that the majority of consumers are in general still not prepared to change their behaviour to a large extent. It is arguable that consumers would need to fundamentally change their consumption behaviour. Firms argue that even they might be able to be more innovative concerning new products and services, however, there is low demand or no willingness to pay a higher price or change behaviours. A lack of ecological education and a missing level of knowledge concerning the ecological situation and future scenarios might be an explanation for this. Therefore, it seems reasonable to suggest that it is of utmost importance to develop and enhance the environmental awareness of consumers, if the path of ecological development should be successfully

pursued. Consumers also have to adopt a more sustainable consumer behaviour.

The government represents a further pressure group among the stakeholders, having an overall and important influence. It can be concluded that the government holds a key responsibility for supporting, educating, leading, forcing and encouraging firms and consumers to follow the path of ecological development. The government can make use of several regulative instruments, which still allow enough space in which firms can develop.

## **8 Implications and Discussion**

### ***8.1 Discussion and contribution to knowledge***

Extensive work on environmental business literature has been undertaken in the fields of businesses' environmental awareness, motivation, strategies, advice guides, specific systems, tools and management standards. Most publications have been dedicated to functional and operational issues (ecological marketing, logistics, etc.). In recent years, discussions on organisational and cultural issues increased. Moreover, a debate on the contribution of business to ecological performance or even sustainable development increased.

However, the major question of this research is, if the nature of a business response is specifically supportive when pursuing an ecological approach. Steger commenting on the work of Porter et al (1995) points out some issues that are still unanswered: what type of firms are more inclined to become a sustainable co-operation; does the success of a transition may depend on the management's approach to doing business. Furthermore, several authors (e.g. Pümpin 1989, Bleicher 1994, Wilson 1994, Meima et al 1997, Halme 1997, Godet 1998) argue that new shapes of management structures, and new business approaches in terms of organisation and culture are required, as the business environment gets more fragmented, global, complex and sensitive to 'time'.

The general aim of the research was to determine whether the nature and style of strategic response has an influence on the ecological approach of firms. The focus of the research was to analyse if an entrepreneurial business approach may be an appropriate base from which to approach ecological performance. The entrepreneurial style can be associated with a more innovative, creative and proactive approach. This may endow firms with

appropriate capabilities to induce more fundamental changes rather than performing simple changes to technology, product lines, business, etc. According to the results of the research, it is reasonable to suggest that entrepreneurial firms tend to have the appropriate capabilities for adopting a proactive ecological approach and even more than this. It may even elicit an innovative ecological approach.

The surrounding environment of a company plays an important role in the strategic business sphere. Several authors agree that the emerging ecological issue will further lead to an increasing dynamic and complexity of the business environment. The results of the research identified a strong relationship between the hostility of the business environment and the ecological environment. However, it has to be stressed, that even if some authors argue that it is a further variable to be monitored by firms, the ecological issue is not a trend. It is more a question of conviction and attitude. Fineman (1994) also states that the ecological environment should not be seen as just one of many other business factors to be handled. It rather represents an ever-lasting effect, which has to be taken into account by firms in order to achieve a balanced economic and ecological progress.

### **8.1.1 The Entrepreneurial approach**

In the age of continuously, rapidly changing and competitive environments, companies have to constantly monitor their environment in order to analyse opportunities and threats. Furthermore, they have to analyse and assess their ability, capability and competence in order to be able to respond appropriately and quickly to changes in the environment. The nature of the organisation, the management style employed and particularly its strengths and weaknesses in relation to its environment, are highly relevant to the strategic response a firm

may adopt. Over the years the need for adopting a more entrepreneurial management style increased, especially for firms facing hostile environments. This view is strongly supported by the results of the research. Several authors emphasise the need for speed, flexibility and responsiveness. Hence, the dynamics and changes of the environment have led to the emerging of an entrepreneurial spirit (Drucker 1984, Burns et al 1961, Miller 1983, Stevenson et al 1990, Covin et al 1990, Sopford et al 1995).

The research suggests, that firms' entrepreneurial management style is strongly based on innovation and proactivity. However, it could be observed that the firms are rather risk-averse. One reason for this may be, that German firms tend to prefer more '100%' solutions requiring an accurate evaluation of possible impacts before a decision is taken. Generally, it may be suggested that Germany is just not a 'risk-taker' nation. Nevertheless, it is interesting to note that some of the suggestions made in the literature appear to be reflected in the strategic response of entrepreneurial firms. The attributes which are stated by several authors, common to all types of entrepreneurship are: proactiveness, aspiration beyond current capabilities, team orientation, emphasis on creating an entrepreneurial supportive organisation (Kirzner 1973, Kanter 1983, Miller et al 1984, Stevenson et al 1990, Sopford et al 1995, Burkinshaw 1997, Gibb 1999).

According to a recent study (Fischer et al 1999), top firms tend to 'grow globally, innovative, and are prepared to take risk'. He argues that top firms, require a strategic orientation, a running organisation, and an innovative working climate. Firms seem to consider innovation as being a crucial issue for their future. It enables firms to develop and introduce or implement new or even better products and processes. This strengthens their competitive advantage, enables firms to anticipate changes in the market and gain access to new markets, etc.. Several authors, both academics and practitioners in

Germany support the need for innovation as a key to growth. Wiles (1994) even argues that innovation is probably the most desired quality. However, a high percentage of firms still does not seem to recognise the benefit and need of - or don't have the capabilities for - pursuing an entrepreneurial management style based on innovation and proactivity. A recently published article in the Manager Magazin (January 1999) discusses innovation as a key success for a firm's future development. As a result of several studies and examples in the industry it has been concluded that several instruments exist, which may enhance the firm's capabilities for innovation. A longitudinal research revealed that e.g. the share of revenues, which can be assigned to the development of new products, is continuously decreasing among German firms. The investigation conducted among firms world-wide indicates some interesting results. Firms rated the need for innovation as high - representing a complex issue - having a strong impact on the entire firm. However, according to Table 8.1 German firms have specifically weaknesses in the strategic and cultural area. The results indicate that approx. 40% of the German firms do not have a distinct innovation-strategy and that employees are more likely to be regarded as resistant to change.

Success factor	USA	Japan	Germany
Firm's culture	X X X	X	X
Innovation strategy	X X X	X X X	X
Process orientation	X X	X X X	X
Project management	X	X	X X X
Knowledge management	X X	X X	X X

adopted from Manager Magazin (1999)

X X X = Competitive advantage    X X = Backlog demand    X = Competitive disadvantage

**Table 8.1 Success factors of firms in USA, Japan and Germany**

In this context, two areas are mentioned where firms should make a start: the innovation process and the firm's culture. It is argued that innovation needs freedom for creativity or even a touch of folly and chaos. Actually, the

investigation indicates that the innovative climate in German firms is not really encouraging. 'Thinkers' and 'co-ordinators' dominate the management, who prefer to hold on to existing and experienced products and methods. In the recent study conducted by A.T.Kearney (Fischer 1999), it was stated that Germans have a strong 'controller' mentality. The majority of German firms pursue a defensive strategy. Technical perfection, intellectual curiosity, penetration of new markets are generally not the objectives of management.

Several authors also stress the necessity of an increased organisational involvement, learning experiences, etc. discovering that culture and organisation are critical aspects of firms' success (Kuratko et al 1990, Idenburg 1993, Wilson 1994, Bleicher 1994, Volberda 1997, Meima et al 1997, Dodge 1997, Halme 1997, Gibb 1999). Discussions on organisational and cultural issues increased during the 90s. Firms should be able to generate a "willingness to respond, quickly and effectively, to change". Furthermore, organisational learning is increasingly seen as being necessary, as business operates in a changing and unstable and complex environment (Revans 1982, Roome 1994).

Many authors have also stressed the need to backup the entrepreneurial style by an appropriate supportive organisation. The research strongly suggests that the firms' management style positively correlates with a supportive organisational structure. A change in the organisational structures, relationships, and values is needed to create an organisational environment that encourages an entrepreneurial process. It can be argued that an appropriate organisational environment supports firms in producing ongoing innovation and pursuing an entrepreneurial approach. This supports the statements of several authors that the organisational structure affects the firm's entrepreneurial behaviour (Mintzberg 1979, Burgelman et al 1986, Drucker 1985, Covin et al 1990, Gordon 1993). For example, firms such as

3M, Microsoft, Ytong, etc. are known to have a highly entrepreneurial spirit. They create project teams, task forces, departments, and divisions, emphasising an entrepreneurial freedom. Individuals within an organisation need to take initiative and responsibility. Therefore, it is necessary to create a framework and mechanisms, which encourage them to do so rather than impede innovative behaviour. Likewise, firms emphasise the need for flexible structures, short lines of decision, great freedom for creativity and appropriate award systems, etc..

Many previous studies and discussions among firms, institutions and consulting firms in Germany have stressed the importance of soft factors such as culture, human capital, management style, etc. It is noticeable that human capital is increasingly emphasised as becoming a core competence of firms, so that the time of pure cost cutting is over (Servatius 1997). Some firms perceive that creativity, social competence, modern and more distinct and transparent structures are necessary as well as new forms of communication, participation and idea generation. Another recurring observation is that employees are increasingly regarded as a crucial source of ideas and creativity for business potentials and competitive strength and advantage. For this reason it is advisable to encourage and develop the individual innovative behaviour and readiness to risk-taking. It is further interesting to note that the term 'knowledge management' becomes increasingly known and implemented (Servatius 1997). Knowledge is seen to be crucial for the firm's growth and prosperity. In this context, Servatius argues that firms need to pursue an intelligent growth, which also implies the protection of the environment. For example, collaborative frameworks are regarded as a prerequisite for developing knowledge. The development of knowledge is regarded as a main prerequisite for innovation in terms of technical solutions as well as new types of solutions and processes. However, it still can be argued that a majority of

German firms are still influenced by their hierarchical and professional barriers, which impede them from being innovative.

The research suggests that firms with a higher organicity index and an entrepreneurial management style achieve a better financial performance than other firms. These findings would support previous studies (Khandwalla 1977, Miller et al 1989, Covin et 1989, Thompson 1993, etc.). The results further seem to suggest that bigger-sized firms tend to adopt a more entrepreneurial management style and have higher organic structures than smaller-sized firms. However, the results should be further analysed. It may be argued that the size of firms plays an important role for approaching certain technologies and innovations. A certain mass of resources needed for R&D activities has to be available, an adequate production capacity and an appropriate market presence may be of advantage. This is further supported by Peters et al (1982) who describe that excellent companies, which are of a bigger size, could be regarded as being entrepreneurial. These firms are able to encourage the entrepreneurial spirit among their employees.

### **8.1.2 The Ecological approach**

Assuming that complex, dynamic and changing environments elicit entrepreneurial management behaviour it is arguable that an entrepreneurial management style in context with an ecological approach may have the advantage of reconciling ecological and economic objectives. An entrepreneurial style may even endow firms with innovative capabilities enabling to induce changes; more fundamental and radical changes. Barrow (1999) states that environmental managers can not afford to wait too long, as they have to deal with uncertainty and complex problems. Kuratko et al

(1998) state that the ecological issue constitutes a challenge for entrepreneurs especially with regard to the development of socially responsible firms.

Several authors describe alternatives of how firms can approach the ecological issue, ranging from a completely defensive to a proactive and innovative approach. The authors identified several attributes which stand for a proactive environmental approach, such as seeking for opportunities, new products and processes, operating ahead of legal requirements, etc.. In any case, it is reasonable to conclude that the attributes, which stand for adopting an entrepreneurial management style, appear to strongly contribute to the achievement of a proactive ecological approach. Hence, this implies that an entrepreneurial management style endows firms with the appropriate capabilities to adopt a proactive ecological approach. This is also supported by the research, which indicates a strong relationship between an entrepreneurial management style and a proactive ecological approach. An entrepreneurial approach enables firms to behave proactively, and may even provide them with appropriate innovative capabilities to induce necessary changes as regards the ecological development.

In this context, it should be mentioned that the spirit of entrepreneurship is generally associated with innovation. Looking at the sustainable development debate, it is argued that 'Business as usual' is not the solution to sustainability. It is said, that a fundamental change in values, ideologies and ways how things are done is necessary.

An entrepreneurial approach is argued to induce a change from 'old' to 'new', enabling firms to introduce major changes, up to reshaping business (Ellsworth 1985, Ginsberg 1988). Miller (1983) argues that being entrepreneurial requires firms to do more than just perform simple changes to technology or product-lines or imitate competitors. Furthermore, Porter et al (1995) argues that the environmental issue triggers off innovation. Moreover, Gladwin et al (1995)

also point out that sustainable behaviour should become a source of competitive advantage. Sustainable development should be viewed and approached as an opportunity. Some authors argue that the world will not change towards sustainable development if firms cannot make profits (Fussler et al 1996, Hart et al 1999). The ecological issue may represent a major challenge, enabling firms to build up or renew their innovative capability. Therefore, firms should approach the ecological issue proactively and through innovation (Roome 1994, Crosbie et al 1995, Lehr et al 1999, Zundel 1999). However, there are also opposing voices, arguing that environmental issues should not merely be viewed as a strategic tool for gaining competitive advantage and generating profit (Welford 1995).

The literature state several issues which may trigger off a proactive ecological approach such as growth potentials, high market potentials and tough ecological threats, etc.. The research indicates that the hostility of the ecological environment may have an influence on the ecological approach adopted by firms. Therefore, it may be argued that the degree and type of an ecological approach adopted by firms may be regarded as a function of the nature of environmental pressure.

Moreover, further objectives are stated in the literature for adopting a proactive approach: anticipate upcoming regulations, be at the forefront, meet own requirements of taking over social responsibility, etc. According to the case study, it has to be pointed out that firms pursuing a proactive environmental approach were chiefly triggered off by the management decision to take over a social responsibility as regards ecology and through their own volition. Of course, firms aim at combining ecological with economic interests. The discussion among the triple-bottom-line emphasises the need to satisfy the economic, the social and the ecological dimension. Firms need to maintain an equilibrium between the economic, social and ecological

dimension (Picot 1977, Jacob 1981, Gomez 1989, Elkington 1998). Hess (1988) already stated that a company behaves ethically if it succeeds to maintain an equilibrium between the following groups: product - market - customer and ecology.

The case study further supports the comments made by previous authors pointing out that the ecological issue should be part of the firms' social responsibility. Moreover, the firms' responsibility should go beyond legal requirements (Welford 1995, Hosmer 1994, Hart 1997, Steger 1998). Hunt et al (1990) already stressed that proactive environmental management means: *"responsively addressing business, moral, and social obligations to protect both a company and the environment"*. Moreover, it may be suggested that firms adopting a proactive ecological approach are on the best way to become 'social responsive'. Prakesh-Sethi developed a three stage model classifying social responsibility into three categories which represent a firms' social intensity ranging from social obligation, social responsibility to social responsiveness (Kuratko et al 1998). However, at this point, it has to be emphasised that social matters were not within the scope of this research project.

Looking at the sustainable development debate, several authors (Clarkson 1995, Welford and Jones 1996, Welford 1997, Sillanpää 1998) identify the orientation towards stakeholders as an appropriate approach for being socially responsible. In context with the environmental debate several authors increasingly demand firms to perform social audits, supporting transparency and accountability. Firms need to cover more than just the ecological issue. The path towards sustainable development focuses on environmental protection, on equity and social matters. It can be argued that it is of utmost importance to handle the social matter first, in order to achieve real environmental performance. As this was not the scope of the research, it can

only be supported that firms should have to widen their responsibility by social matters.

Generally, the interviewed firms argued that in the short run a majority of ecological activities had a positive economic impact. However, in the middle run investments were needed which will pay off later in the future. Steger states that firms have to allow the benefits of long-term ecological investments to mature over time. Other authors, who argue that a short-run performance orientation of management impedes innovation and change, also support this. Therefore, it is reasonable to suggest that a proactive ecological approach should take on a long-term perspective, which is further supported by the investigation. In principle, it can not be argued that environmental friendliness generally stands in conflict with economic objectives, which is also supported by several authors in the literature (Strebel 1984, Kreikebaum 1989, Meffert et al 1989). It can be stressed that the results indicate that in the majority of the cases environmental activities resulted in cost savings in the short run as well as in the long run. Of course, these savings required up-front investments. Referring to the win-win discussion in the literature (Walley et al 1994) it can be concluded that many examples show that win-win solutions or the triple-bottom-line objective are achievable concerning ecological issues. For example, the resistance of consumers to pay a higher price for an environmentally oriented product may cause firms to accept a lower profit margin temporarily during the phase of product launch. However, in the long run this may lead to an increased market acceptance. It may even cause a chain reaction: market acceptance, increased consumer behaviour, increased sales, increased revenues, which may be used for new innovations, etc. So to some extent it can be argued that the need to satisfy the economic and ecological dimension is achievable.

A study conducted by Klassen et al (1996) revealed that the adoption of environmental management led to increased profits. However, the research project did not reveal a significant association between ecological behaviour and performance. A possible explanation may be that still enough firms are not able to relate an improvement in performance to any ecological activities. In the beginning of the ecological movement among industries the majority of firms complained about the cost impact rather than looking for any ecological improvements. A few years ago firms initiated activities concerning the establishment of management information systems. This may allow firms to monitor ecological impacts of individual business activities, the streams of resources and the financial impact. Of course, this argument does not apply to producers of purely ecological products, which belong to the emerging industries, as well as for firms, which decided to broaden their product base by ecological products.

It can not be ignored that for some firms the attractiveness of the environmental market may lead them to gain a first-mover advantage. However, it can be argued that even firms, which do not face any opportunities inevitably leading to a competitive advantage, should decide to proactively approach the ecological issue. It is apparent that firms not doing anything and waiting until their competitors have adopted first or doing only the minimum necessary to keep up with legal requirements may find themselves at a disadvantage. Although, looking at the disastrous ecological situation, one may not wait or be driven by competitive advantages, opportunities as the ecology is inalienable for survival.

German firms are faced with a comparatively larger number of legal and market regulations placing significant burdens on firms. Germany has very strong producer responsibility policies (product stewardship). It may be argued that Germany is in advance of other countries with regard to legal

requirements, ecological institutions, ecological activities and innovations. The ecological involvement has an incredible importance for the location Germany especially on the European landscape and the competitiveness of the economy on the global landscape. This view is supported by several firms, public institutions and governmental agencies. Porter et al (1995) in their work already pointed out that an ecological approach based on innovations can result in an early-mover advantage for the firms. They stated that German firms have first-mover advantages in developing less packaging-intensive products through the early adoption of recycling standards. They further argue that in Germany and Scandinavia, where firms and consumers are very environmentally concerned, innovation is not uncommon, within or in advance of regulations.

Looking at the environmental activities approached, three 'strong or in other words deeply applied' categories of activities can be recognised. Those business activities, which aim at innovations; information; and those which aim at reducing environmental damaging inputs. Next to the discussions among the impact on the competitiveness, the discussion concerning eco-efficiency increased in the literature (e.g. Schmidheiny 1992, Fussler et al 1996, von Weizsäcker et al 1997, DeSimone et al 1997). The approach of producing 'more with less' is seen by some firms as a 'right' way, but not the only one to be pursued. In the literature two main trains of thoughts can be identified, those who argue that eco-efficiency represents a major challenge (Schmidheiny 1992, Fussler et al 1996, von Weizsäcker et al 1997, DeSimone et al 1997) and those who argue that it does not represent a major path towards sustainable development. Welford argues that the discussion among eco-efficiency prevents deeper and more radical debates on alternative ways to achieve sustainable development. Looking at the differences of approaching purely ecological objectives and sustainable development, one should really not equate sustainable development with solely environmental management

approaches. However, one needs to keep in mind, provided that the southern regions strive for equal consumption and the general increase in population, one really need to rethink and concentrate on sufficiency rather than on eco-efficiency.

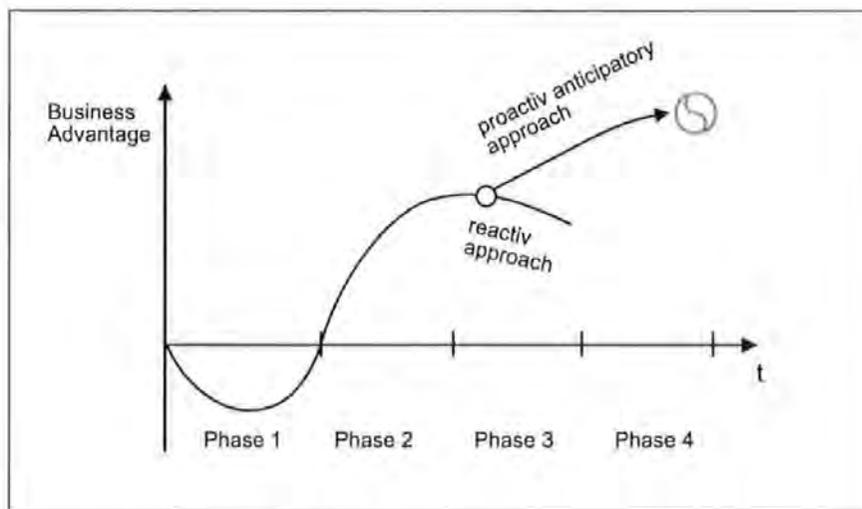
Steger (1993) and other authors (Achleitner 1985, Kirchgeorg 1990, Frowein et al 1990) state that the impact of environmental activities may depend on the competitive strategy adopted by firms. They argue that firms, which pursue a differentiation strategy, are more likely to adopt a proactive environmental approach. This is not supported by this research. The results do not indicate a statistical significance. Only a small majority of firms pursuing a differentiation strategy tend to adopt a proactive ecological approach.

It appears reasonable to suggest that firms approaching ecological activities move through four stages concerning the business advantage (see Figure 8.1). In the first stage, when a firm has decided to approach ecological issues, initial activities may result in cost increases.

In the second stage, firms recognise that they are faced with a myriad of opportunities, which may also result in cost reductions through e.g. the reduction and reuse of resources (packaging, waste, emission, energy, etc.). This phase may also be called the 'eco-efficiency' phase.

In the third stage firms increasingly face exhausted opportunities of 'simply reducing, reusing and recycling'. At this point, it may be argued that firms have to decide which approach to adopt. They may decide to approach a policy of just continuing their business as usual and/or being just in compliance with the legislation and wait until they are forced to act. This approach represents a reactive approach and apparently results in a neutral or negative cost impact as the firms mainly react to legal or market requirements. However, firms may decide to adopt an anticipatory approach based on innovation, new products and processes in order to further enhance their

ecological approach and take advantage of opportunities. This may lead the firms into the fourth stage. At this stage the ecological and business issue become integrated. It can be concluded that this approach leads to a number of advantages, such as cost reduction, image improvement, higher quality, revenue, competitive advantage or just the fulfilment of the firm's ecological responsibility. It is advisable for firms to pursue the environmental approach on a long-term scale. This view is supported by several authors like Kreikebaum (1980), Hunt et al (1990), etc.. However, firms should take care not to get stuck in the third stage. Steger already stated that the process of environmental strategic orientation should be seen as an evolutionary process.



**Figure 8.1 Stages of Business Advantage**

It can be observed that the time horizon is a crucial issue. Referring to the literature and the research project it can be stated that environmental objectives are more likely to be complementary to long term objectives. Therefore this may stand in conflict with objectives of stock companies which tend to adopt a rather short term orientation, as managers are elected for a fixed term, being driven by quarterly financial reports. They are continuously under pressure to obtain success stories and reduce costs. It may be further argued that taking over social responsibility (for employees, ecology, etc.) may not be compatible with the objective of 'shareholder value'. In this context, it can be pointed out that Rappaport, who developed the 'shareholder value'

approach, talked about the middle- and long-term increase of a firm's value. Those firms applying 'shareholder value' should consider this issue. Welford (1997) argues that a trend towards a more environmentally conscious stock market can be recognised, especially when accidents happen.

Interestingly, it can be recognised that fewer firms in Germany are publicly owned compared to other countries. For example, a comparative study conducted among German and British medium-sized firms in 1986 revealed that British firms tend to be more publicly owned with 66% compared to German firms with 9%. The remaining firms were family or private owned (Taylor et al 1990). The majority of firms interviewed have been privately owned and the awareness of the owner had a very strong influence.

Of course a firm has to be financially sound, however, this is not the only reason why firms exist (see Peters et al 1982). The importance of values and distinctive cultures are increasingly emphasised. However, all this may stand in conflict with the well known and popular 'shareholder value'. De Geus (1998) also points this out in his interview arguing that 'shareholder value' orientation leads firms to think that their success mainly depends on financial capital, which is the wrong trend. The concept of shareholder value aims at short-term success. This leaves no freedom for 'learning' because this takes time. He further argues that without learning, know-how can not be developed and without know-how firms have no chance to survive. Therefore, firms should be oriented to a long-term scale. His arguments are based on a study, which was conducted among firms, which have a long-lived tradition. The results revealed that these firms are not only managed by economic targets. They are highly adaptable to market conditions, have a consciousness of their identity and are continuously prepared to learn. Furthermore, they identify their human capital as their most important capital.

It may probably be necessary to measure firms in more than only in economic terms. Customer loyalty is also regarded as an effective yardstick of measuring firms' performance. It may be necessary to achieve an optimal balance between profit maximisation and social goals thus requiring new performance measures that also reflect non-economic criteria. As already mentioned, social audits also offer an appropriate platform for stakeholder dialogue. Moreover, environmental reporting (James 1994, Gray 1996, Hutchinson et al 1997), and an environmental performance measurement platform would offer a further opportunity (see Young et al 1998). According to the result of the research, it can be concluded that the involvement of firms in approaching the stakeholder environment is weak.

Several recommendations can be derived from authors, who stress the need for incorporating the ecological issue into all business activities and a strategic approach (Kreikebaum 1991, Steger 1992, Sauer 1993, Meffert et al 1993). Several authors pointed out the need for applying a strategic management process. The research suggests that proactively oriented firms are of the opinion that a comprehensive environmental strategic management approach is an appropriate way to handle the ecological issue strategically and effectively. A strategic management process facilitates the optimal positioning of a firm in its competitive continuum. It further allows a more accurate anticipation of and improved preparedness for reacting to environmental changes. It enables firms to approach the ecological issue in a more comprehensive, strategic and systematic way. Therefore, it can be concluded that firms should consider ecological issues under the umbrella of strategic management. Several authors argue that reasons why companies behave rather defensively are e.g. lack of possibilities, short-term strategic orientation and a lack of a completely integrated environment concept.

Some firms employ environmental management systems (e.g. ISO14000, EMAS). Although it offers a systematic, standardised implementation and monitoring of policies, objectives and targets, it does not set environmental thresholds and targets. The audit process is more concentrated on auditing the system rather than environmental performance (e.g. Shayler et al 1994, Welford 1996). The interviews support these statements. Furthermore, it can be suggested that the systems fail to provide appropriate measures to promote employee commitment (see also Boiral 1998). Some firms argue that the systems are too mechanistically and bureaucratically oriented.

Firms recognise that all product life-cycle stages have an environmental impact and thus have to be considered appropriately. The life-cycle approach, covering upstream and downstream implications, can be regarded as a 'cradle-to-grave' approach. Several authors stress the necessity of adopting a life cycle or 'cradle-to-grave' approach. The life-cycle assessment forces firms to analyse and constantly review environmental impacts throughout the whole product life cycle. This consequently leads firms to greater co-operation with customers and suppliers (Crosbie et al 1995, Steger 1996, Welford 1996, Fussler et al 1996). According to the literature the supply chain offers great potential for environmental improvements (Wu et al 1995, Green et al 1996, Lamming et al 1996, Hutchinson et al 1997, Wycherley 1999). Looking at the activities pursued by the interviewed firms, this view can be confirmed. Furthermore, the need for environmental assessments and supplier audits is stressed (see New et al 1997, Hutchinson et al 1997). Hall (1999) emphasises the importance of a collaborative relationship between suppliers and customers. In this context, the importance and effectiveness of reverse logistics is increasing; which can be observed in the food & allied industry especially concerning the packaging material. Transport as a large source of environmental problems and opportunities can also be identified (Crosbie et al 1995, Wu et al 1995, Sachs 1995). However, several trends are having

contradictory impacts on environmental objectives. For example, just-in-time delivery may lead in total to more traffic, lean production may lead to an increased distance between supplier and customer.

Figure 8.2 outlines how firms adopting a proactive ecological approach may handle the ecological issue more strategically. As firms stress the need to integrate the ecological issue into their general strategic behaviour, it can be concluded that these firms respond in a strategic methodical way. However, it appears favourable for firms to integrate the ecological issue along the backward and forward value chains. The same argument is presented by several authors (Frowein et al 1990, Dyllik 1992, Meffert et al 1992, Shrivastava 1995). Furthermore, firms place great emphasis on their flexibility and innovative capabilities. This requires the appropriate management style and the supportive organisational framework.

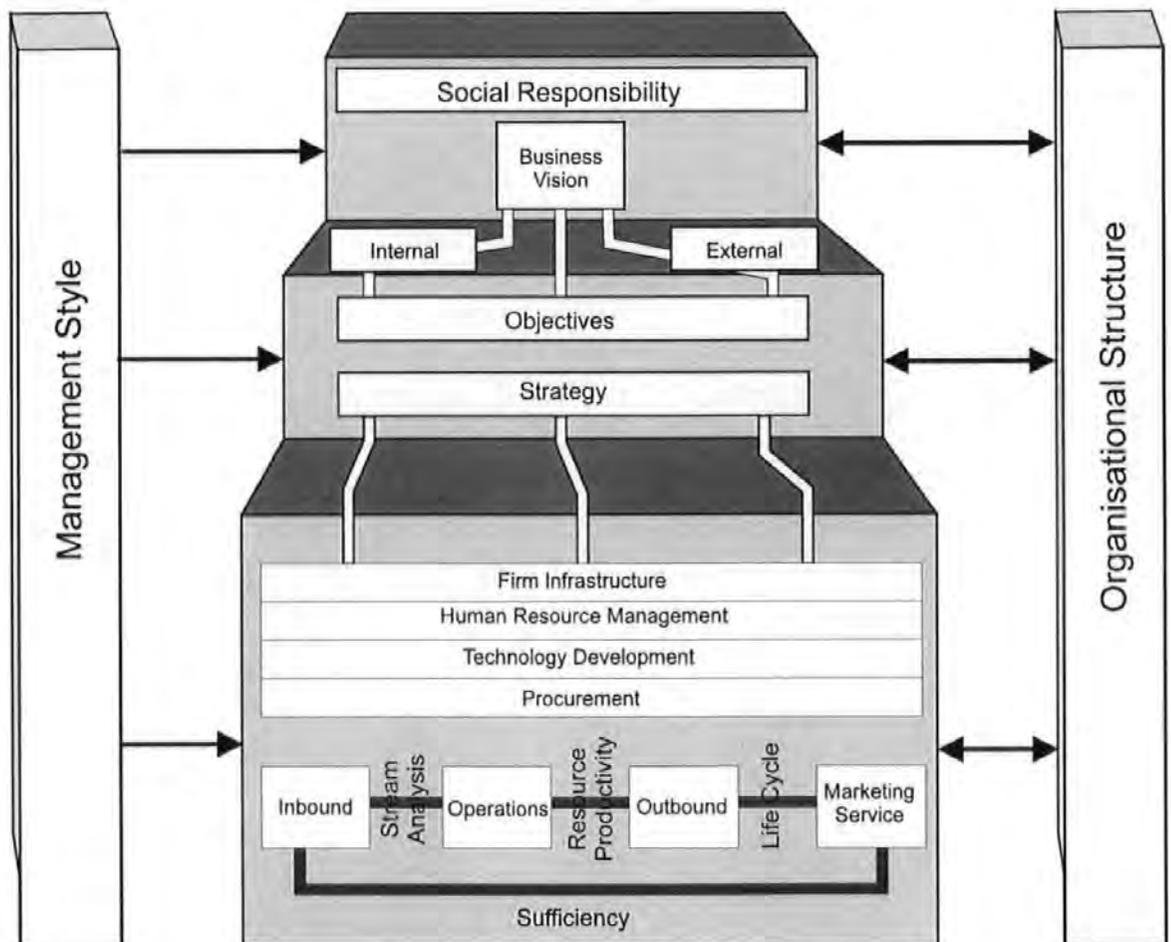


Figure 8.2 The strategic management process

The benefits, which may be derived from a strategic process, are various (Entarga 1998). Some of the benefits are listed below: -

- Resources are properly allocated.
- The analysis of the internal business culture and the evaluation of its impact on the company's performance.
- Awareness of the company's potentials in light of its strengths and weaknesses.
- Identification and analysis of opportunities and potential threats.
- It may bring about a required change of direction of the company.
- Growth and Change can be accelerated and improved.
- Development of better communications with people both inside and outside the company.
- Provides a road map to show where the company is going and how to get there.
- Security among employees that comes from better understanding of the changing environment and the company's ability to adapt.

A key goal in adopting a proactive ecological approach is a strong commitment of the upper management toward the ecological approach. It represents one of the key success factors among others. This has also been confirmed by other authors, who further point out that the commitment of the whole organisation is required (Hunt 1990, Welford 1995). This is also supported by the interviews. The strong management commitment was of great importance, especially at the time when the firms started their ecological activities and the business units were asked to take over an ecological responsibility. In course of time the whole organisation became strongly committed and a momentum has been gathered. It is further interesting to note that employees in firms adopting a more proactive approach define themselves as belonging to a big family, being part of a team, which may stand for a distinct culture. Several authors point out that the business' culture has a great impact on the ability to

identify environmental problems, adopt solutions, and the way something is approached (Wehrmeyer et al 1995, Welford et al 1997, Meima et al 1997, Dodge 1997). Dodge (1997) emphasises that if the owner of a business has a high environmental awareness, this may have a great influence on core values of the business. This can be confirmed according to the results of the research. For this to occur, firms need to develop an appropriate organisational environment. It can be argued that centralisation lowers the incentive and opportunity to participate in the firm's ecological approach. Proactive firms place great emphasis on the participation of all employees. They emphasise the need for developing the appropriate ecological knowledge and utilising the creativity and ideas of employees through empowerment. Multi-functional teams were appointed with the objective to handle or identify further issues. All this results in a higher commitment. Many recommendations derived from several authors commenting on the integration of the organisation appear to be reflected in firms adopting a proactive approach (Strebel 1980, Meffert et al 1992, Steger 1993, Strunz 1993, Albach 1994, Klinkers et al 1995, Barrett et al 1995, Meima et al 1997, Dodge 1997, Halme 1997). The results of the research also support the importance of employing Human Resources issues (see Emerson et al 1997). Steger (1992) also stresses the necessity of a cultural revolution and organisational support being a major barrier to adopting an ecological approach. It can be concluded that pursuing an ecological approach requires an appropriate organisational support. Interestingly, the organisational support required has similar features to an entrepreneurial business environment. Furthermore, it may be suggested that the ecological issue stimulates creativity, innovation, competitiveness rather than stifling them (Porter et al 1995, Shrivastava 1995).

It is interesting to note, that many of the suggestions in the literature related to the ecological approach and organisational support such as:-

- top level support and commitment
- corporate policies that integrate environmental issues
- effective interfaces between corporate and business unit staff
- high degree of employee awareness and training
- established ownership of environmental issues

appear to be reflected in the strategic response of firms researched. Therefore, it can be suggested that a proactive approach represents a high degree of environmental involvement, commitment and activity. The research further strongly supports the recent investigation of 'environmental pioneers' conducted by Pfriem et al (1998).

However, Jones et al (1997) demand businesses to shift from traditional unitarist to more pluralistic cultural strategies. They argue that unitarist structures are believed to be more innovative, healthier and more effective, whereas pluralist cultures require an increase in employees' powers, democracy and sharing of profits. This would imply, that approaching an entrepreneurial (innovative) - thus unitarist - approach could not go hand in hand with a pluralistic cultural strategy.

Solving the ecological situation will increasingly require partnerships between business and environmental groups, as it is too complex and consequently individual players won't solve it (Murphy et al 1997, Wolff 1998). Collaboration with institutions can provide valuable support for firms, especially for firms which do not have sufficient internal capabilities. Moreover, as the required changes in technology, products or processes rather take enormous dimensions, it is wiser and more efficient to be researched by a team.

The results of the research indicate that smaller-sized firms do not tend to adopt a proactive ecological approach. Therefore, it may be advisable for these firms to make greater use of collaborations. The German chamber of commerce also supports this argument. They place great emphasis on the consultation and sensitisation of firms, especially of smaller firms. The chamber of commerce benefits from the knowledge of environmental solutions, which have been adopted by bigger-sized firms, which are then transferred to smaller-sized firms. They argue, that usually a consultation and sensitisation of bigger-sized firm is not necessary.

The attitude towards the role of government among the firms is rather undecided. The research supports several views (Frost 1993, Fussler et al 1996, Murphy et al 1997, Welford 1997) arguing that the government should play an important role. However, the government should provide incentives rather than regulations. A government program should encourage and motivate firms. It should direct programs to consumers and society.

It may be argued that even if the ecological impact may be reduced it will be overcompensated by the increased output. Thus, it can be stated that there is still a long way to go. Furthermore, some trends like the internationalisation of world trade may be counterproductive if they do not change their direction (see Welford 1995, Ekins 1998). However, there are also some authors, who argue that the environmental situation is not too bad and that green supporters are pessimists (e.g. Krakauer 1991, Beckermann 1995). Generally, it can be agreed that ecological sustainability is of utmost importance. However, several authors argue that it won't be achievable under conditions of e.g. expanding poverty, inequity, etc. It can be stated that the path towards sustainable development has to concentrate on environmental and social progress as well as economic progress. Therefore, sustainable development should not be equated with solely environmental management approaches.

One needs to concentrate on social matters in order to be able to fully contribute to environmental matters. A fundamental change of consumption pattern, material thinking, lifestyles has to happen. Some authors even claim that being sustainable in capitalism is probably not possible, as capitalism is self-destructing (e.g. Korten 1995, O'Conner 1997). They argue that in the absence of a collapse of capitalism we will have to be satisfied with incremental changes down the road of sustainable development. Other authors criticise that the strategic approach will not lead us down the path towards sustainable development (e.g. Welford 1996). It does not challenge the profit-centred industrial organisations, leading to a 'business-as-usual' paradigm.

However, the opinion on the role of business in achieving sustainable development vary. Lamming et al (1999) raise doubts whether sustainable development can be properly applied at business level. Sustainable development has to be applied on a global level to be effective. One can not stop at the border of firms and countries. As already mentioned consumers and their attitudes have a very strong role. Moreover, the public policy and individual consumption patterns have to move toward sustainability. Several global organisations and institutions like the OECD (Organisation for Economic Co-operation and Development), UNCSD (United Nations Commission on Sustainable Development), WBCSD (World Business Council for Sustainable Development, UNEP (United Nations Environment Program) work on programs, concepts, policies and tools in defining and achieving sustainable production and consumption (Green lane 1998). It can be concluded that the scope of such a task represents a challenge for all individuals living on this planet. The protection of ecological environment is of interest to the whole population. Firms are one part of the whole system, which have to change their cultural behaviour. However, Lamming et al (1999) argue that businesses are not in place to solve the world's problem, especially when talking about social matters. Government needs to play a very important role.

Despite several criticisms that the strategic focus will not drive us towards sustainable development, it can be suggested that an entrepreneurial approach will enable firms to be innovative. This may enable them to induce fundamental changes with regard to ecological matters. Even though the discussions in the literature on innovation, entrepreneurship, etc. do not cover all components of sustainable development, it may be widened by inequity, and social issues. Despite that, it can be stated that radical and not incremental changes are needed; possibly one could say: creative changes are needed. Some authors argue that firms should encounter sustainable development with innovation, as this is contributing significantly to sustainable development - especially concerning ecological issues (Steger 1993, Wiles 1994, Roome 1994, Lehr et al 1999, Zundel 1999, Hart et al 1999, etc.). However, it requires more than incremental improvements. Hart et al (1999) raise the need for visionary and future oriented innovators and entrepreneurs.

Without doubt some authors would disagree with the statements outlined above, as from their point of view the environmental activities are still not far-reaching enough. Based on these discussions and the results of the survey, it can be concluded that firms adopting an entrepreneurial approach are well equipped for following the path of an ecologically sustainable future. Some authors state that reduction, reuse and recycling practices can be regarded as valuable approaches in order to help to achieve a certain level of sustainability (e.g. Green lane 1998). Whereas, other authors require fundamental changes of behaviour in a more spiritual sense (Welford 1997). However, as pointed out by Hart (1997) the challenge is a matter of developing a sustainable global economy. Despite all these discussions, it can be concluded that radical and fundamental changes are needed. This may be possible with appropriate innovations, a better education as regards the impacts of human behaviour on the environment and an incentive role perceived by government.

## **8.2 Recommendations**

Many authors have stressed that firms need to fundamentally change values, ideologies and ways how things are done. The question is how can firms get there?

Governmental regulations are needed in order to initiate first steps into the right direction, i.e. to educate and promote ecological behaviour and visions. Several authors suggest that governments should utilise specific instruments, which preferably should serve as promoters rather than impeding firms from innovating and improving environmental quality. Governmental intervention should, however, allow enough flexibility for firms.

There are some fundamental key factors (Figure 8.3), which will have an influence on the firm's capability to pursue a proactive or even an entrepreneurial ecological approach and thus make a contribution to an ecological sustainability. It is advisable for firms to approach the ecological issue in an entrepreneurial manner. Firms should place great emphasis on R&D, leadership and innovation. Strategic objectives should be based on the development and introduction of new products, processes and technologies. Firms should continuously seek for opportunities and view the ecological issue as being a challenge of the future. Hence, those firms, which adopt a proactive, aggressive posture, will be able to maximise the probability of exploiting opportunities. Furthermore, it may be supportive to change their general preparedness to take risks. It may be reasonable to suggest that firms should aim to go 'ten steps forward and have the courage to go four steps back'. All this will elicit firms to place greater emphasis on ecological investments, which are seen as preventive measures. Ecologically related innovations will enable firms to behave in a way which is ecologically sound.

A prerequisite for a successful implementation of an entrepreneurial approach is going to be the ability to build a supportive organisation. Based on the increasing emphasis on human capital, firms need to encourage and increase the participation of the whole organisation. Internal stakeholders are more likely to support policies which they had a fair chance to influence. The aim is to increase employees' identification with the firm's goals. Moreover, appropriate collaborative frameworks are necessary to adopt a more innovative approach. In this context, an open and intense communication as well as a structure, which includes project teams and special task forces, which act as multi-functional teams are of advantage. Firms should establish frameworks, which foster, develop and encourage creativity among all employees. The organisation should allow to respond quickly, flexibly and allow for failures. Therefore, it may further be advisable to have a culture which offers a great freedom to act and allows for getting things done even if this means disregarding formal procedures. The organisational environment should allow experiments and failures. As stated in the literature an organisational learning process is of utmost importance.

A further key factor is a strong commitment of the upper management towards the ecological issue and as well towards the organisation. Furthermore, specific resources (e.g. environmental department) should report directly to the top management. The reporting level represents the importance of an issue. The firm's viability should be based on 'social responsibility', representing a core value of the firm. Firms taking over social responsibility may be able to manage the firm with the necessary 'social intelligence' rather than by order. Consequently, the ecological vision is to be incorporated into the firm's philosophy, business mission and the overall firm's activities. Furthermore, firms have to ensure that the ecological approach is pursued in a strategic manner. The overall integration of the ecological approach into the business objectives, strategies and principles represents an essential

prerequisite for the commitment, motivation and identification of employees. However, it should be pointed out that firms should take care that the strategic process is not applied too rigidly. The objective is to maintain an equilibrium between rigidity and chaos.

Figure 8.3 outlines a framework covering the essential factors, which are seen to be strongly supportive for an entrepreneurial environmental approach. It might even put firms and industries into a much stronger position offering a framework for managing change and facing a future which is more sustainable. This leads to the path of “Enviropreneurial Management”.

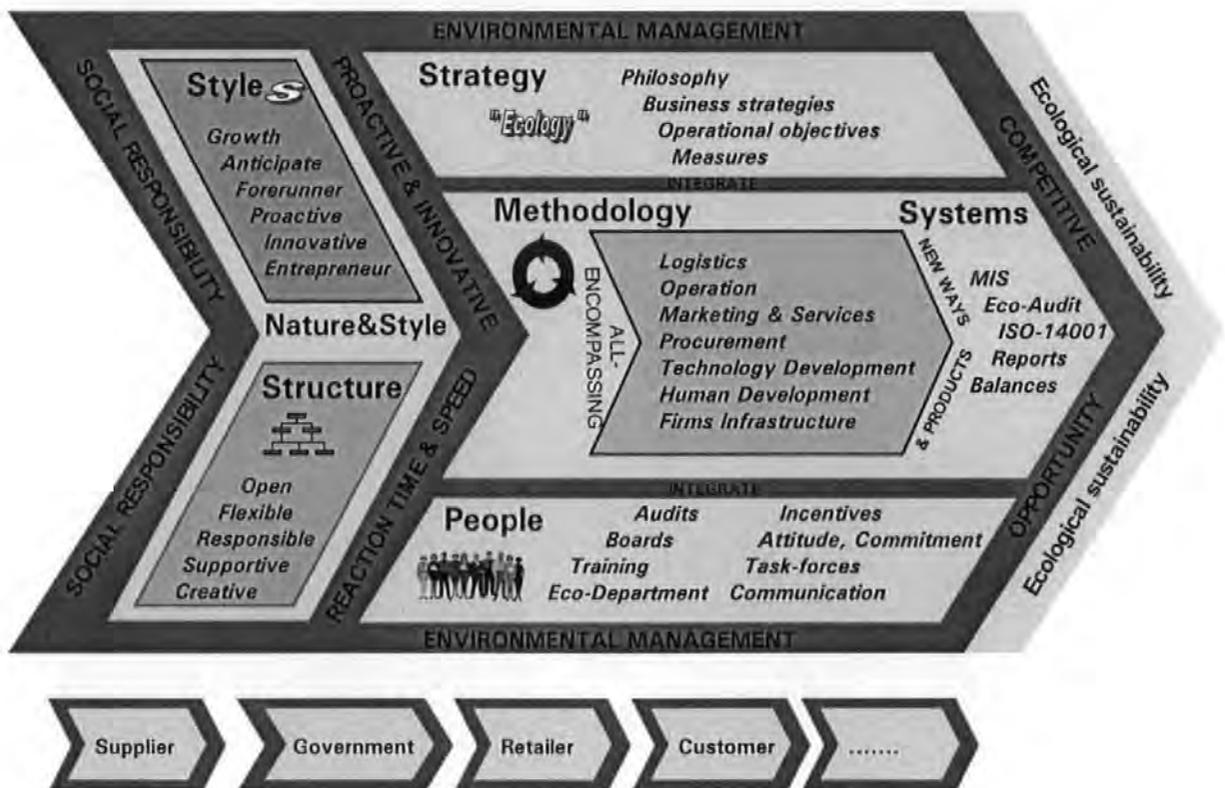


Figure 8.3 Framework: Enviropreneurial management

Firms which admit that a fundamental change of values and the way they behave is required, should consider to initiate a transformation process. The challenges of the new millennium with the pressure for globalisation, increasing complexity and dynamics of markets are requiring a higher adaptability of firms. Furthermore, an increasing importance of speed and time

make ongoing 'change' necessary. As firms continuously monitor their environment with the objective to anticipate changes, they may also need to 'transform' the firm in order to ensure its viability. The need for change is no longer about merely achieving cost savings, it is rather about fundamental changes of values, the relationship with the surrounding environment and ecology, and its stakeholders, etc.. However, it should be emphasised that it is important to maintain equilibrium between stability and change. This is also supported by Kanter (1983) who points out that companies should maintain an equilibrium between what has to be changed and that which should be preserved in order to avoid 'chaos'. The need for appropriate mechanisms, structures, strategies, style and culture is emerging, inducing the need for 'change'.

Firms recognising the need for cultural change with the objectives to achieve a higher organisational adaptability, an increased entrepreneurial spirit, need to create an ecological creative framework. In order to achieve this, firms may need to initiate a transformation process. Those firms may achieve an economic growth as well as ecological sustainability and hence behave more ethically and - furthermore - stay competitive. Of course, it has to be admitted that there is no panacea for successful change processes and that it will stay a complicated issue.

Referring to the work of Gouillart et al (1995), who describe the need and the way of transforming a business. They argue that a firm is comparable to a living organism, the 'biological firm'. The business transformation model is divided into four main phases: Reframe, Restructure, Revitalise, and Renew. An attempt of how a firm may initiate a transformation process with regard to an ecological transformation, is outlined in Figure 8.4. For this purpose the business transformation model has been used and slightly adapted. The reframe phase has the objective to change the self-portrait of the firm in order

open and broaden the firm's consciousness. The firm should define the field and rules of business activities, develop an appropriate vision and generate a strong support from the organisation. During the restructuring phase the main aim is to comprehensively restructure the infrastructure, processes, structures and operational business activities. The revitalise phase shall cause a firm to achieve growth. During the renewal phase firms' activities concentrate on the human capital in order to be able to further develop into a 'biological' system, which co-exists with its environment. As already pointed out by Sprüngli (1981), "human beings shape the environment and the environment shapes them".

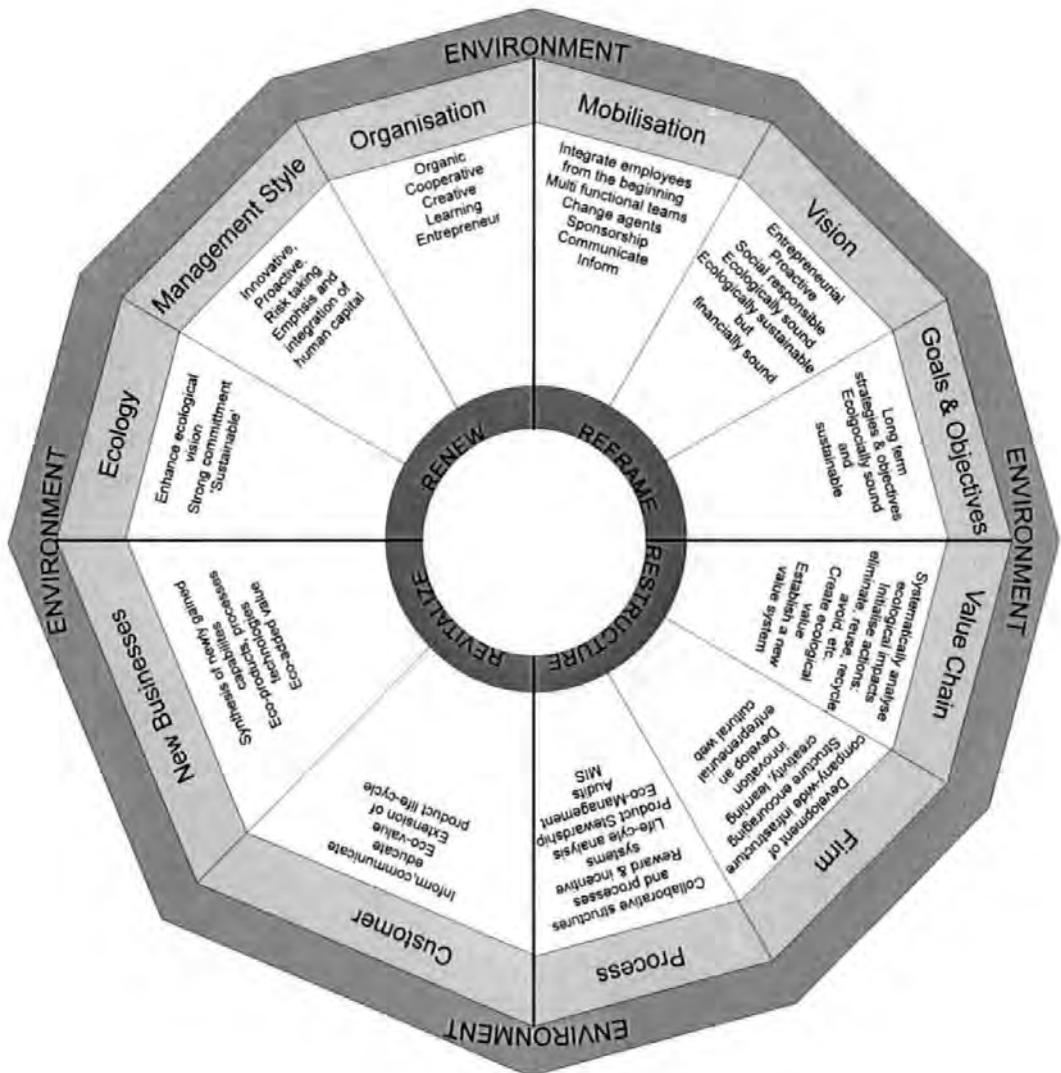


Figure 8.4 Transformation process

Firms aiming to perform a change process should adopt a more proactive approach rather than being forced to act. At this point it should be referred to a statement by Halme (1997), who points out that an environmental change process is evolutionary, supported by an ongoing learning process. Furthermore, it may be advisable to consult external sources, as this would allow to get an outside perspective which may be useful (getting a bird's-eye view). During the transformation process, firms should aim at gaining early benefits, as this would enhance the motivation to proceed.

Key factors, which can be recognised as having an influence on the success of a change process:-

- Top management has to personify the 'change'. They have to be strongly committed to the change.
- The ability of management to cope with change.
- Nature and effectiveness of the process used to arrive at major decisions to bring about change.
- Create a climate (culture), which is collaborative and not resistant to change.
- Cultivate an intense information and communication policy
- Maintain employees highly committed.
- Develop symbols of change. Sponsorship of environmental issues and representation on executive boards are strong symbols of change. Utilise multi-functional teams, which may also be regarded as visible change agents.

### **8.3 *Implications for further research***

The research project provides some interesting implications and as already stated it does not aim to offer a comprehensive answer to all problems concerning sustainable development, but rather aims to offer an alternative business perspective to achieving ecological sustainability.

The research strongly suggests that firms' strategic response to ecological issues is influenced by the way in which firms respond to business challenges or changes in the business environment. The research underlines that firms adopting an entrepreneurial approach are well equipped for following the path of an ecologically sustainable future. Furthermore, it can be concluded that a proactive ecological approach should be pursued from a strategic management perspective.

However, several limitations and opportunities for additional research can be identified from this research project.

Even though the response rate is comparatively high, a potential non-response bias still exists, thus the results respectively the respondents may not be representative of the original sample. The variables, which have been utilised to identify a proactive ecological behaviour, may differ among various researchers due to the diversity of interpretations and criteria in the literature. It may further be argued that the variables identifying the management style are mainly oriented to innovations that are more technical rather than to being creative, just approaching new ways of doing things differently and thus may not be applicable to all industries. The variables identifying the hostility of the ecological environment may be questioned. The identification of hostility with regard to the ecological issue represents a crucial task, as different industries have a different sense of ecological hostility. Furthermore, it is questionable if these variables also stand for complex and dynamic environments. It must be

admitted that there are several issues in that sense which may be called in question.

For the second stage of the research project, qualitative research methods were utilised. It involved in-depth interviews among eight firms in the food & allied industry and two consulting institutions. Based on this a case study had been developed. The results may be considered suggestive rather than conclusive and are based on the exclusive interpretations of the researcher. The responses were gathered from one to two respondents per firm. It would have been better to collect opinions from multiple respondents. This also applies to the mail survey.

In terms of further research, several recommendations can be made:

It would be of interest to change the scope of the study. The conclusions drawn may differ from industry to industry, as it can be assumed that the chemical industry reacts totally different from the automotive industry. Those industries highly affected by the ecological issue, may specifically provide further impulses for industries, which are less developed with regard to the ecological issue. In this context, it would be of interest whether the findings in Germany reflect a scenario common in Europe. The questionnaire used in this study may be selected for this purpose in order to be able to compare conclusions.

The framework covering the strongly supportive factors of pursuing an 'enviropreneurial' approach, outlined in this research, may be used to analyse the behaviour of firms. Further empirical examination may be required to test and validate the strategic management model, or others e.g. the life-cycle model. The objective should be to gain more knowledge on the validity of the models and thus be able to develop them further. Future research is required, identifying tools, systems and processes utilised by ecologically successful

firms and, especially, drawing conclusions from their experience in practice. Based on these results improvements, new forms and ways may be developed and the know-how transferred to ecologically less developed firms. Furthermore, empirical research on cultural and organisational issues would be of great interest, as it plays an ever increasing role. Hence, an area of further research should focus on the transformation process, analysing how firms became ecologically oriented. This could be achieved by selecting highly developed, ecologically oriented firms. However, it may be advisable to analyse this through longitudinal studies.

Moreover, the findings of the study formulated in the hypotheses  $H_{(6)}$  -  $H_{(15)}$ , outlined in the conclusion, offer recommendations for further research. It would be of interest to analyse in more detail the relationship between "approaching a proactive ecological style" and "size of firms". Small- and medium sized firms play an important role in the economy and make an excessive contribution to economic growth. If the conclusion i.e. that smaller sized firms rather adopt a reactive ecological approach should be validated, then the research should analyse the reasons and barriers of not being proactively oriented. This may provide interesting impulses for knowledge on the environmental management research area with regard to the SME sector and provide ways to overcome possible barriers.

The findings may indicate that entrepreneurial firms perform better than conservative firms. The performance of firms adopting a proactive ecological approach could not be validated statistically. However, the results indicate a possible relationship. Therefore, further research is required on the relationship between "ecological approach" and "performance". Furthermore, it may be necessary to use alternative measures of performance. The usage and effectiveness of environmental reporting and environmental performance measurement tools are of interest.

Finally, empirical research should focus on all components of approaching the path of sustainable development. A further area of research should be conducted in testing and validating the proposed models for approaching sustainable development, as outlined in the literature. This would enable to analyse to which degree they are useful. Finally, further research should also look into governmental activities.

# Appendix A

## Questionnaire Forms

**Ljiljana Mitic, Dipl.-Betriebswirt, B.A. (Hons)**

**Tel: 0231/121210 (private)**

**Fax: 0231/9441357 (office)**

**Fax: 0231/121210**

**eMail: lmitic.v07@metronet.de**

Dortmund,

«Firma1»

«Abt»

Herrn «Vorname» «Name»

«Straße»

«PLZ» «Ort»

Dear «Titel»«Name»,

your company also faces a strongly changed business environment. Yesterday, companies were operating locally and today they have to face a global challenge. Time between the product idea and the market launch has dramatically decreased. Factors such as "Information" and "Time" start to dominate competition. An ecological orientation gains strategic importance. New rules (*of the game*) ask for an appropriate organisational structure and business orientation.

Within my doctorate I would like to investigate the organisational structure and business orientation of approximately 500 companies in their respective markets.

The objective of the doctorate is to develop recommendations which might help branches to effectively react to the challenges of the market.

As the doctorate should just not present a "theoretical work" but should be derived from the practice, I have to rely on your support. The reply of the questionnaire should not take you more than 5 to 10 minutes. Please help with your input to secure the success of my work.

I assure you of the strictest anonymity and confidentiality. All information will be treated in the strictest confidence and no data will be published which can be identified as a response from a specific company. After the completion of the investigation, the outcome of the survey for your branch can be provided if desired.

If you need further information on the questionnaire or the investigation, please do not hesitate to contact me.

For your participation in this survey I would like to thank you in advance!

Yours sincerely,

# F A X C O V E R - S H E E T

DATE:

TO: Fr. L. Mitic

TEL: 0231 9441357

FAX: 0231 121210

FROM: see questionnaire page 8

**ATTENTION - SUBMITTAL TWO-SIDED !**

CONCERN:

Questionnaire

---

No. of pages (Coversheet incl.): 9

Message

Dear Mr

because of the missing flexibility of Deutsche Post AG, I regret not have been able to mark

the addressed envelope with the note "charge will be paid by addressee".

Please send me your completed questionnaire unstamped - if necessary - as your answer is very

important for the achievement of my target.

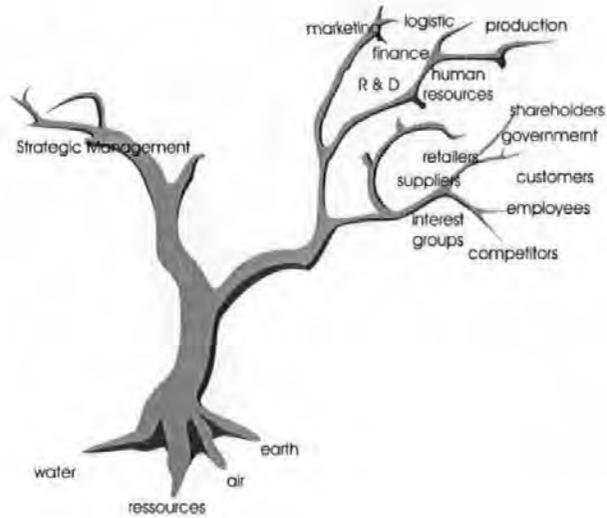
As an alternative you can use the prepared fax cover-sheet.

Many thanks,

Your Ljiljana Mitic



# Managing In A Changing World



compiled by

**Ljiljana Mitic**

Dipl.-Betriebswirt, B.A. (Hons)

Tel: 0231 / 12 12 10 (private)  
0231 / 94 41 35 7 (office)

Fax: 0231 / 12 12 10



**This survey is supported by:**

Dr. Maximilian Gege, B.A.U.M. e.V.

Prof. Dr. Frantz, Fachhochschule Dortmund

FAX



<b>1) Please indicate your primary area of business activity</b>	<i>(Please check one)</i>
	Chemical Industry <input type="checkbox"/> Energy, Water Supply, Coal Mining <input type="checkbox"/> Steel, Machinery, Motor Vehicle Manufacturing <input type="checkbox"/> Electronic Industry <input type="checkbox"/> Metal Production and Processing <input type="checkbox"/> Wood, Paper, Printing Industry <input type="checkbox"/> Food & Allied Industry <input type="checkbox"/> Service Sector <input type="checkbox"/> Trade <input type="checkbox"/> Mineral Oil Processing <input type="checkbox"/> Other: (please specify) _____

<b>2) How many employees are currently employed in your business unit ?</b>	
<i>(Please check one)</i>	1 - 250 <input type="checkbox"/> 251 - 500 <input type="checkbox"/> 501 - 1.000 <input type="checkbox"/> 1.001 - 2.000 <input type="checkbox"/> 2.001 - 5.000 <input type="checkbox"/> 5.001 - 10.000 <input type="checkbox"/> 10.001 - 20.000 <input type="checkbox"/> 20.001 + <input type="checkbox"/>

<b>3) Please indicate your primary source of customers</b>	<i>(Please check one)</i>
	Trading Companies <input type="checkbox"/> Processing Industry <input type="checkbox"/> Service Firms <input type="checkbox"/> Public Authorities <input type="checkbox"/> Consumers <input type="checkbox"/> Other: (please specify) _____

<b>4) How have your firm's respectively your business unit's total sales (settled by additionally bought firms) developed over the last 3 years :</b>	<i>(Please check one)</i>
<p style="text-align: right;">Increased by more than 30% <input type="checkbox"/></p> <p style="text-align: right;">Increased by between 11-30% <input type="checkbox"/></p> <p style="text-align: right;">Increased by between 1-10% <input type="checkbox"/></p> <p style="text-align: right;">Remained unchanged <input type="checkbox"/></p> <p style="text-align: right;">Decreased by between 1-10% <input type="checkbox"/></p> <p style="text-align: right;">Decreased by more than 10% <input type="checkbox"/></p>	

<b>5) Please indicate which of the following statements best describes your firm's generic strategic position</b>	<i>(Please check one)</i>
<p style="text-align: right;">Pursuing a cost leadership strategy <input type="checkbox"/></p> <p style="text-align: right;">Pursuing a differentiation / quality strategy <input type="checkbox"/></p> <p style="text-align: right;">Putting emphasis on satisfying specific market segments <input type="checkbox"/></p>	

<b>6) Please indicate the market your firm mainly operates in</b>	<i>(Please check one)</i>
<p style="text-align: right;">Regional <input type="checkbox"/></p> <p style="text-align: right;">National <input type="checkbox"/></p> <p style="text-align: right;">National and EC-Countries <input type="checkbox"/></p> <p style="text-align: right;">Global <input type="checkbox"/></p>	

<b>7) How are your firm's respectively your business unit's total sales (settled by additionally bought firms) expected to develop over the next 3 years :</b>	<i>(Please check one)</i>
<p style="text-align: right;">Increase by more than 30% <input type="checkbox"/></p> <p style="text-align: right;">Increase by between 11-30% <input type="checkbox"/></p> <p style="text-align: right;">Increase by between 1-10% <input type="checkbox"/></p> <p style="text-align: right;">Remain unchanged <input type="checkbox"/></p> <p style="text-align: right;">Decrease by between 1-10% <input type="checkbox"/></p> <p style="text-align: right;">Decrease by more than 10% <input type="checkbox"/></p>	

**8) Please validate the statements about organisational structures and indicate to which extent each applies for your firm**

*(Please check one per line)*

	1 does not apply	2 scarcely applies	3 partly applies	4 applies	5 strongly applies
• There are few hierarchical layers in the firm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The organisational structure includes project teams, matrix structures or special task forces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Decision-making powers are decentralised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• A problem solving process relies more on ad hoc solutions than on existing regulations or procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• There are vertically and horizontally open channels of communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Financial and operating information is shared and flow quite freely throughout the firm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Creativity is fostered, developed and encouraged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm's structure encourages and promotes innovation and risk taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm's culture allows for getting things done even if this means disregarding formal procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The requirements of situation and each employee's personality define proper on-job behaviour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**9) Please validate the statements about your firm's strategic posture and indicate to which extent each applies**

*(Please check one per line)*

	<b>1 does not apply</b>	<b>2 scarcely applies</b>	<b>3 partly applies</b>	<b>4 applies</b>	<b>5 strongly applies</b>
• The general preparedness to take risks is seen as a key to growth and survival	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm pursues a policy of growth primarily through external financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm has a proclivity for risk-projects aiming at achieving high returns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm pursues the objective to stabilize current businesses, additionally attempting to identify new market opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm adopts a proactive, aggressive posture in order to maximise the probability of exploiting potential opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm is often the first business to introduce new products or services, administrative techniques, operating technologies, etc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm typically initiates actions forcing competitors to respond to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm actively assesses external information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Strategic objectives are based on innovation, new products and processes, opportunities and risk taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• My firm has a strong emphasis on R&D, technological leadership and innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10) Please validate the statements about the external environment within which your firm operates**

*(Please check one per line)*

	1 does not apply	2 scarcely applies	3 partly applies	4 applies	5 strongly applies
• The business environment is very risky. A 'wrong step' might ruin my firm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The economic development has become far less predictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The technological development has become far less predictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Strong price competition dominates our business environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Strong quality competition dominates our business environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The rate of innovation dramatically increases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Market activities of our competitors have become far less predictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The customer behaviour has become far less predictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**11) Please validate the statements about the external environment, taking the ecological aspect into consideration, within which your firm operates**

*(Please check one per line)*

	1 does not apply	2 scarcely applies	3 partly applies	4 applies	5 strongly applies
• My firm is increasingly influenced by ecological aspects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The presence of ecologically oriented competitors is increasing in our market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Development of various ecologically oriented technologies has increased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The influence of ecological regulations on my firm is increasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The preparedness of our customers to pay a higher price for ecologically oriented products or services is seen as quite high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The demand for ecologically oriented products and processes has increased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12) a) Please validate the statements with respect to the ecological orientation of your firm  
 b) and indicate whether your firm already reacts accordingly

(Please check twice per line)

	a) The statement generally ..... to my firm					b) My firm already reacts accordingly		
	1 does not apply	2 scarcely applies	3 partly applies	4 applies	5 strongly applies	6 today	7 concretely planned	8 not planned
• Firms face new market opportunities in an ecological sensitive business environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• New market segments can be developed with ecologically oriented products and procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The ecological aspects should be incorporated into the business' philosophy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Public relation activities contribute to the increasing ecological awareness of customers and stake- and shareholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Consistently pursuing an ecological protection concept improves the firm's competitiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ecological information should actively be incorporated into firm's activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ecological investments are seen as preventive measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ecologically related innovations lead to an improvement of the ecologically wholesomeness of firms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• In existing market segments with the ecological impact being regarded as high firms should withdraw from the market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Firms should be more oriented to ecologically oriented competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• With regard to the environmentalism a resistance strategy is worthwhile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Answering the following section is optional but would be extremely helpful and advantageous for the further course of the investigation and for further contact*

*You can be assured that completing this section will have no influence on the strict confidentiality of this survey!*

Name of firm: \_\_\_\_\_

Name of respondent: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Position in your firm:

Managing Director

Member of Board of Directors

Leading Employee

Other \_\_\_\_\_

*I would like to stay in contact for further co-operation and would like to be informed about the outcome of the survey:*

Yes

No

## **Appendix B**

### **Graphical Illustrations of Results**

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- Figure 6.2 Generic strategic position by Industry
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- Figure 6.6 Performance over the last 3 years by markets
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- Figure 6.44 Performance in the next 3 years of environmentally oriented firms on the basis of an entrepreneurial management style
- Figure 6.45 Ecological orientation vs. reactions

Figure 6.1 Sales over the last 3 years by size of firm

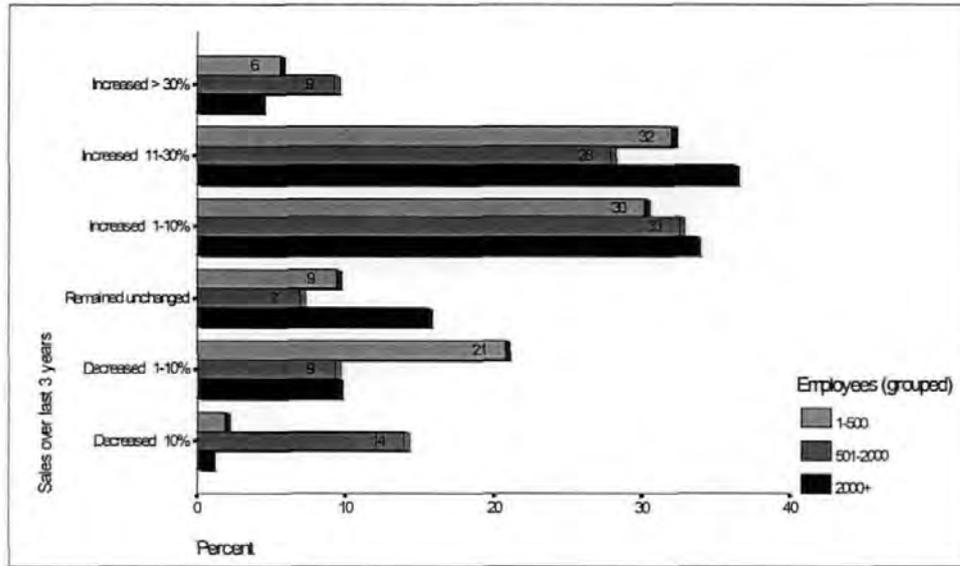


Figure 6.3 Generic strategic position by size of firm

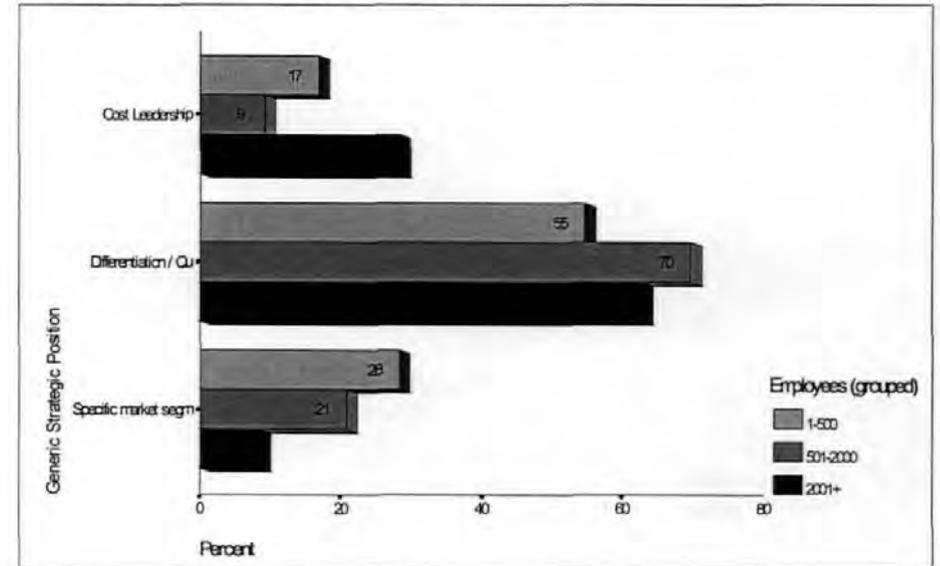


Figure 6.2 Generic strategic position by Industry

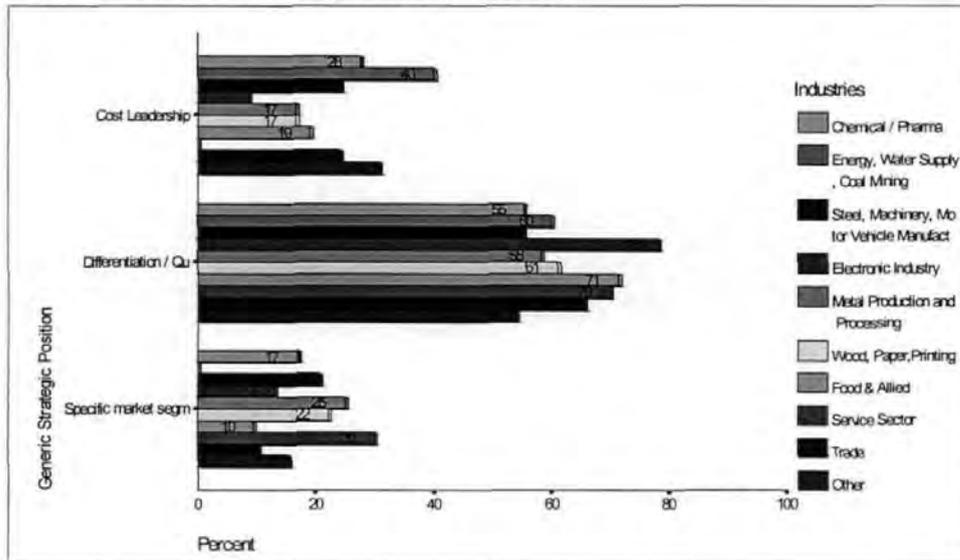


Figure 6.4 Generic strategic position by performance over the last 3 years

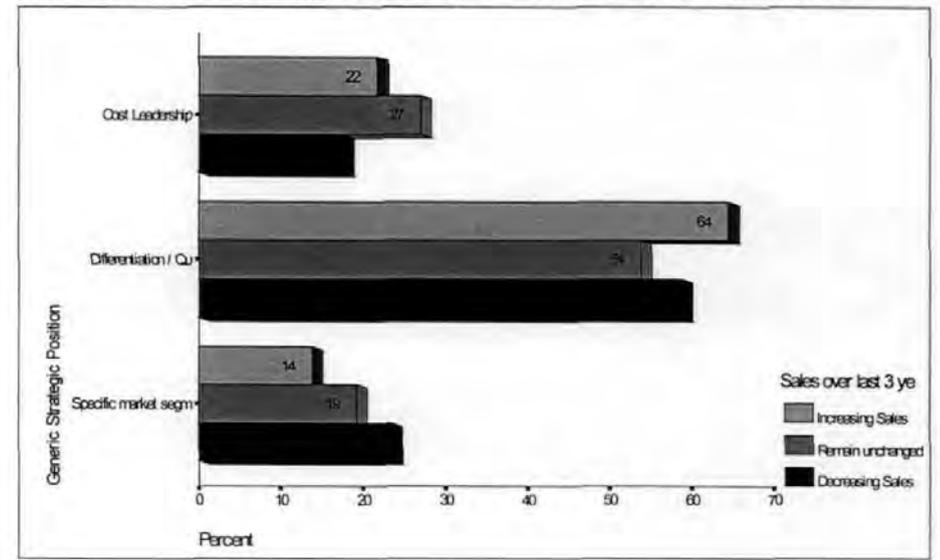


Figure 6.5 Markets by size of firm

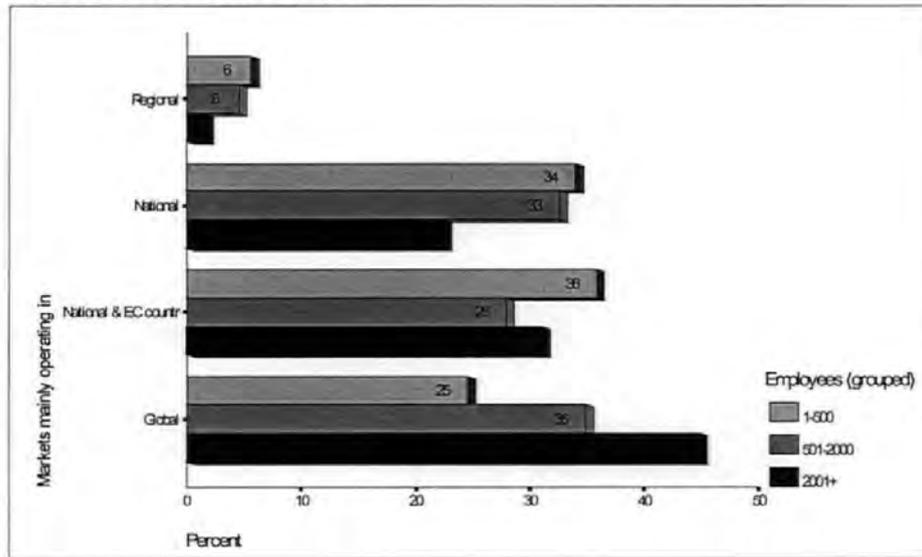


Figure 6.7 Expected performance in the next 3 years by size of firm

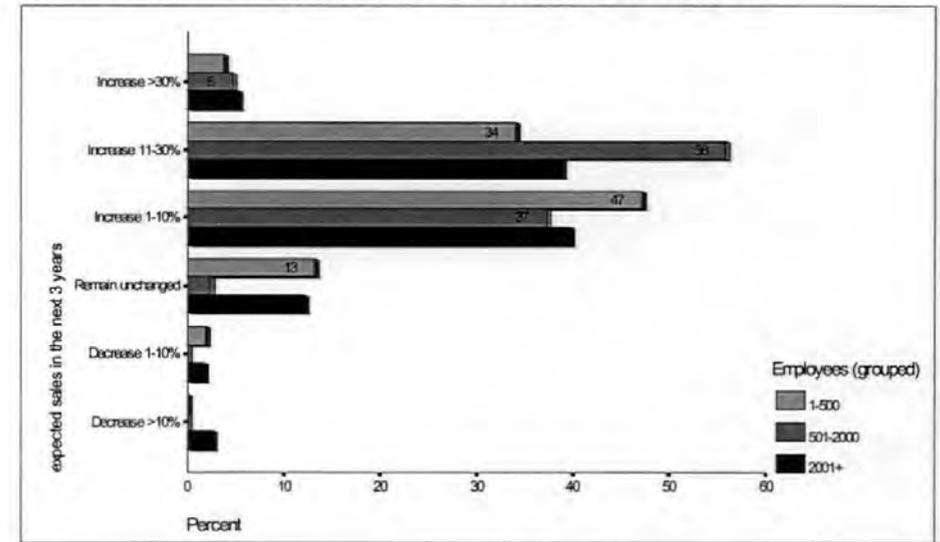


Figure 6.6 Performance over the last 3 years by markets

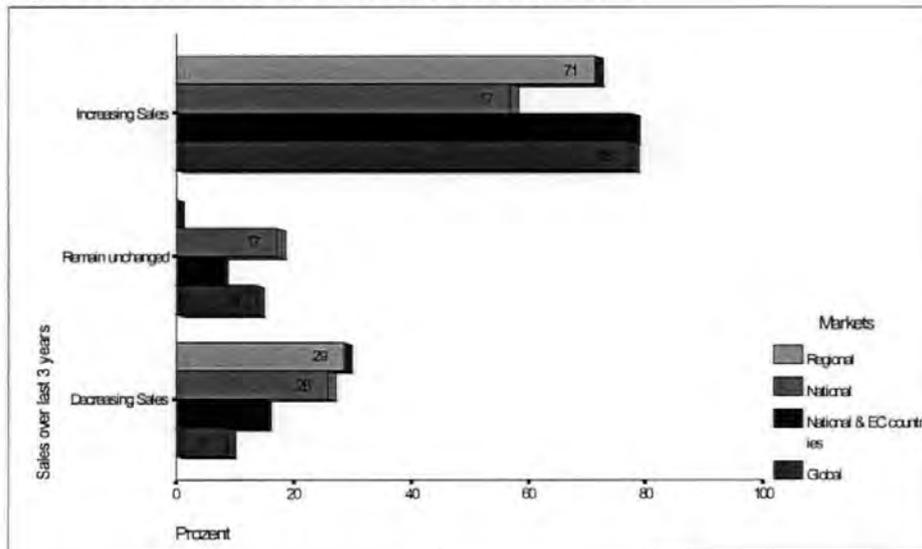


Figure 6.8 Expected performance in the next 3 years by performance over the last 3 years

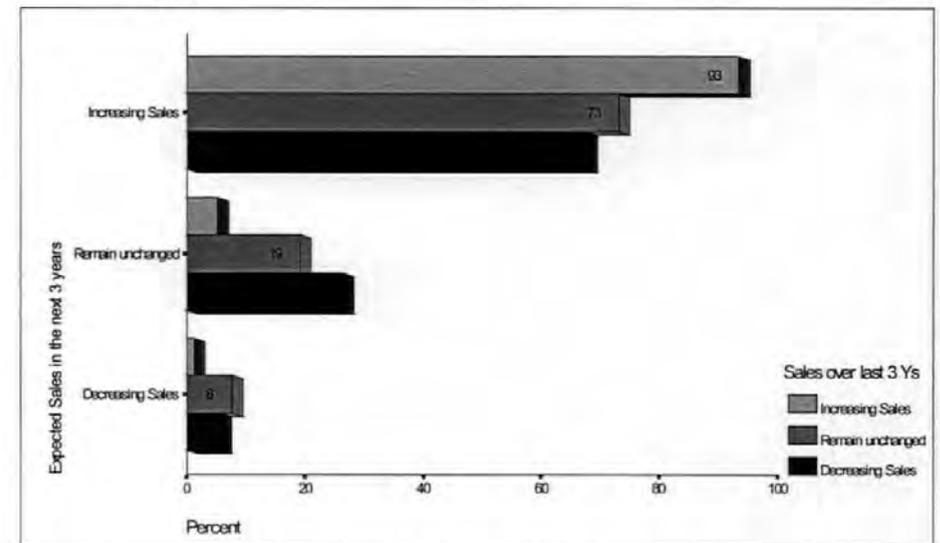


Figure 6.9 Expected performance in the next 3 years by generic strategic position

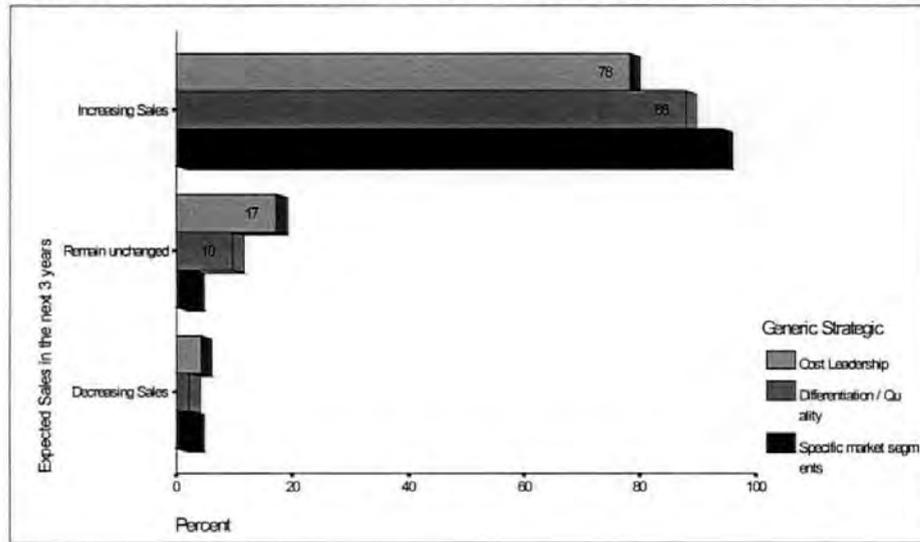


Figure 6.10 Expected performance in the next 3 years by markets

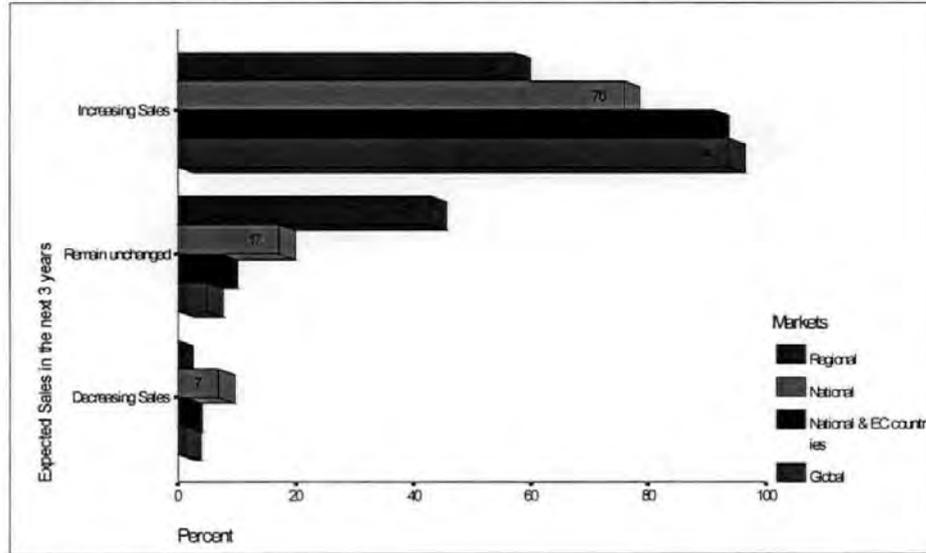


Figure 6.11 Rosette "Organisational structure & Management style"

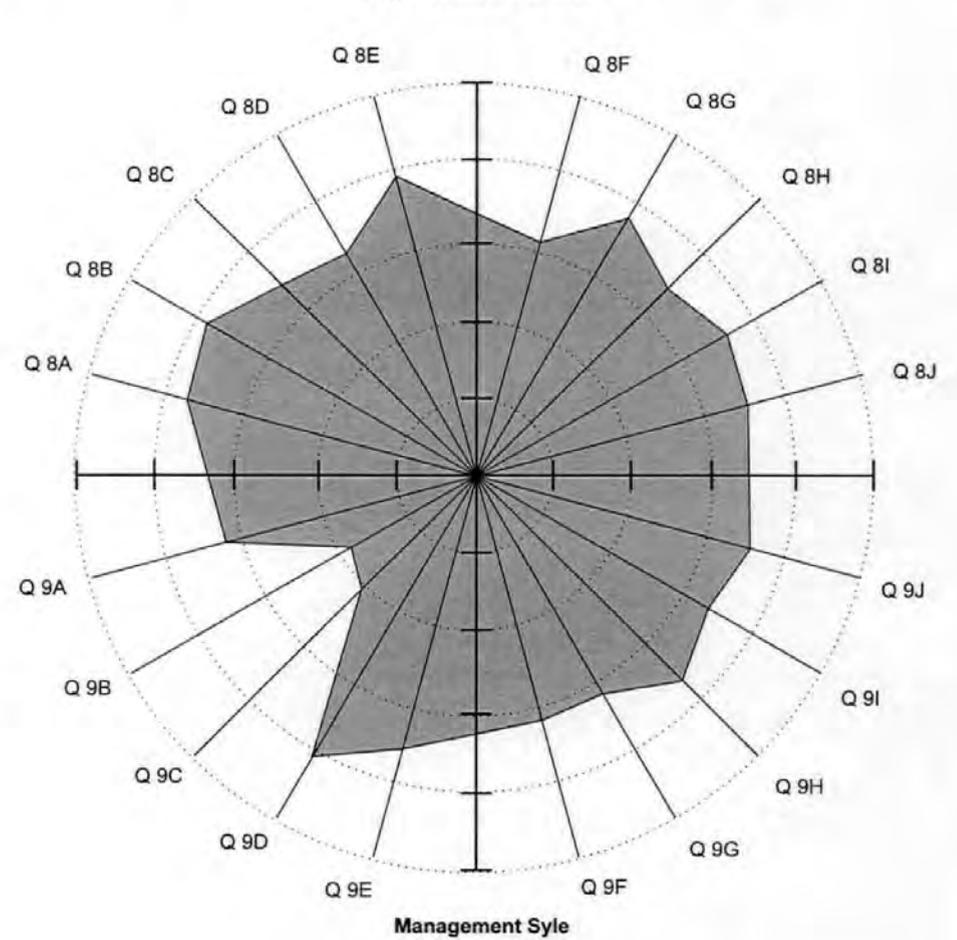


Figure 6.12 Boxplot - Question 8, 9, 10, 11, 12a

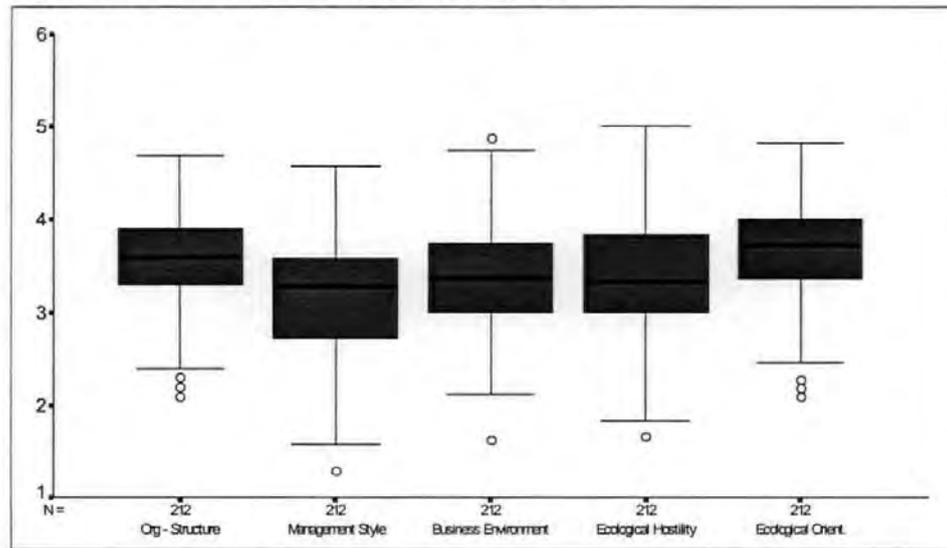


Figure 6.14 Organisational structure by performance over the last 3 years

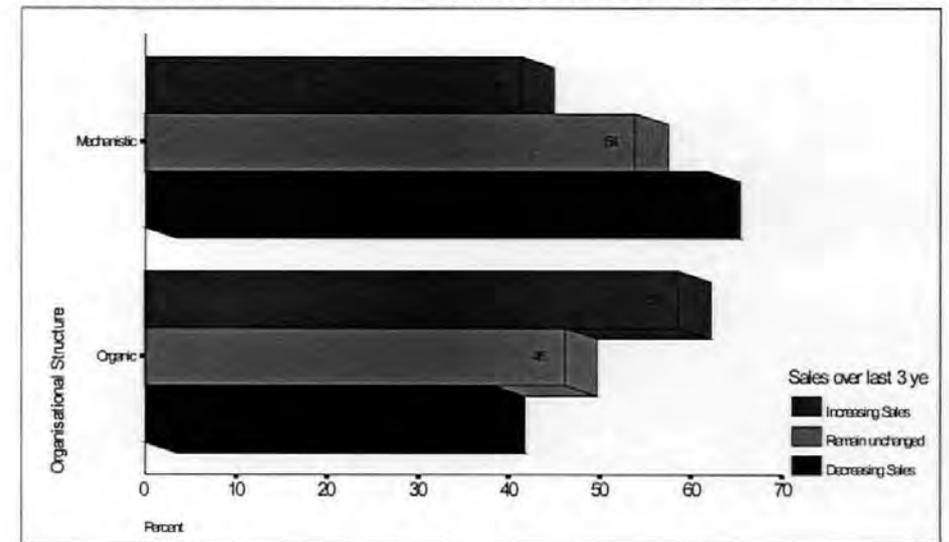


Figure 6.13 Boxplot "Organisational structure" by Industry

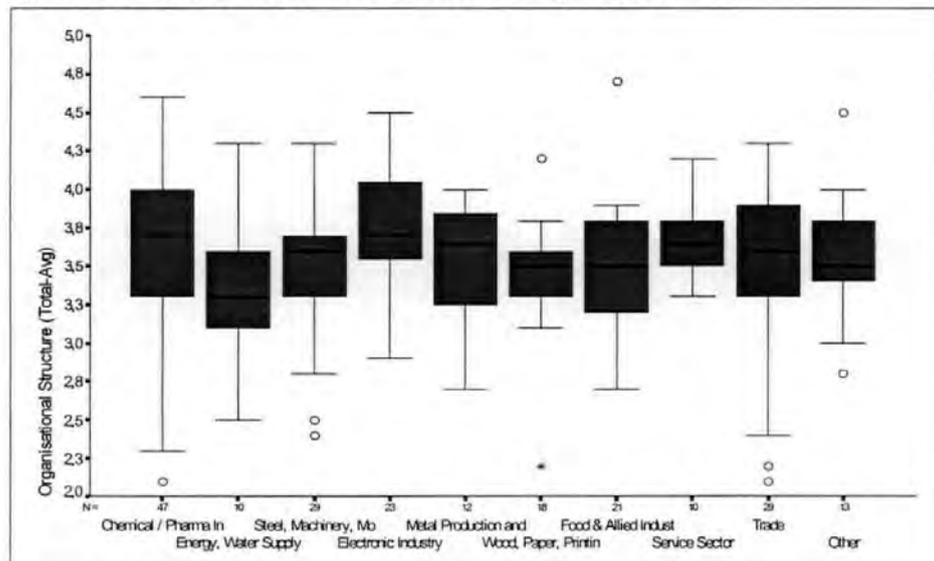


Figure 6.15 Organisational structure by expected performance over the next 3 years

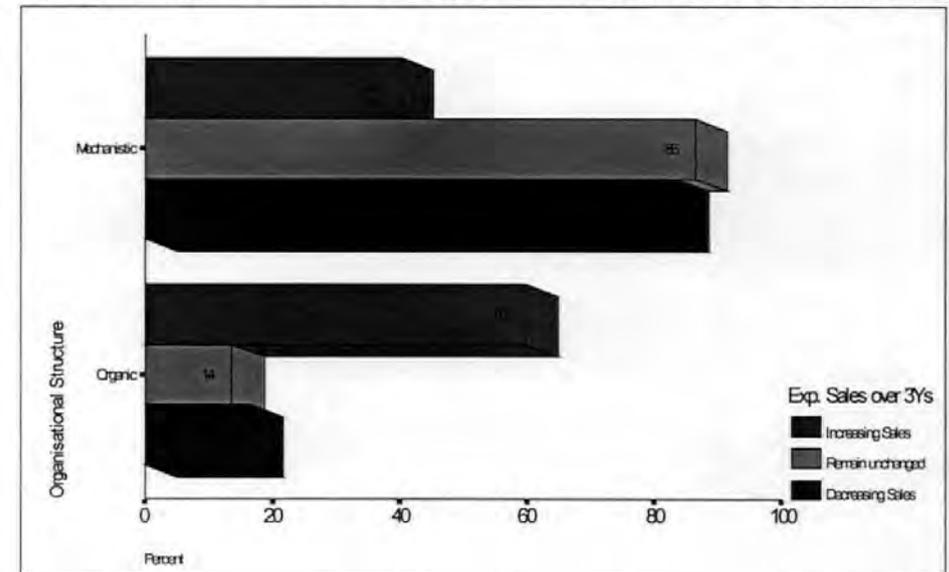


Figure 6.16 Boxplot "Management style" by Industry

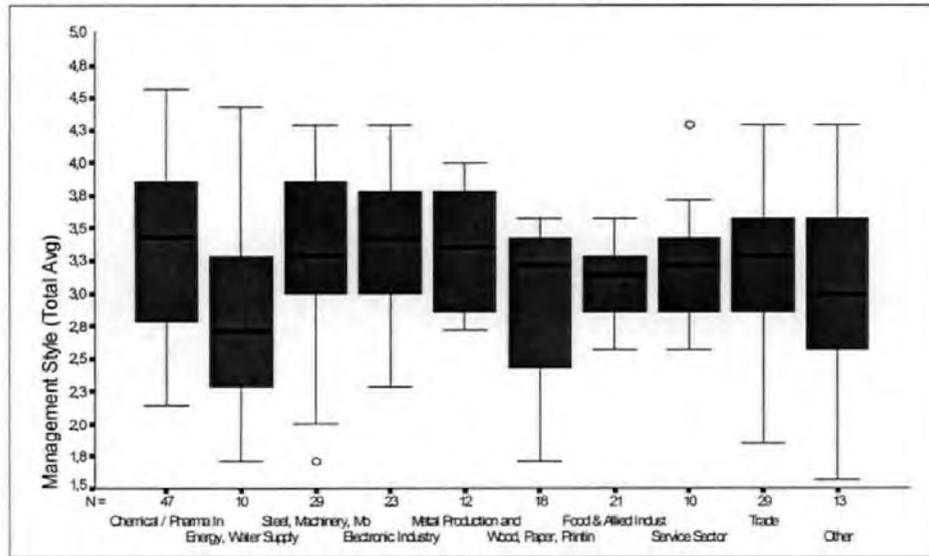


Figure 6.18 Expected performance over the next 3 years by management style

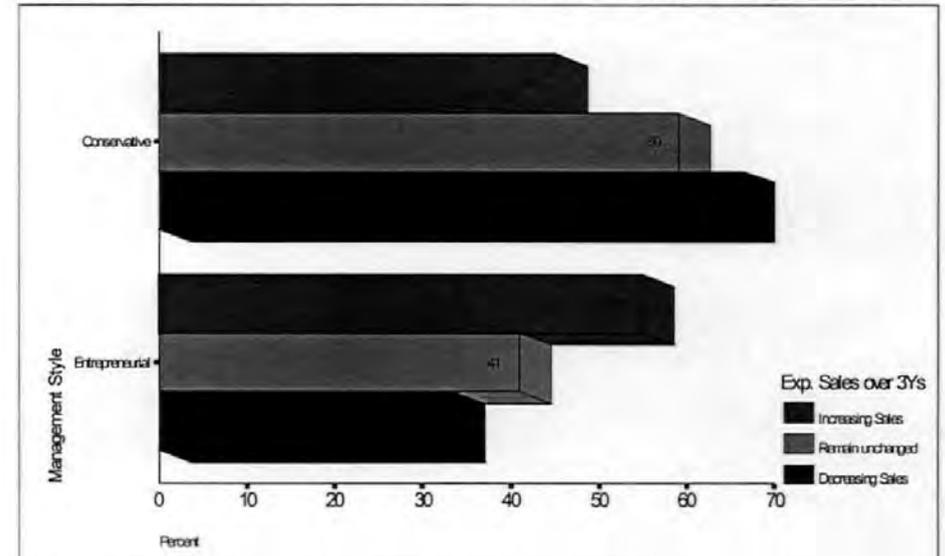


Figure 6.17 Management style by performance over the last 3 years

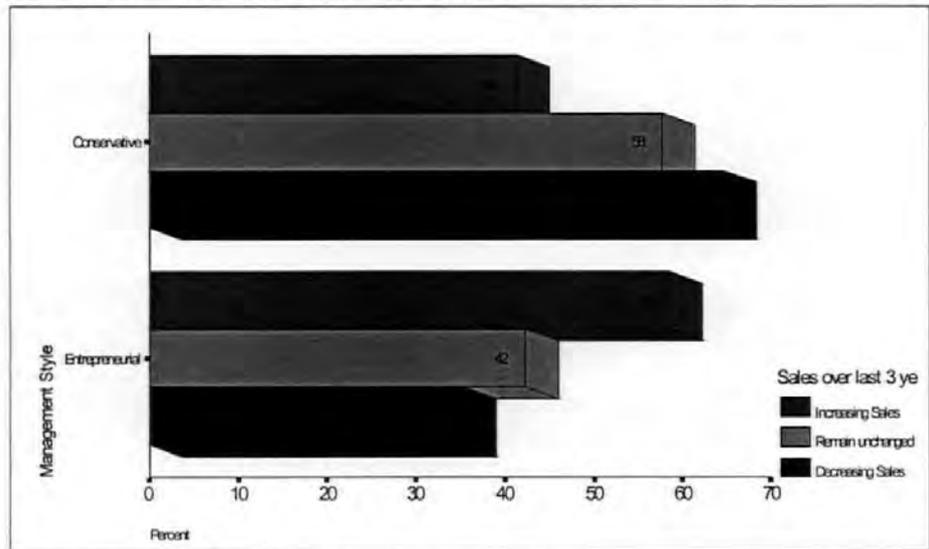


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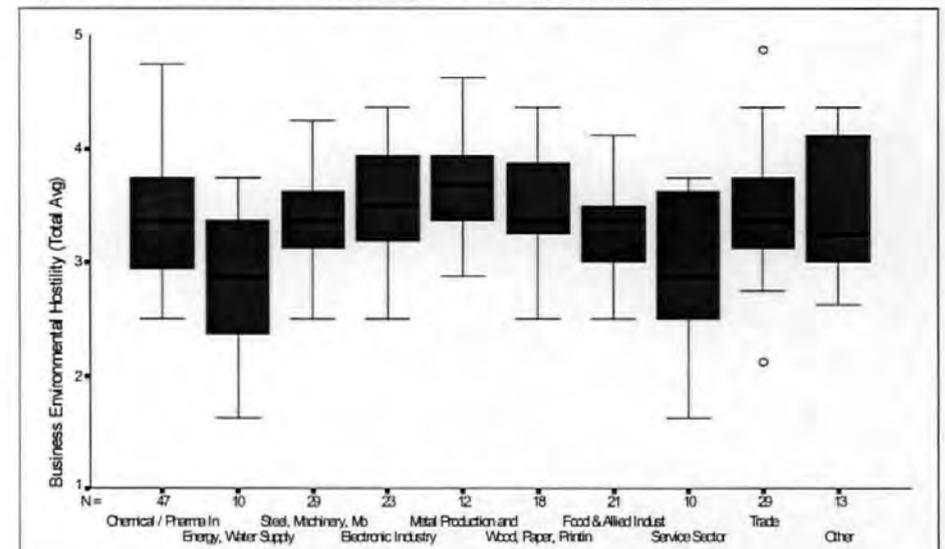


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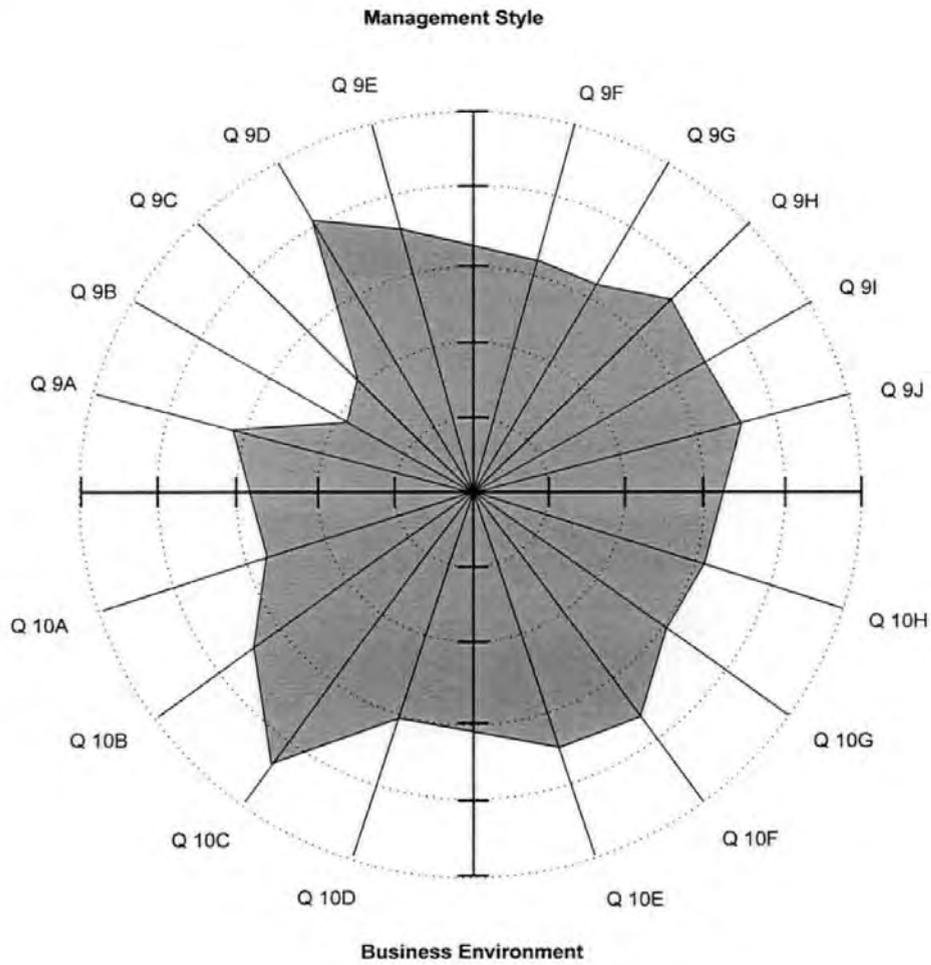


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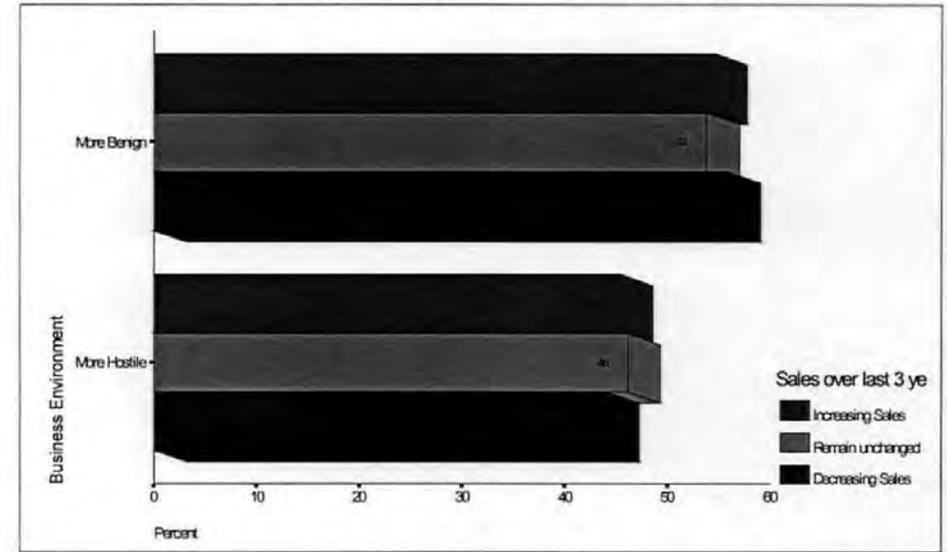


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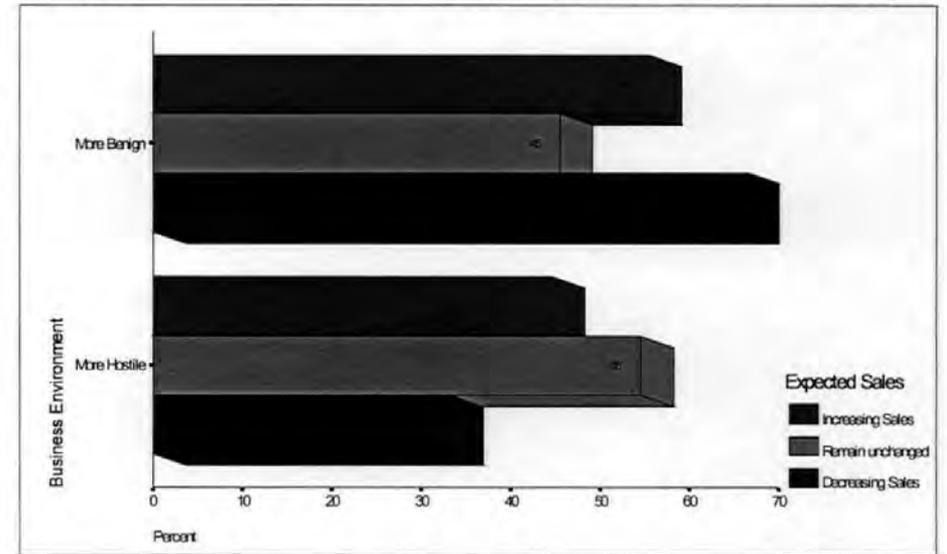


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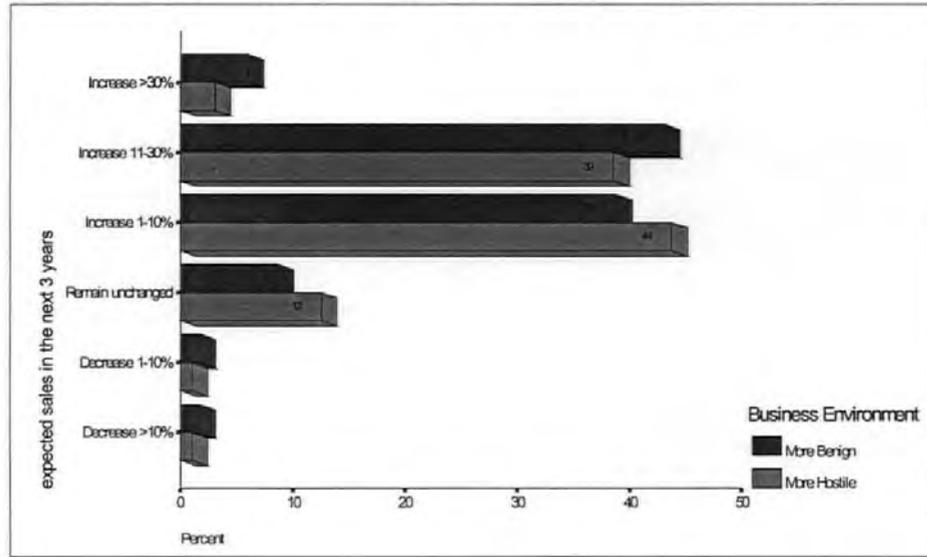


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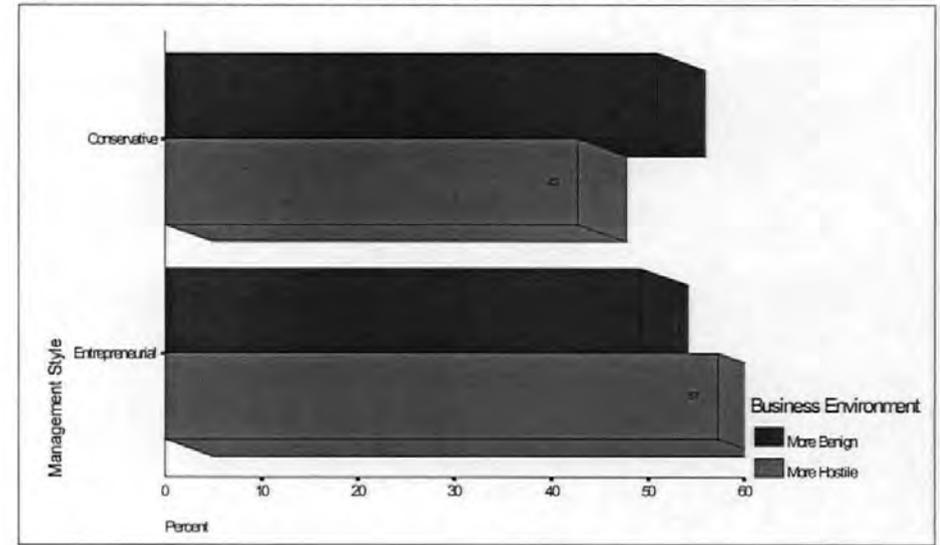


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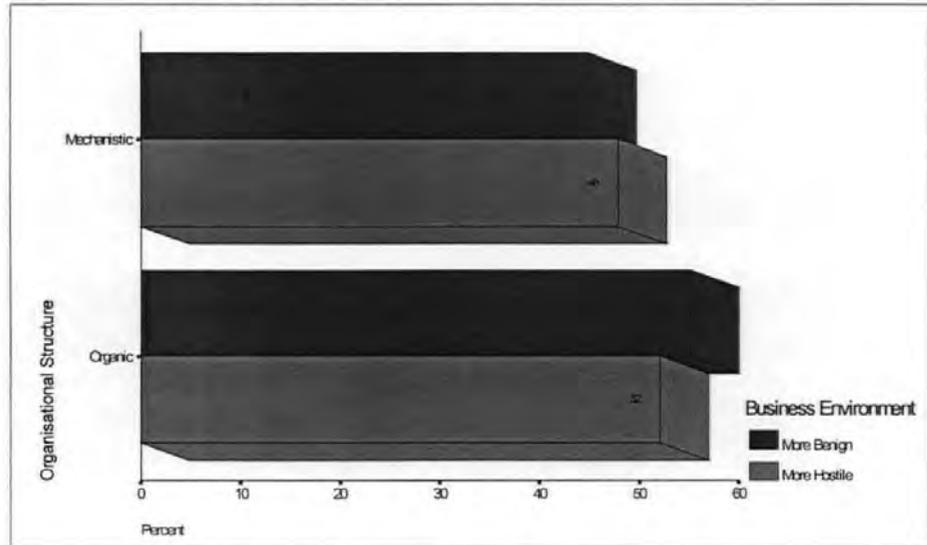


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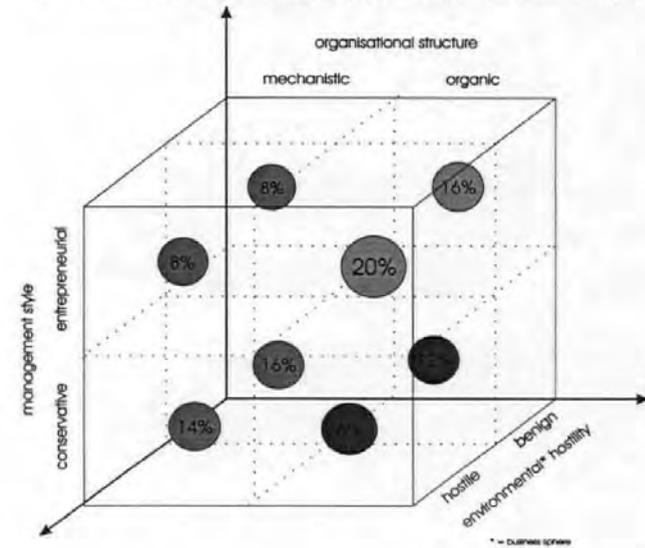


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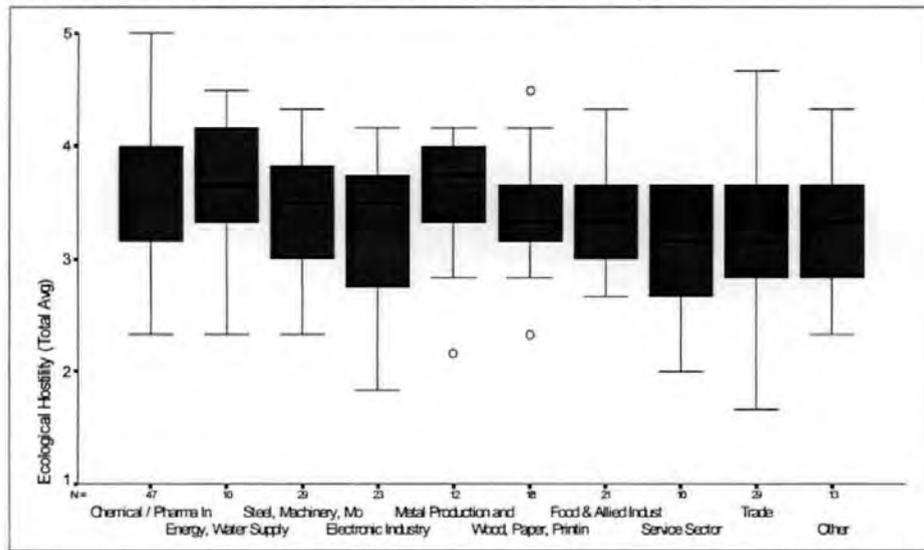


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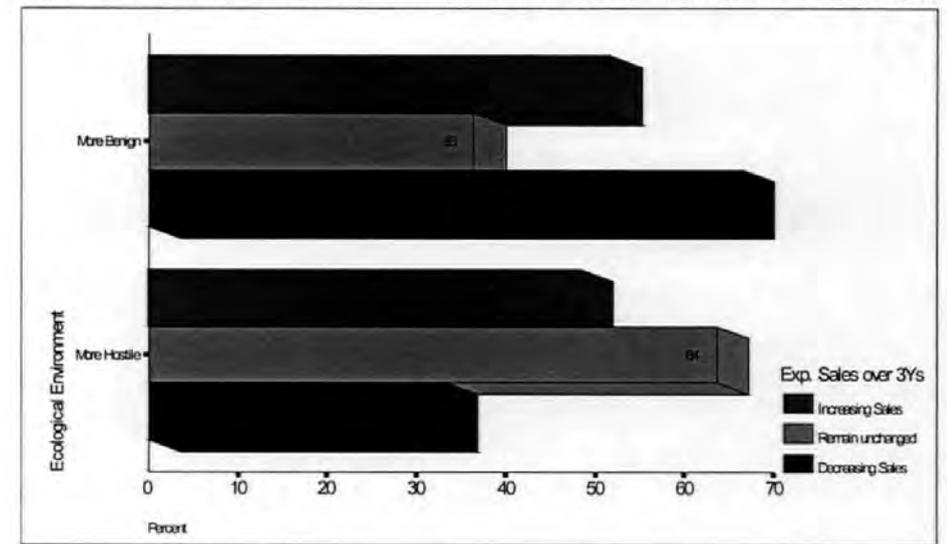


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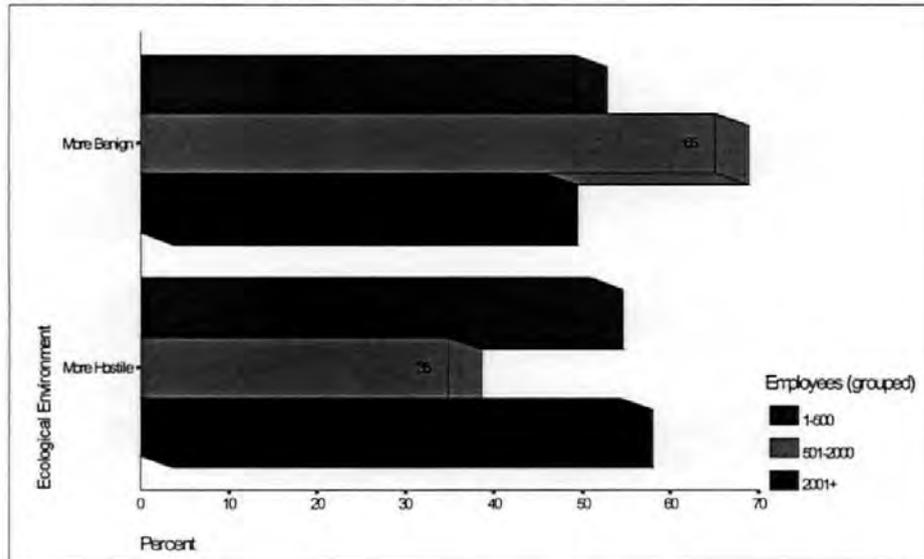


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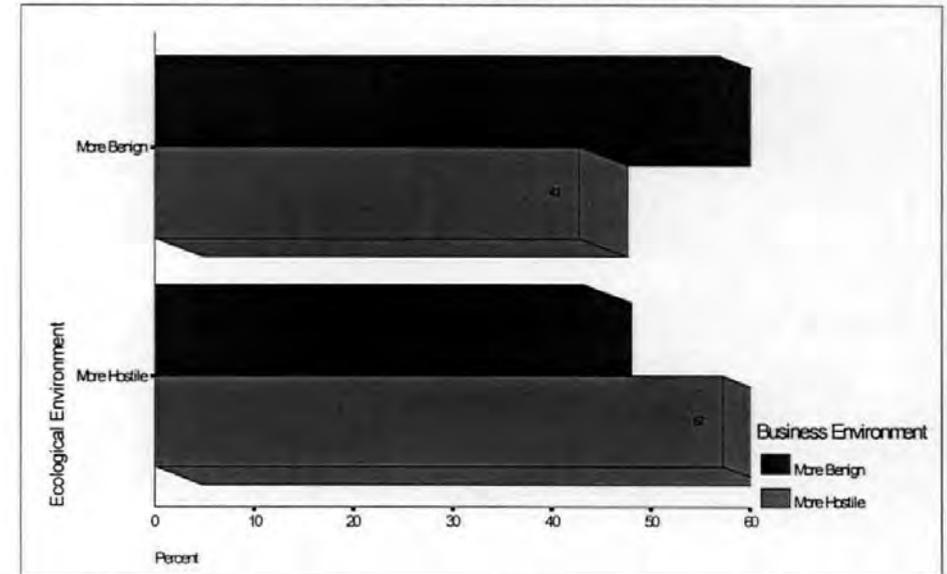


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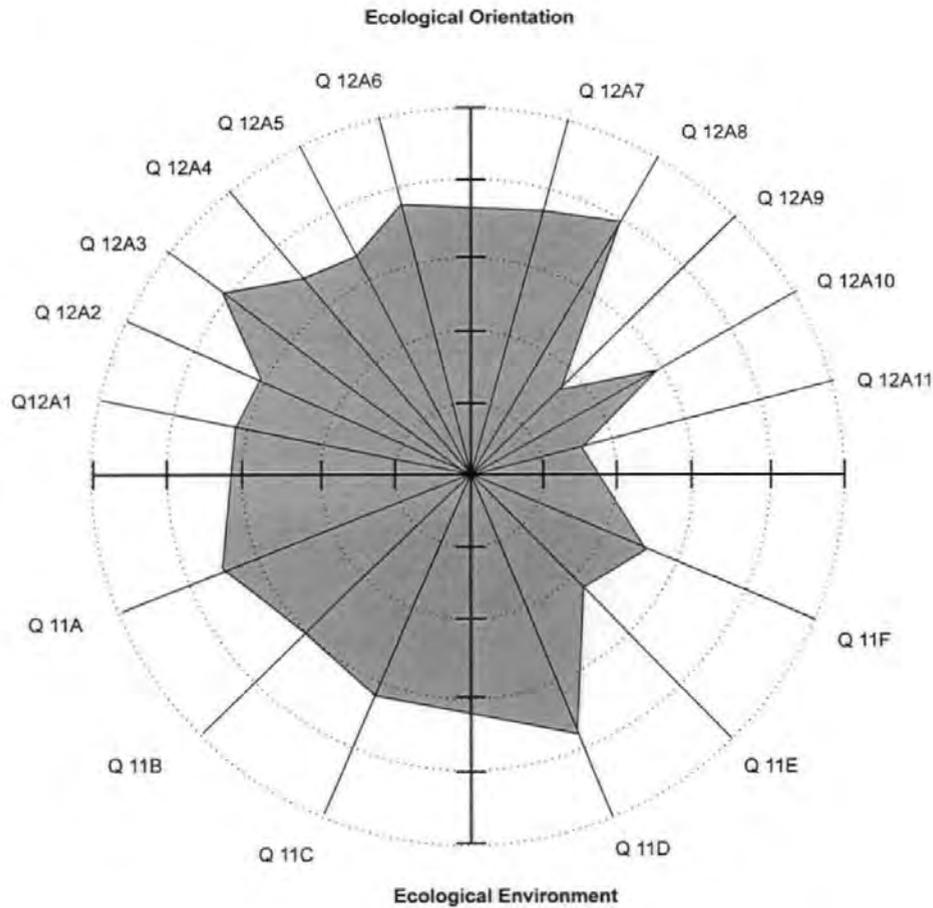


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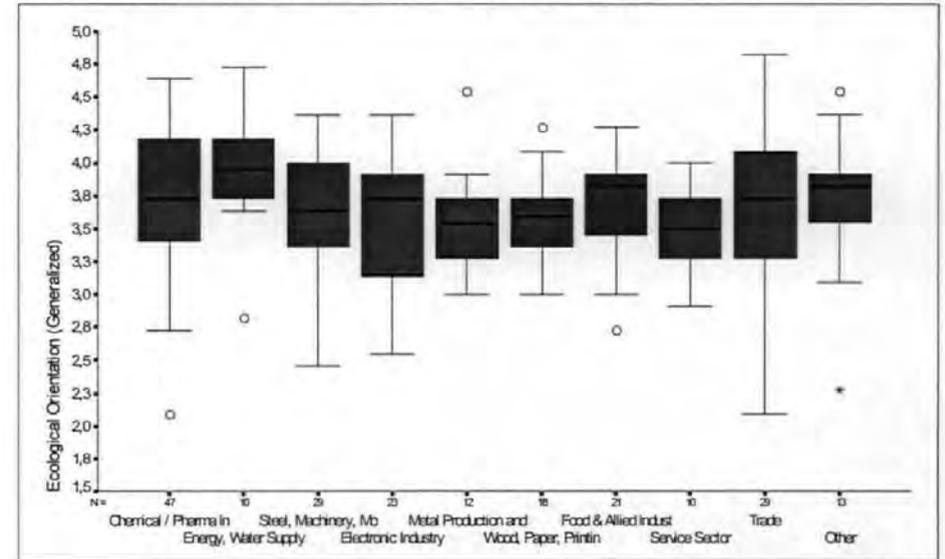


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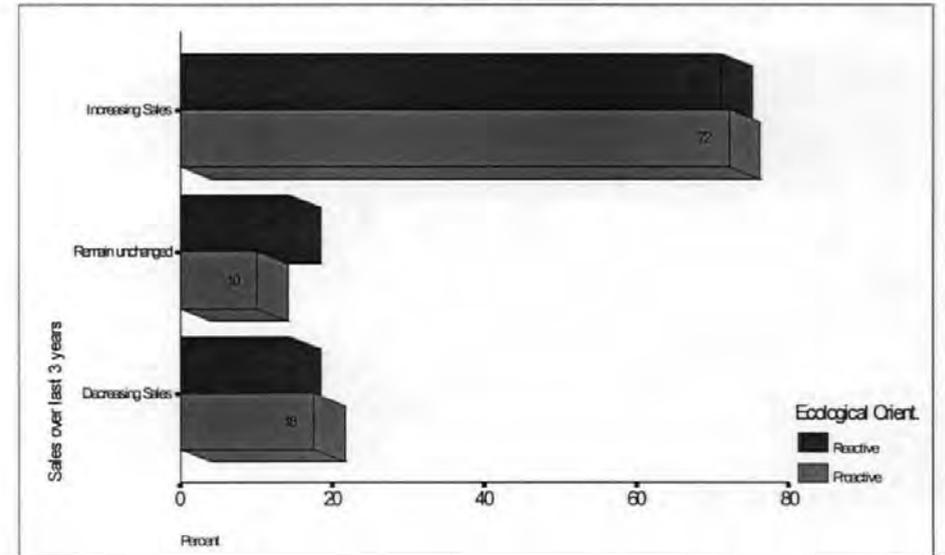


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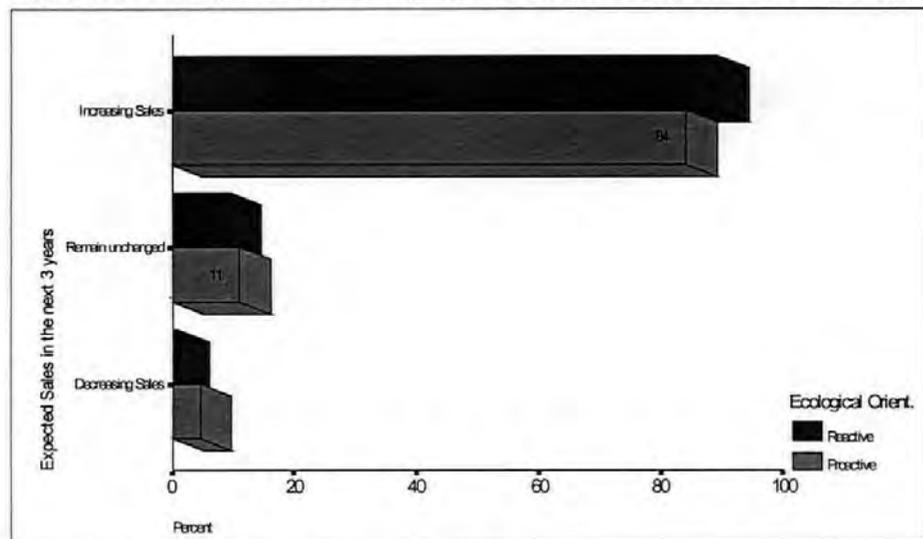


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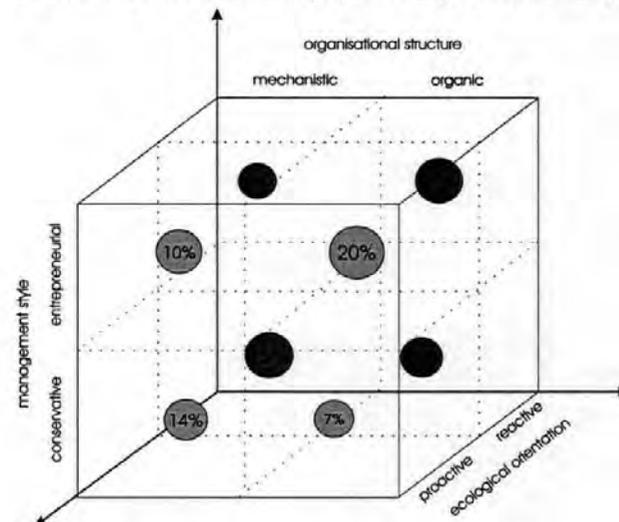


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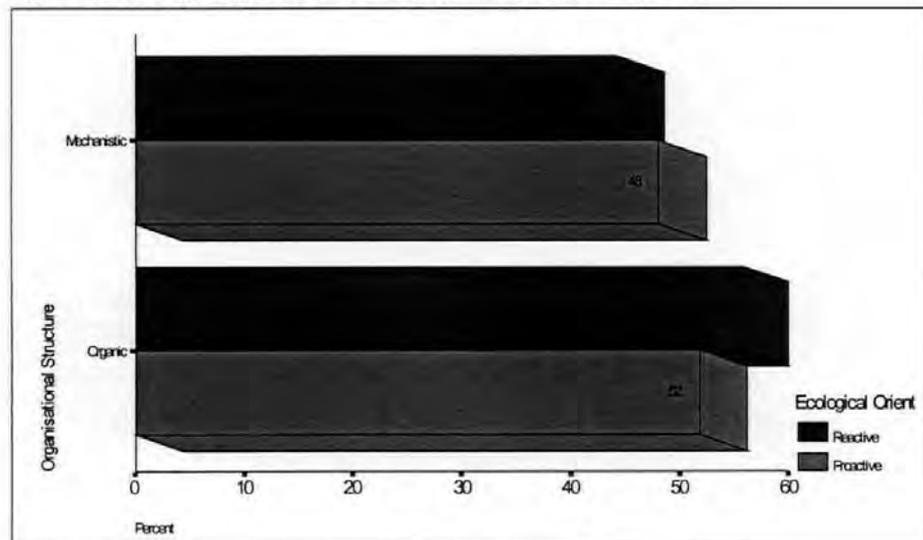


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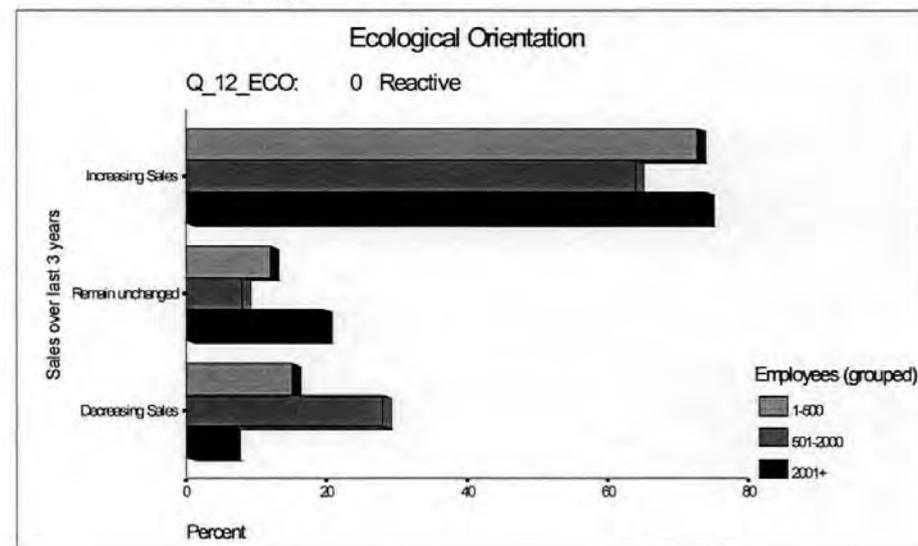


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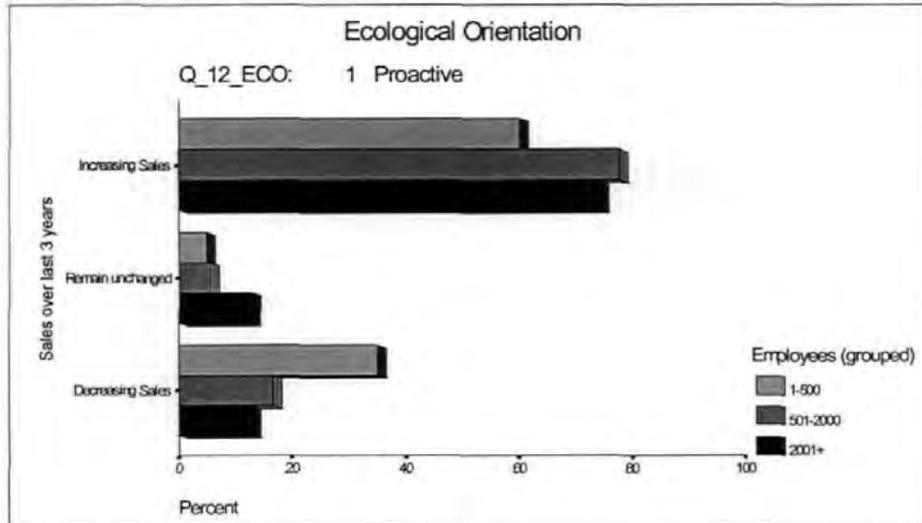


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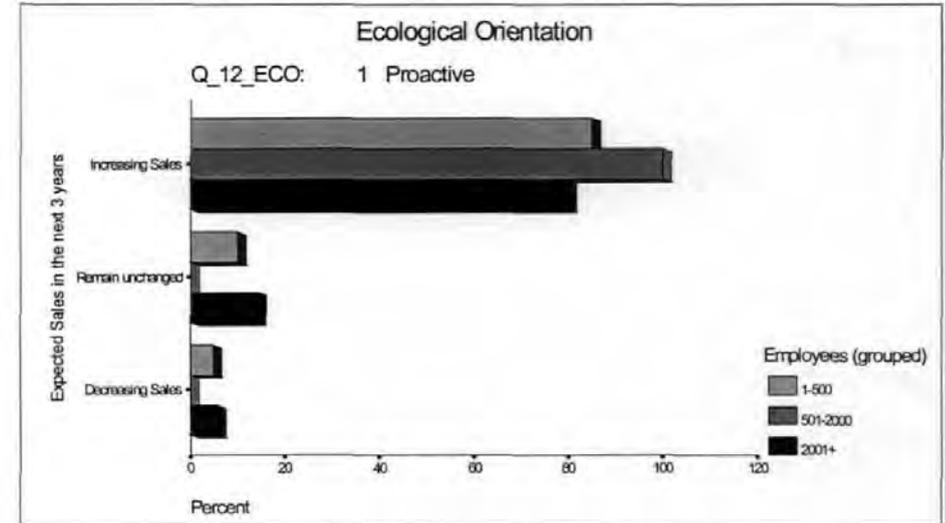


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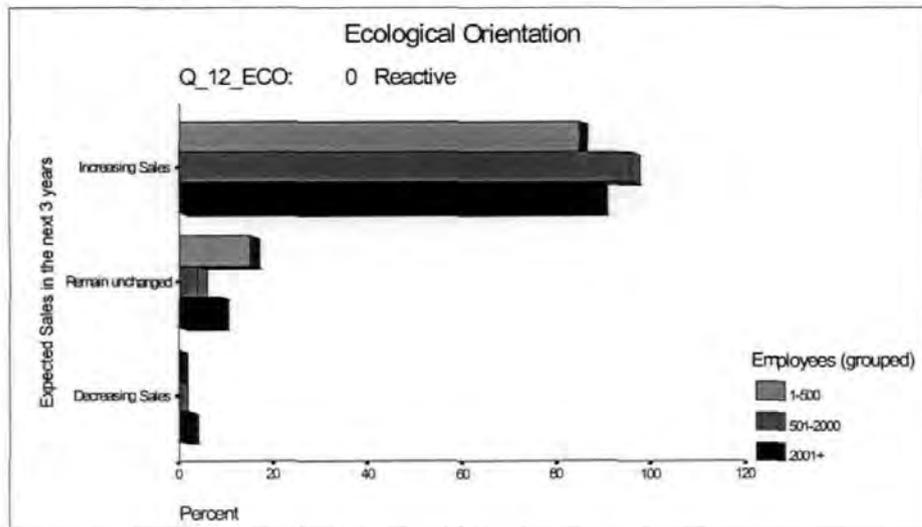


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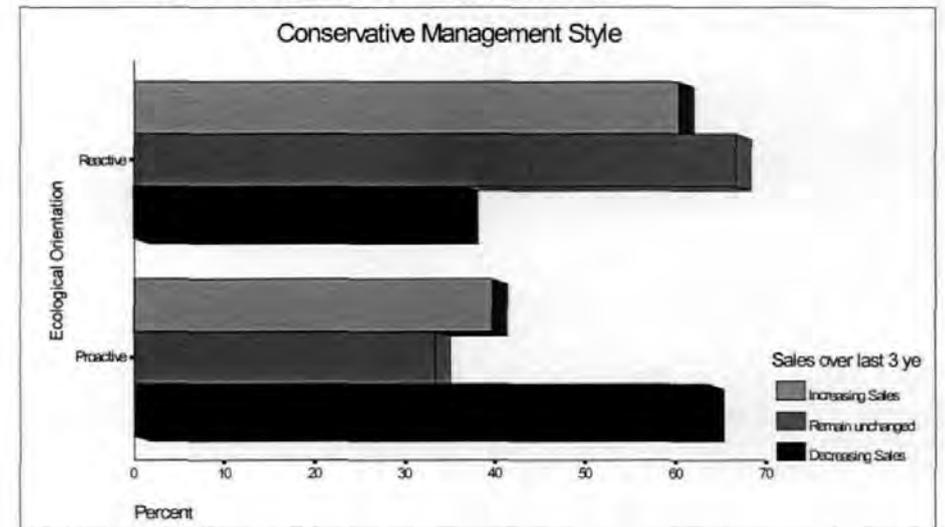


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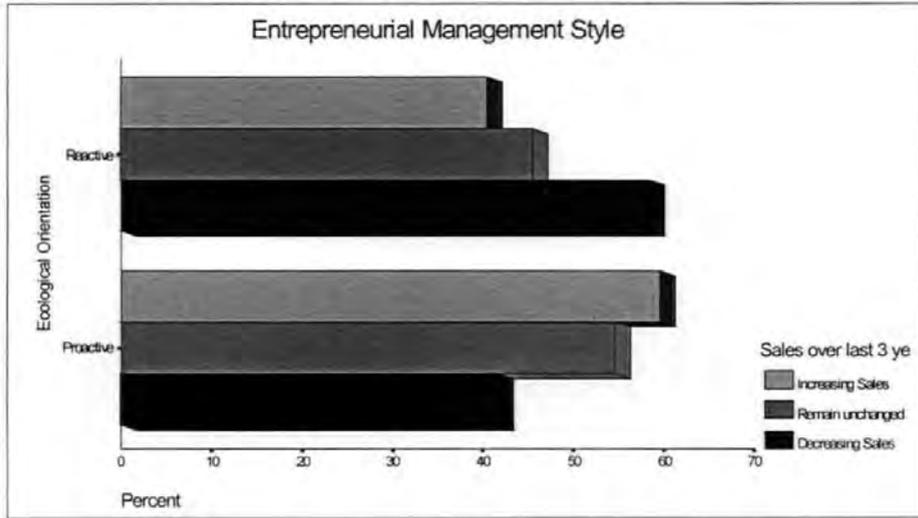


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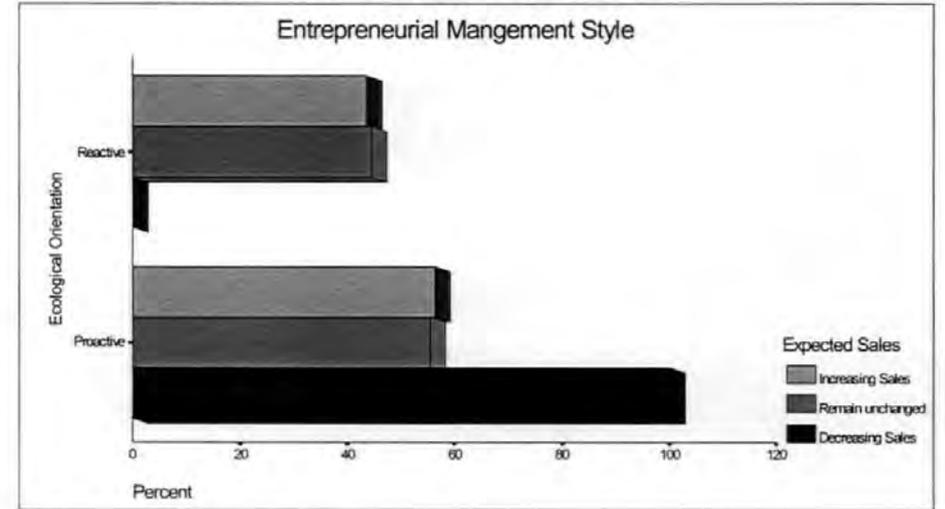


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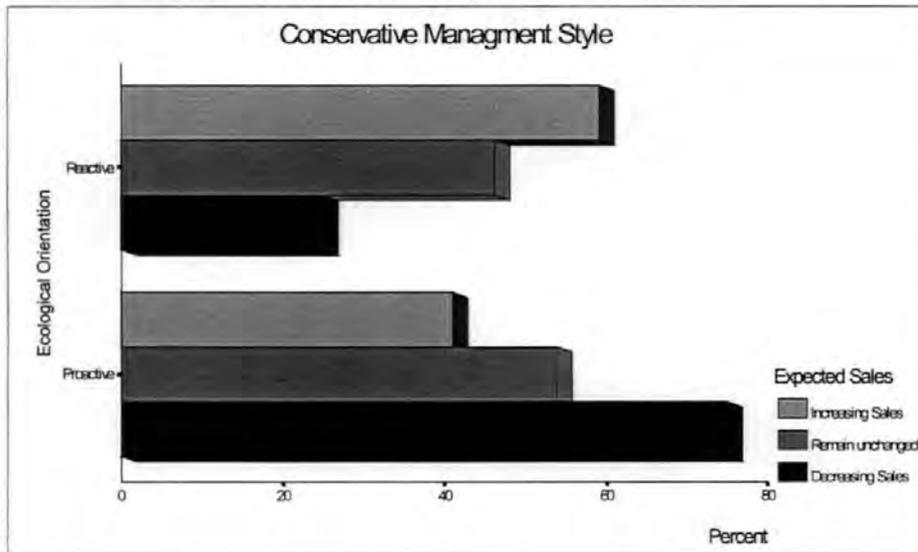
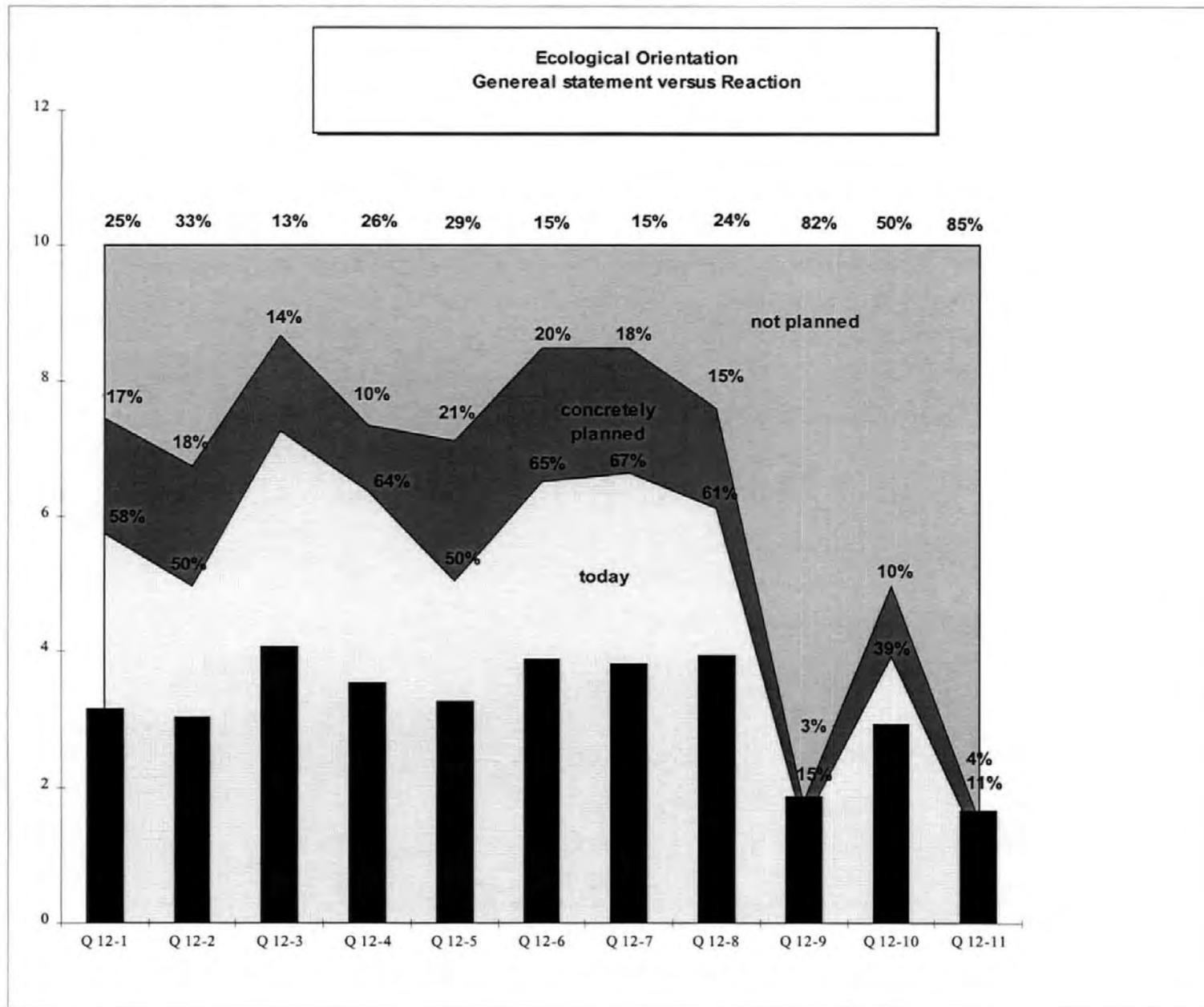


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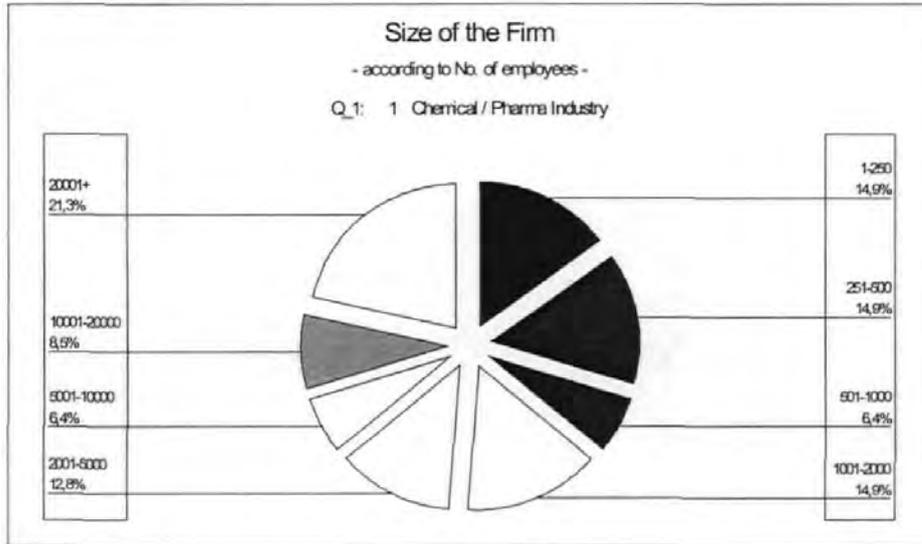


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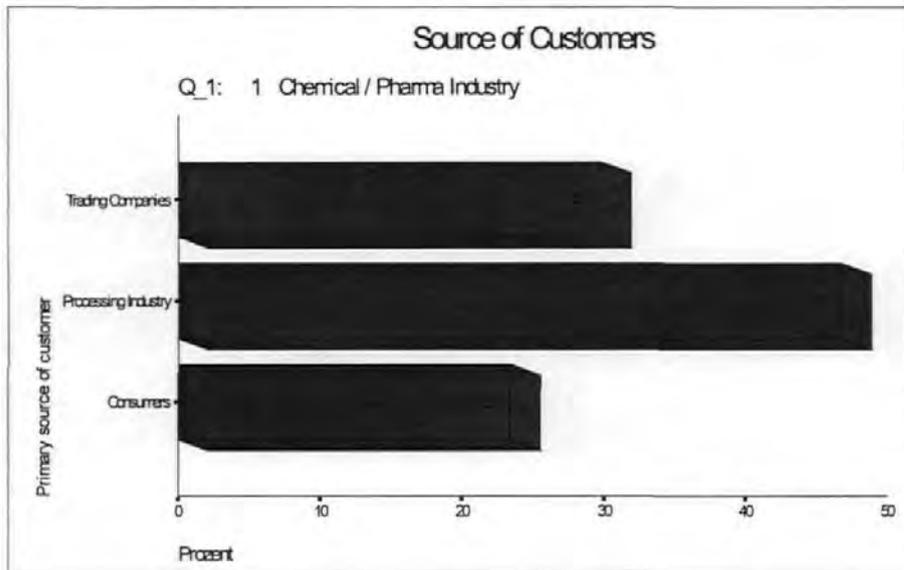


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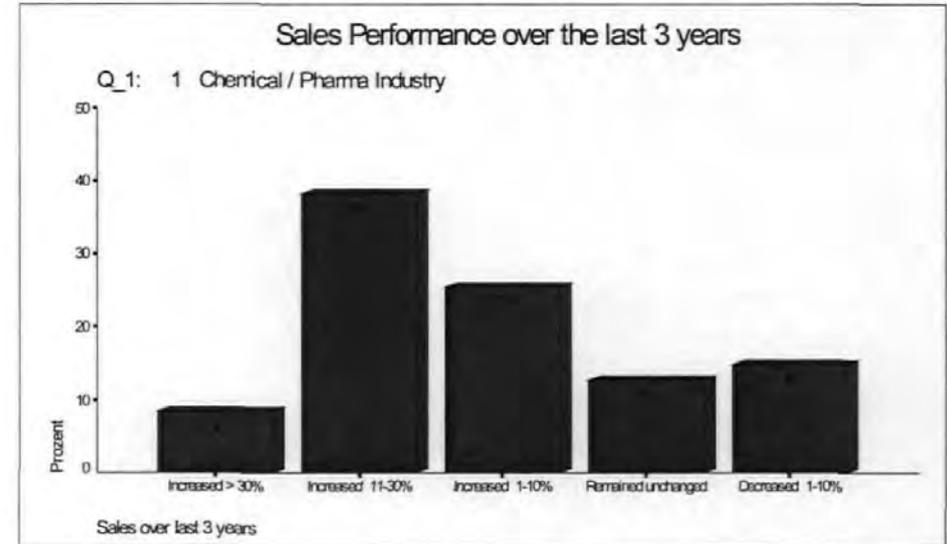


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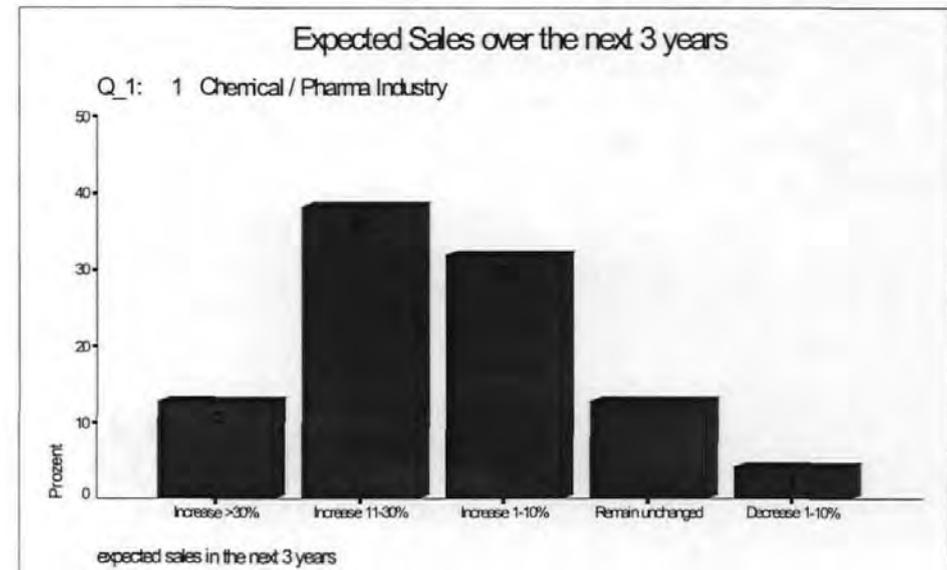


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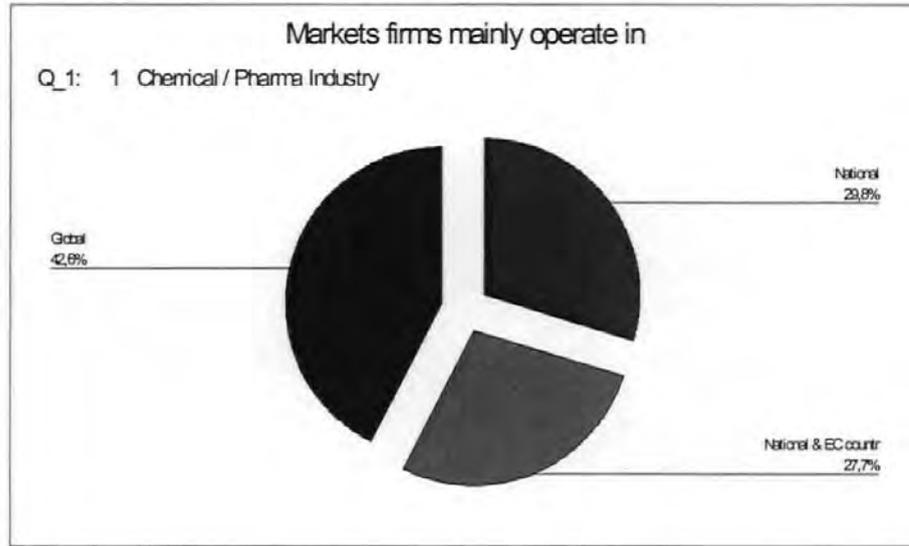


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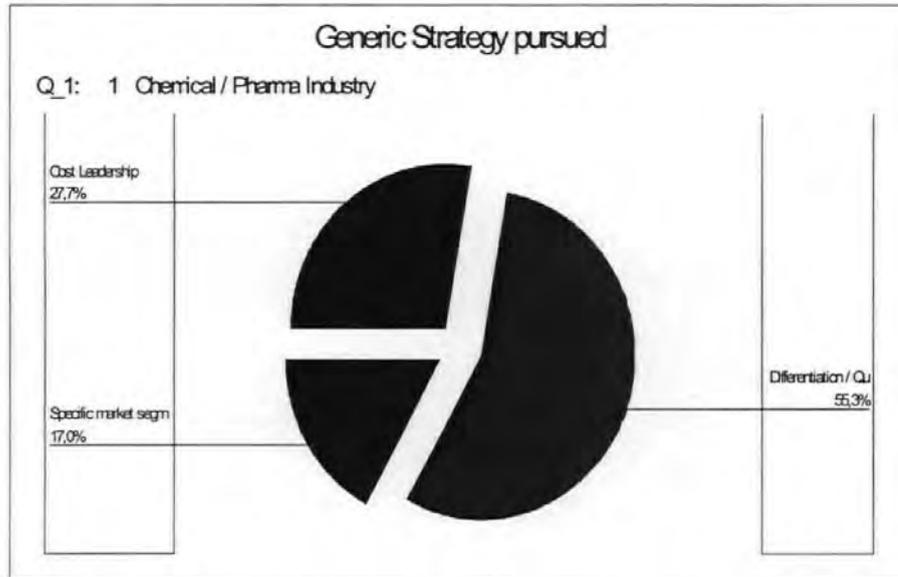


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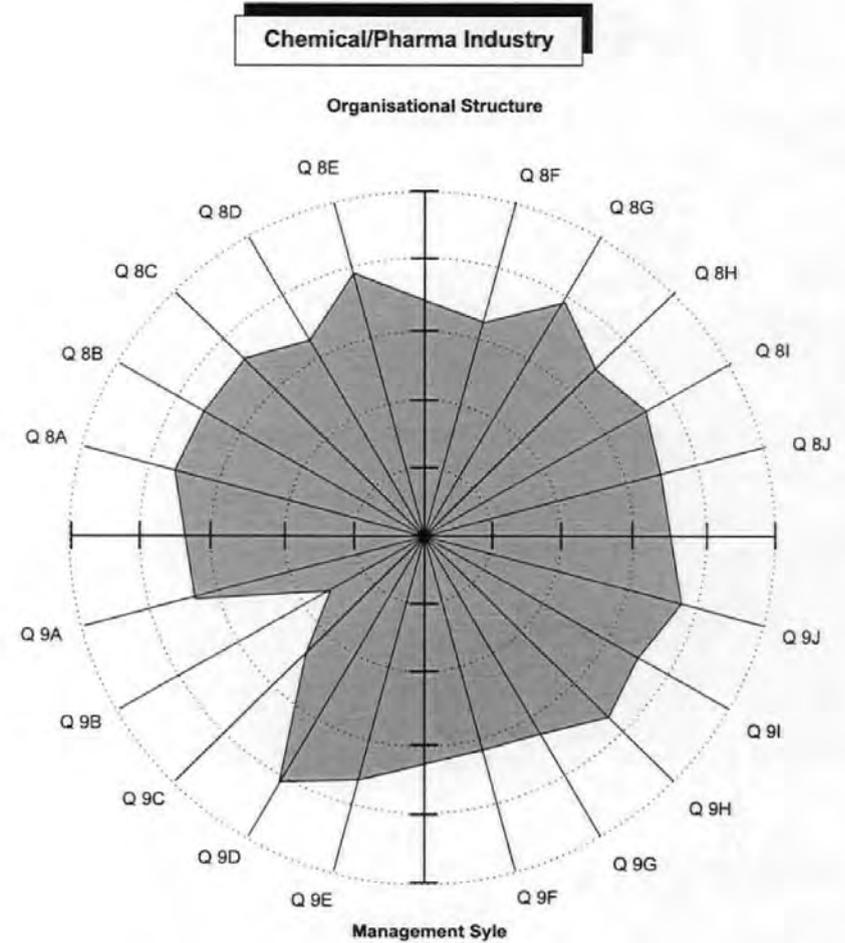


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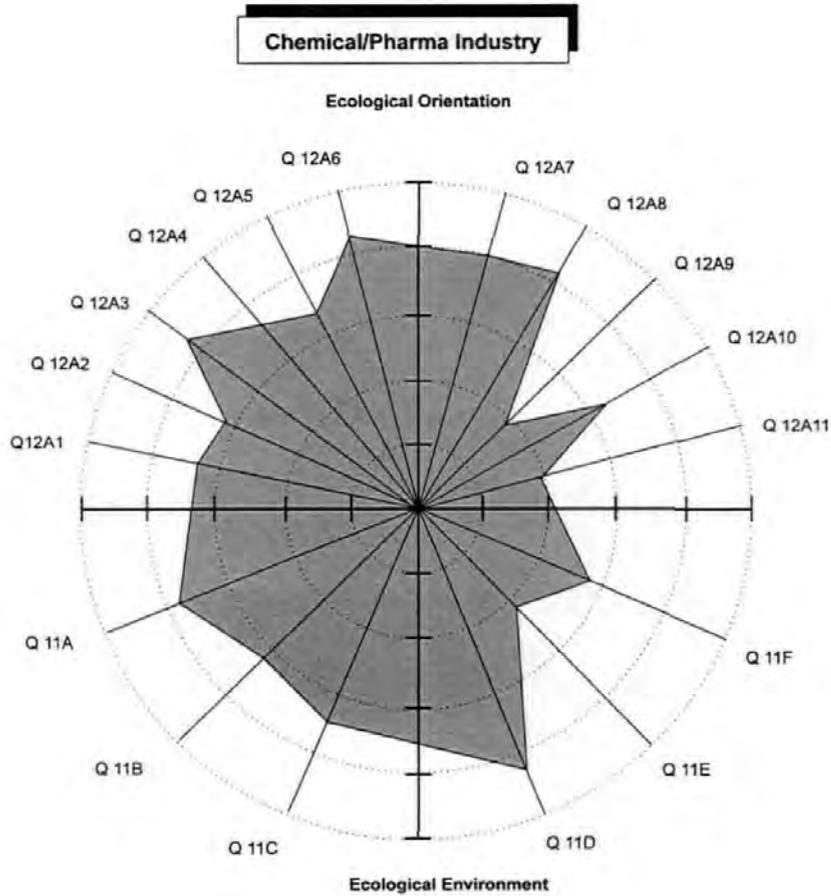


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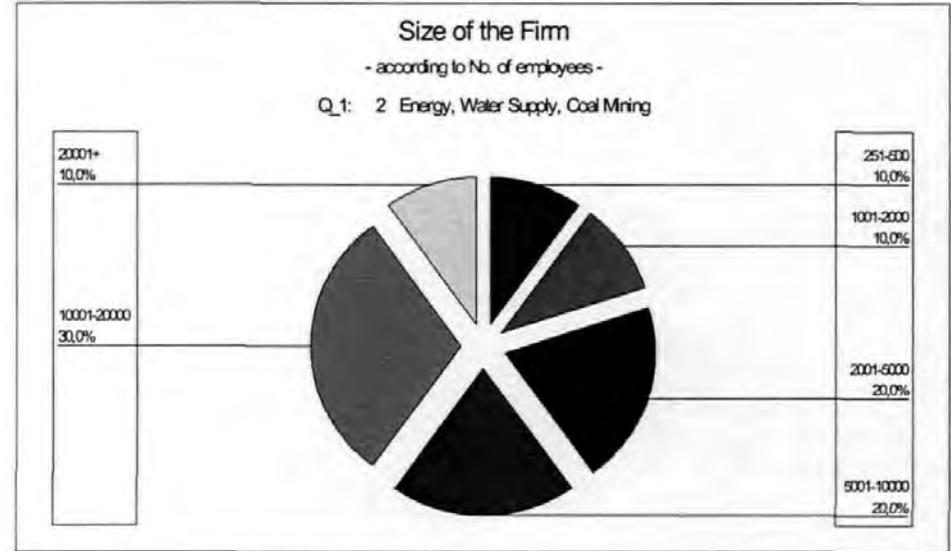


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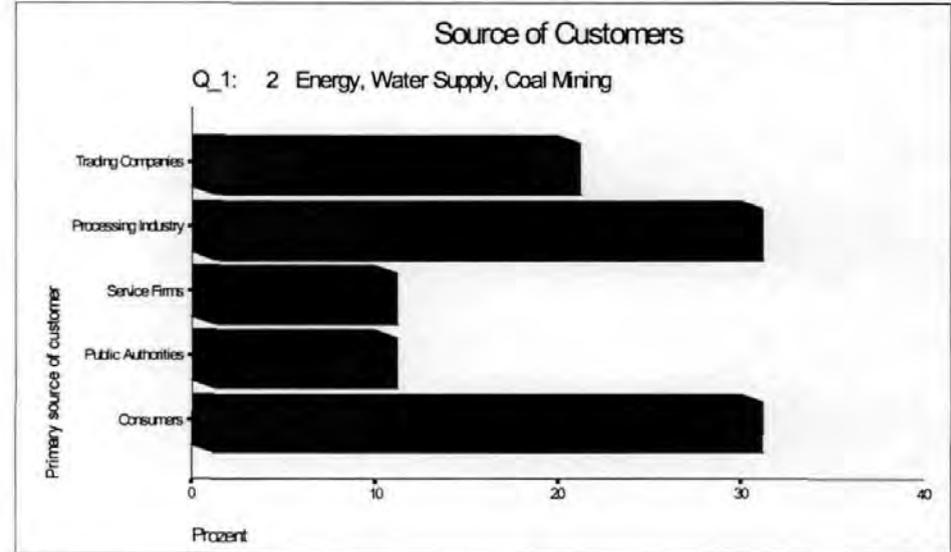


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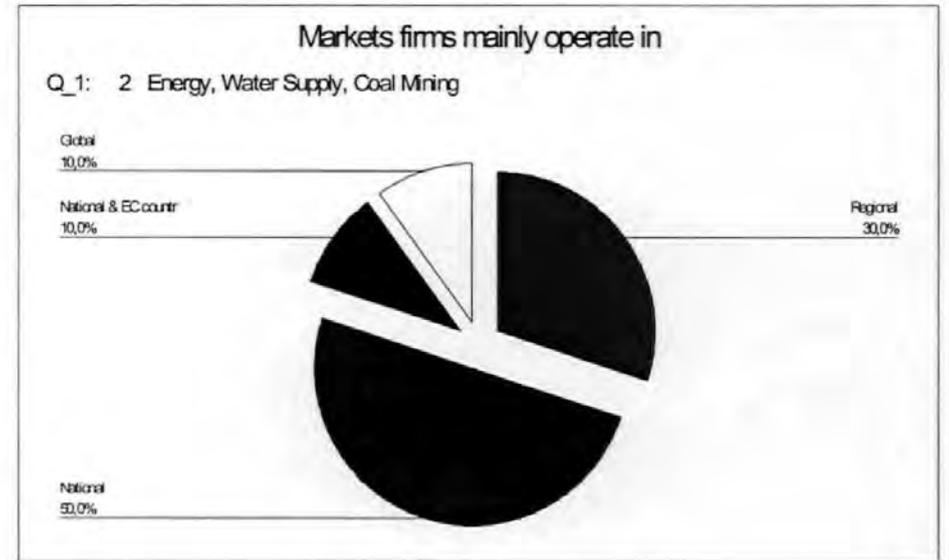


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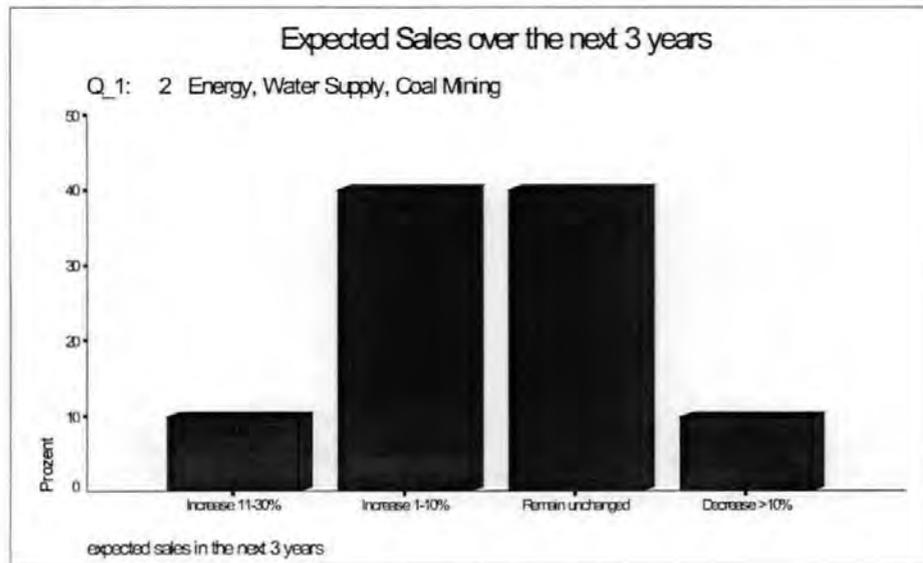


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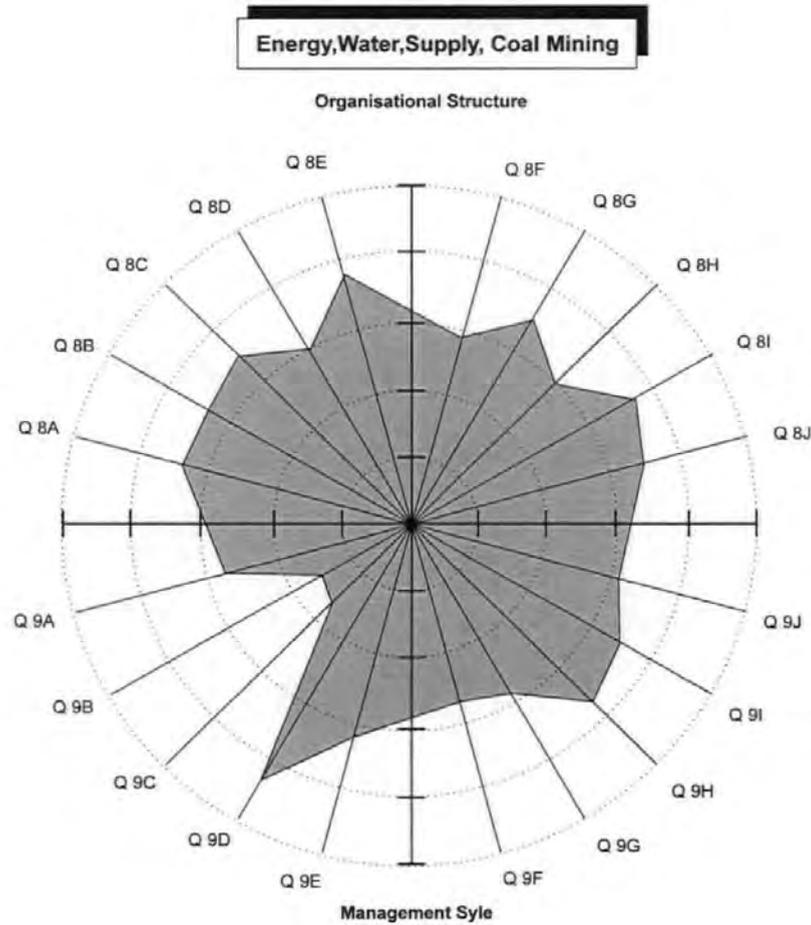


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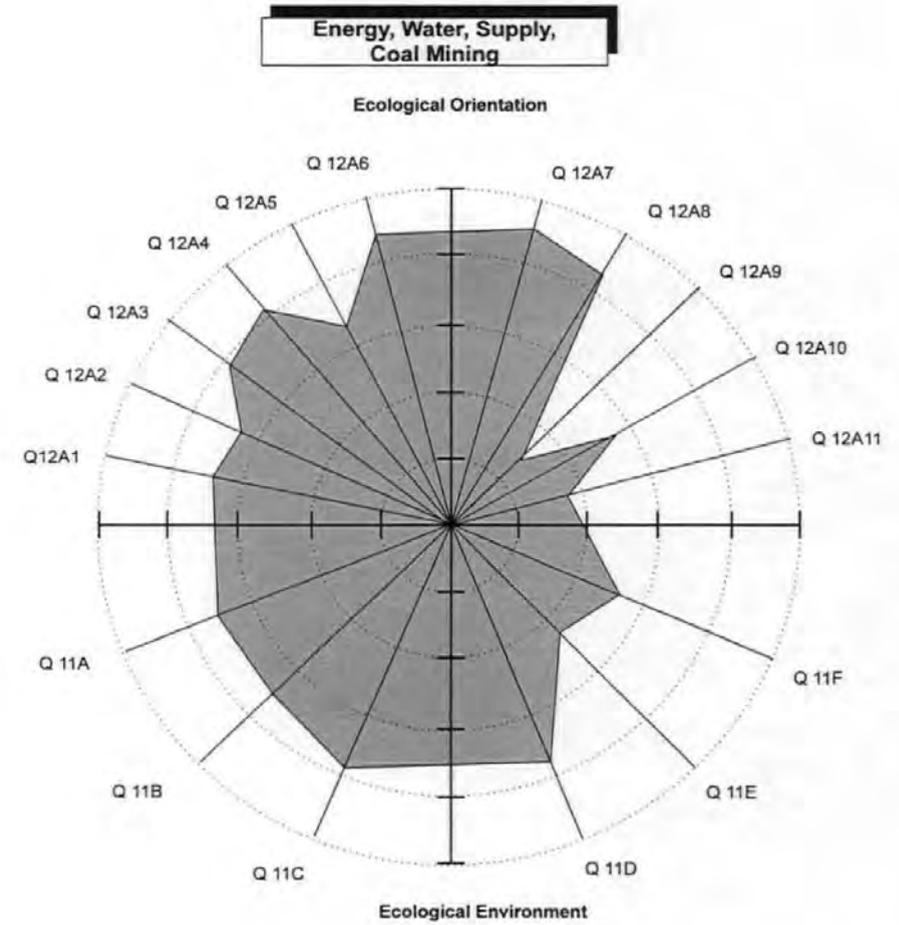


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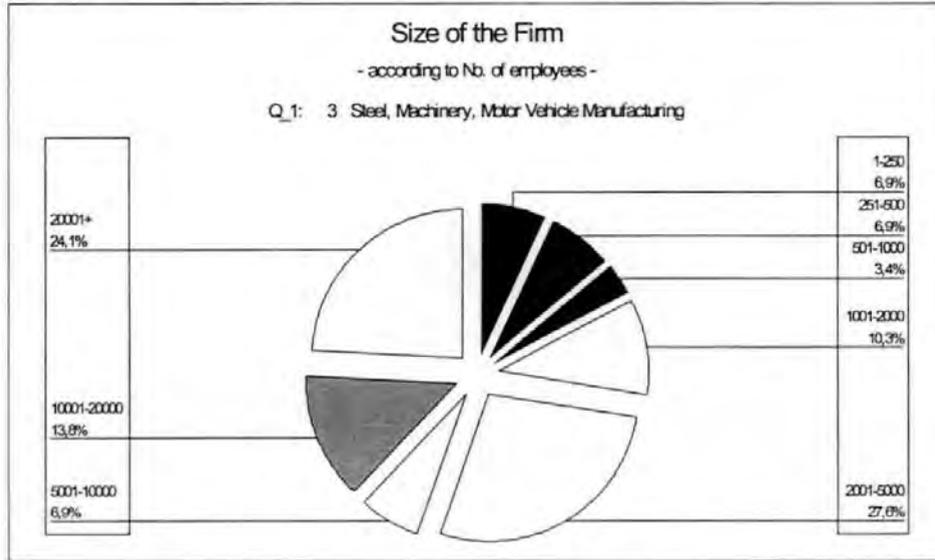


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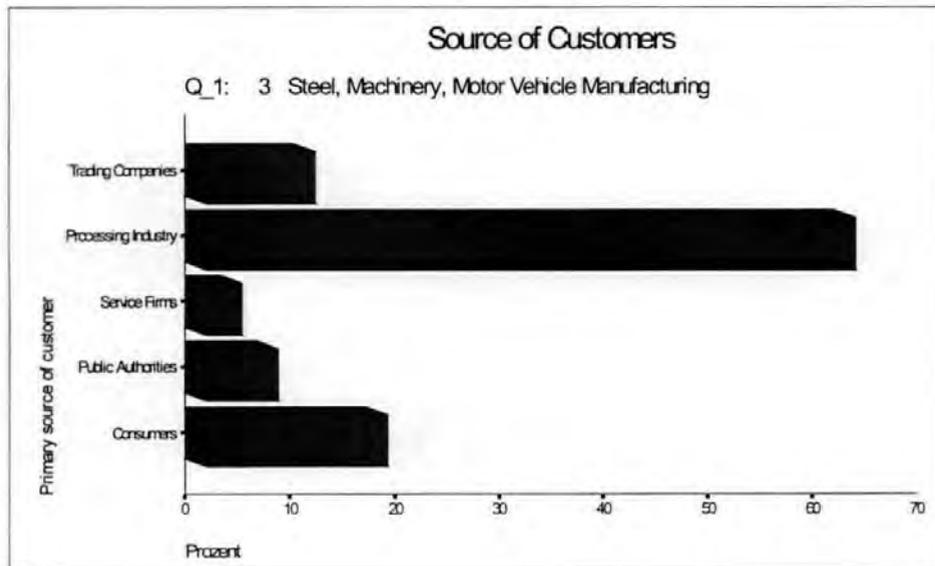


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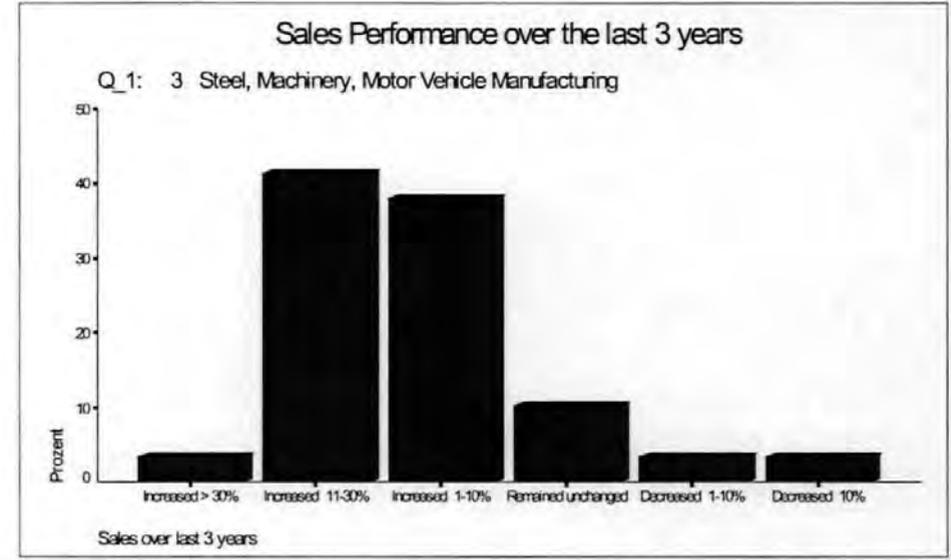


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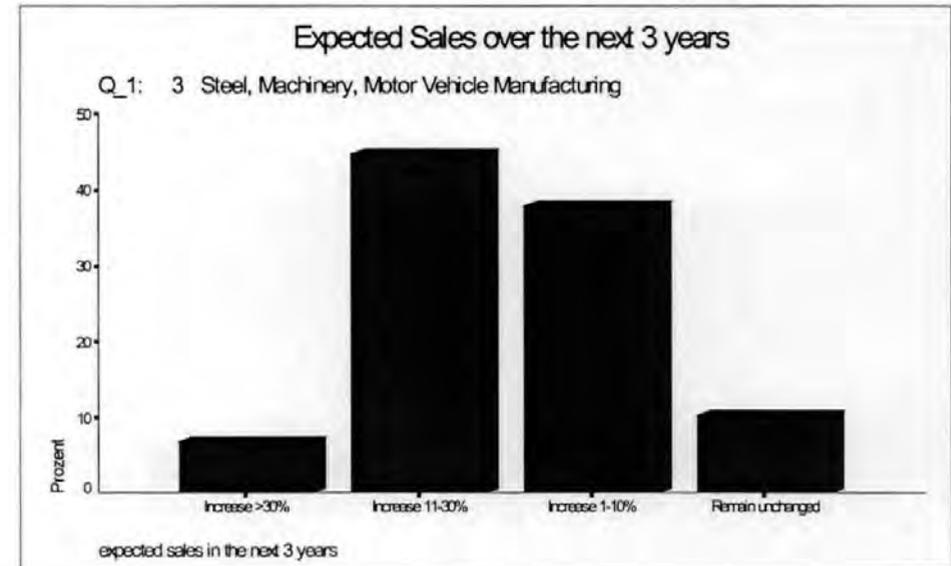


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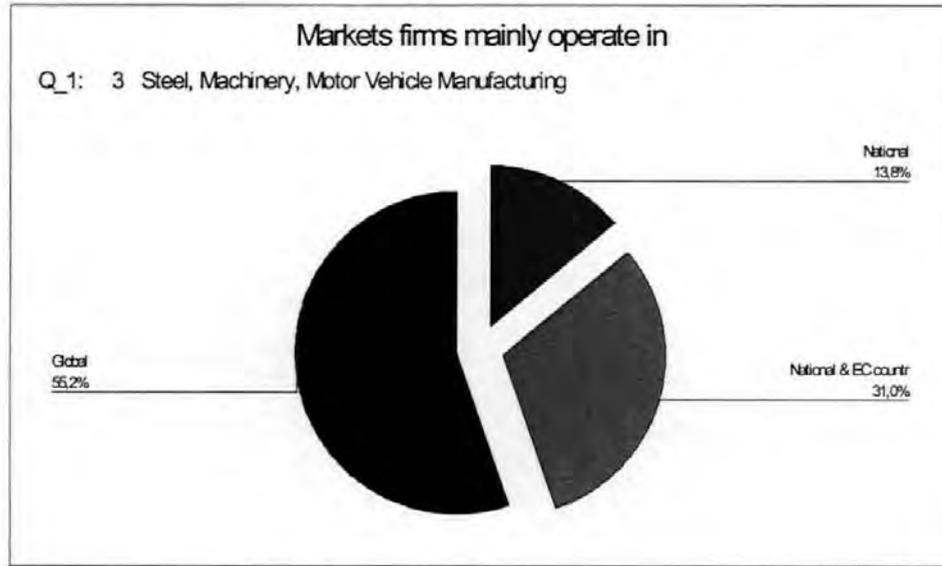


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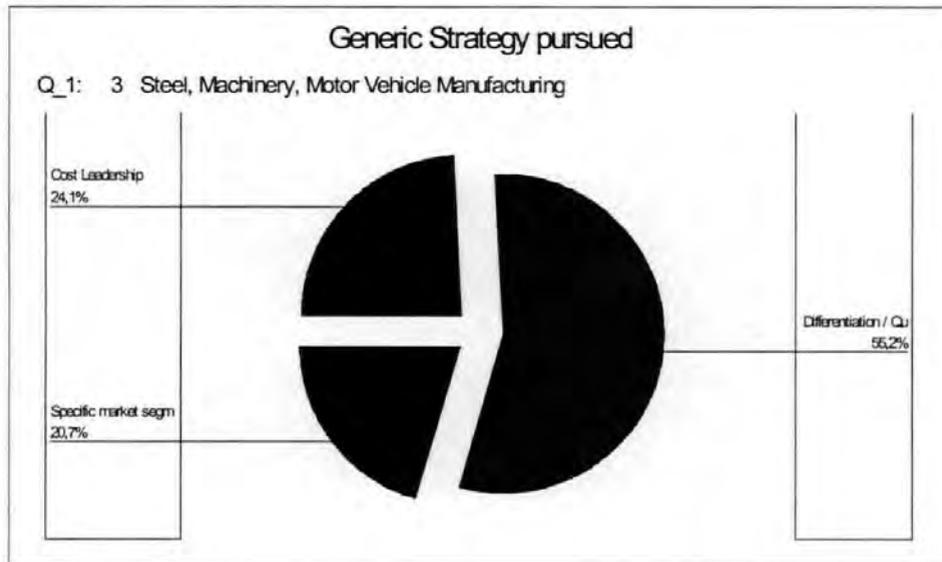


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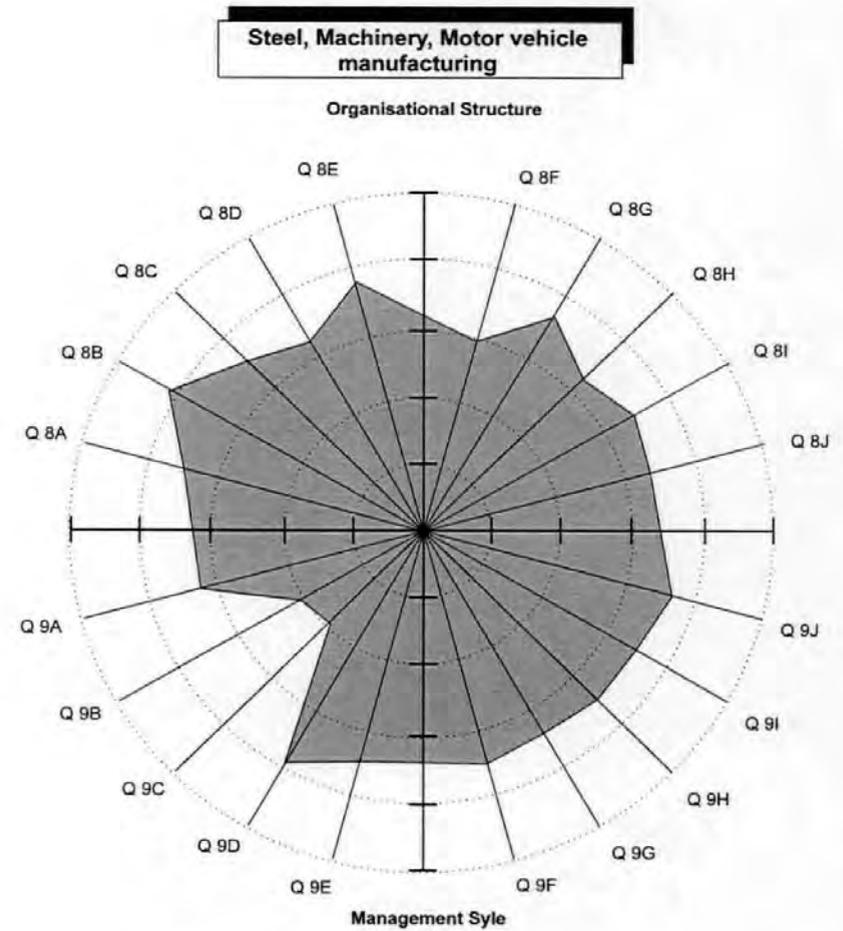


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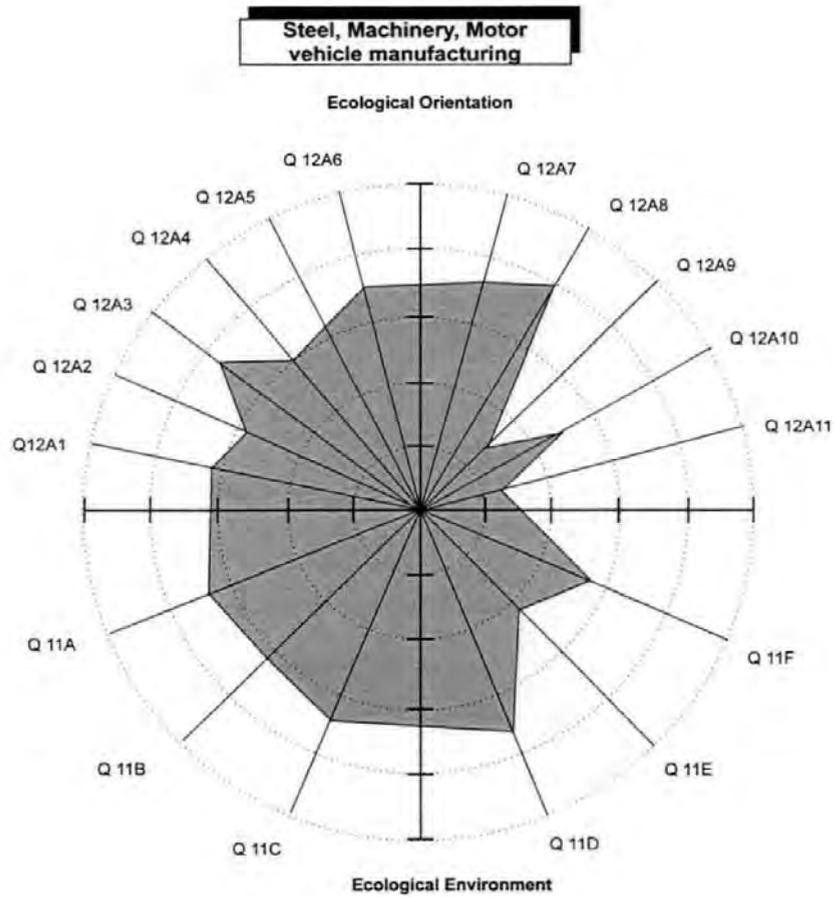


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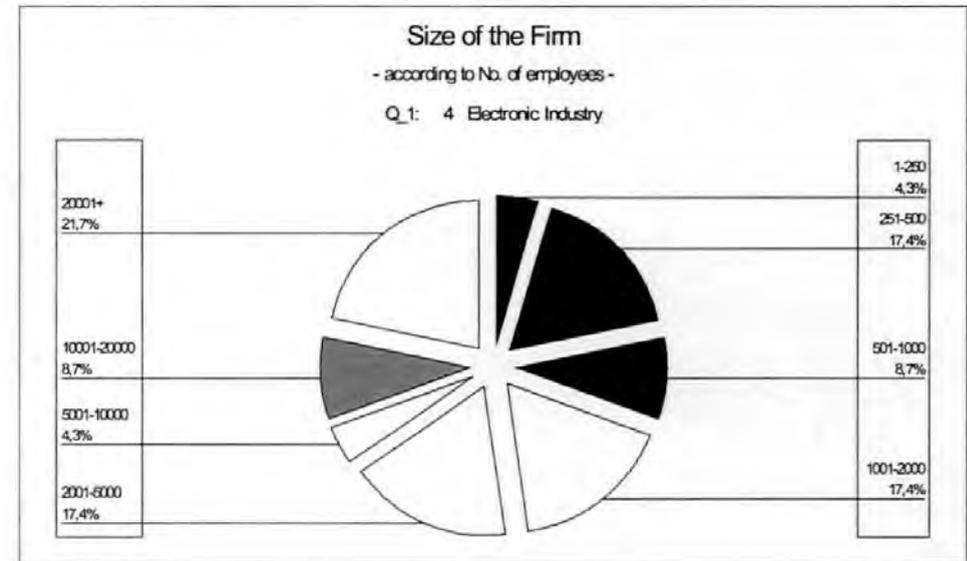


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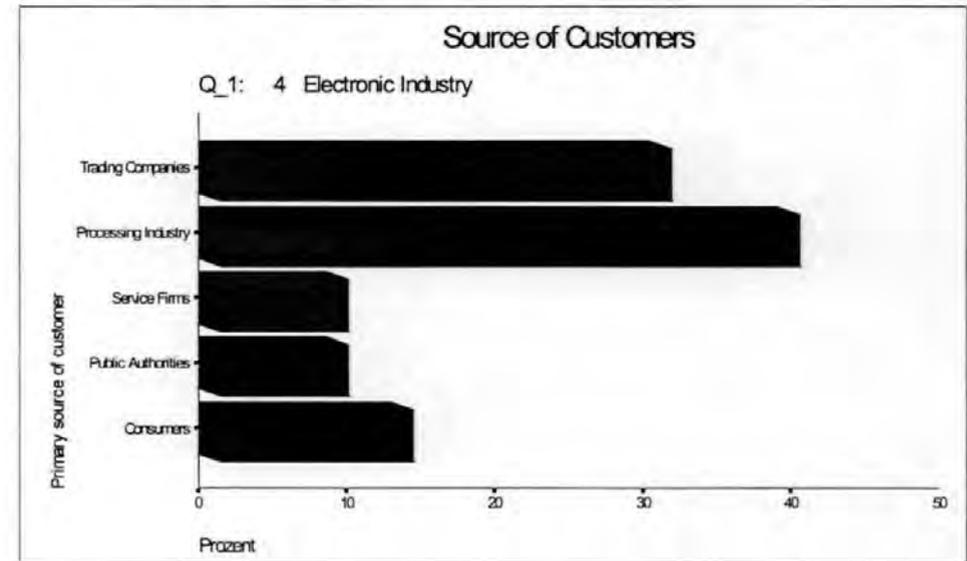


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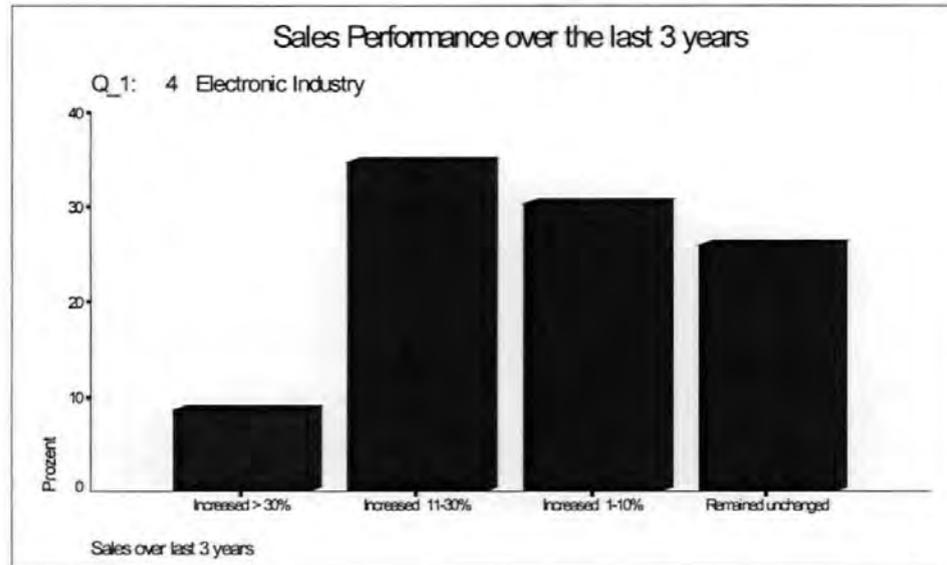


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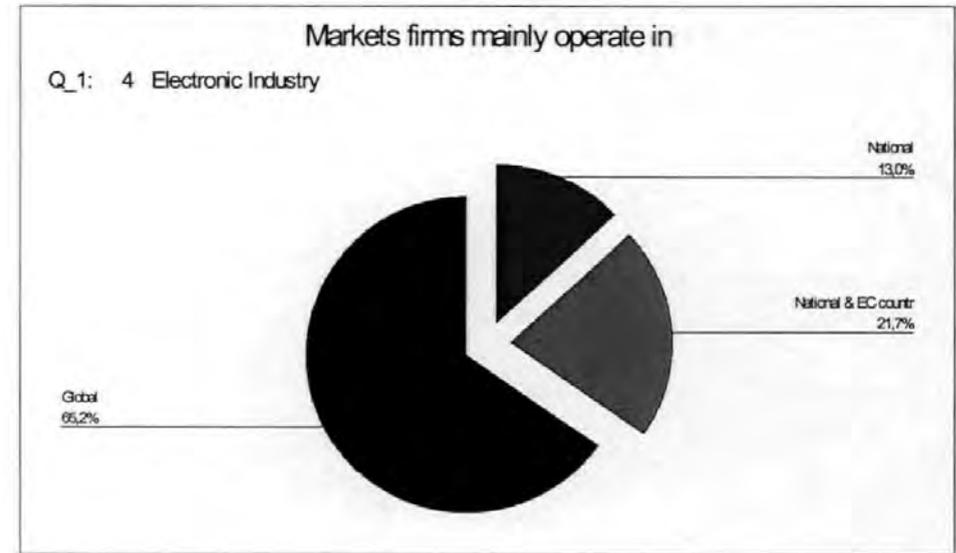


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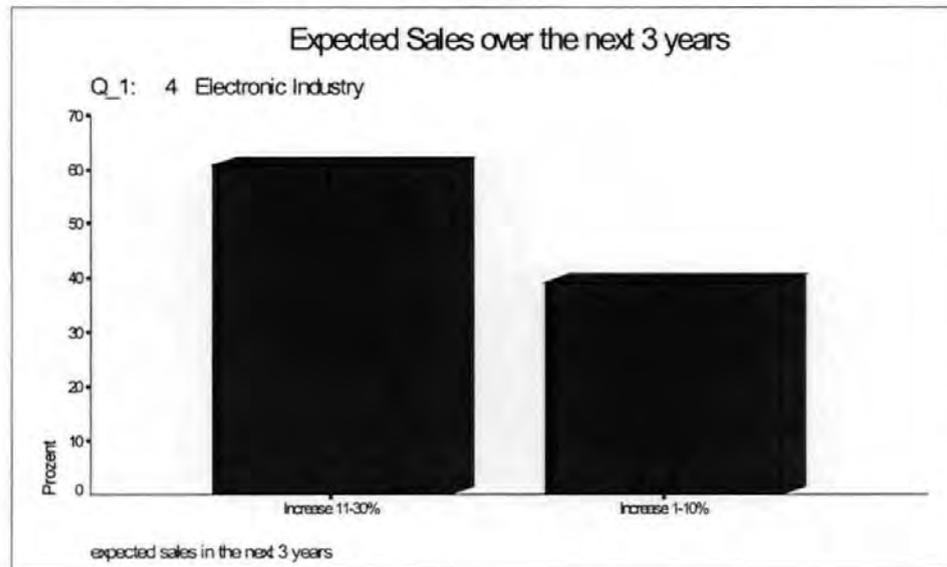


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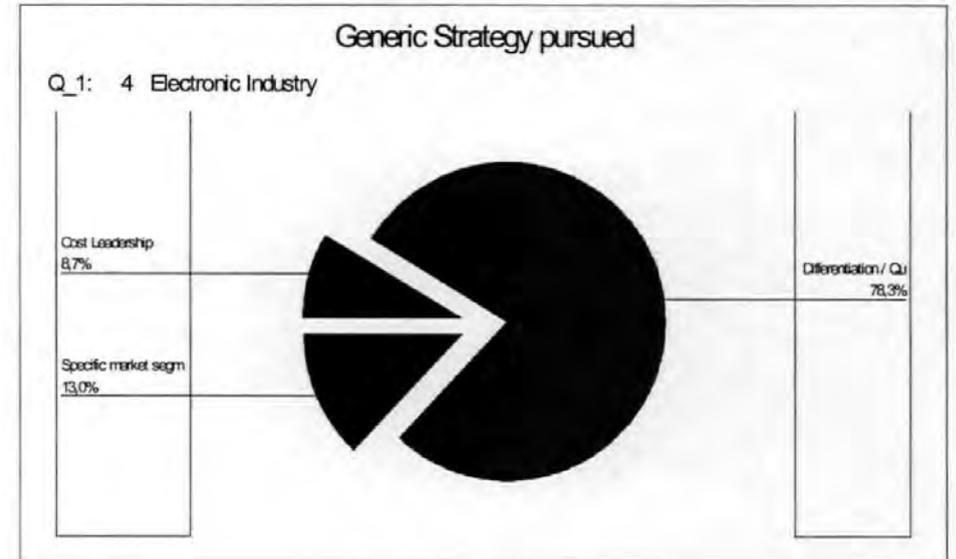




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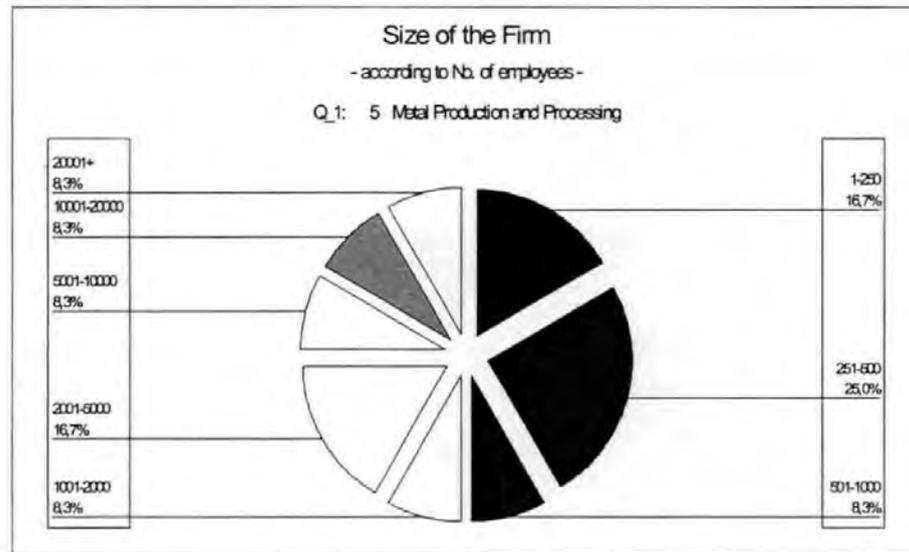


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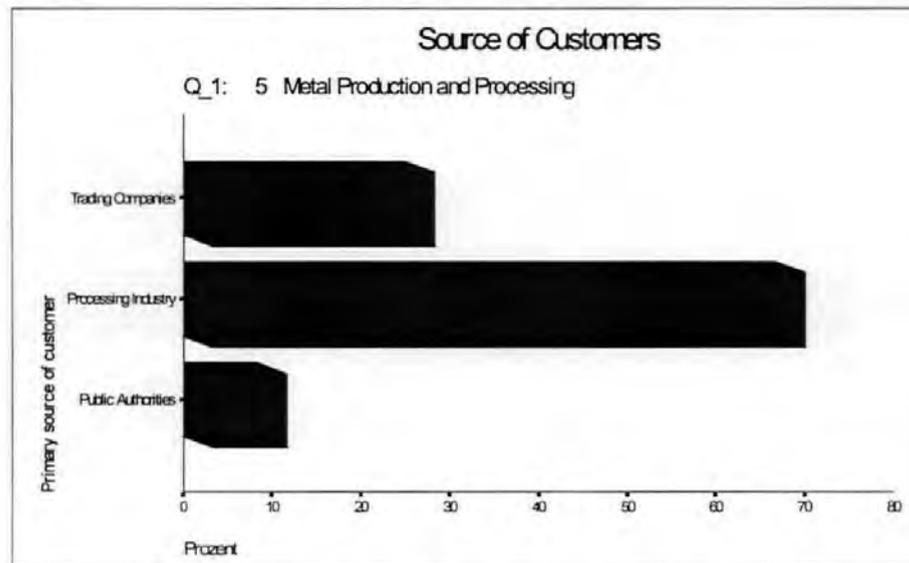


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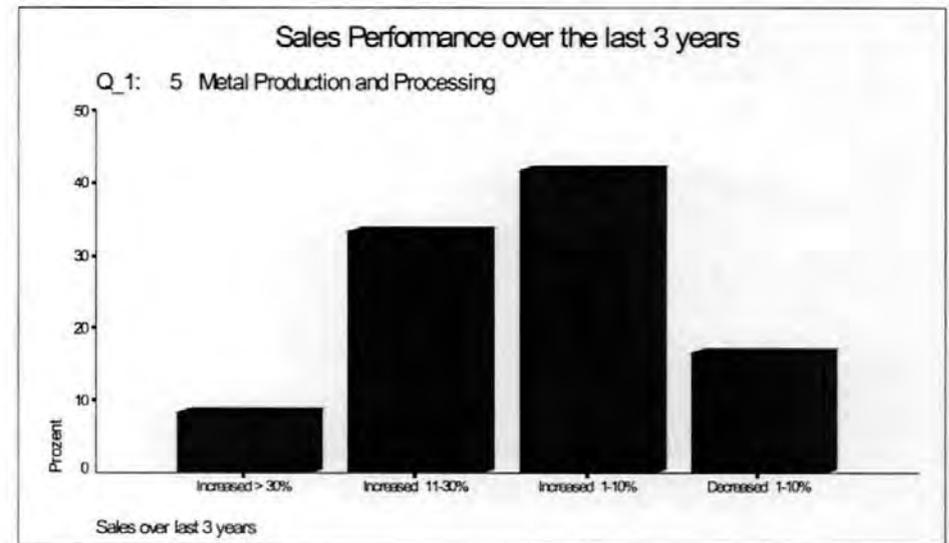


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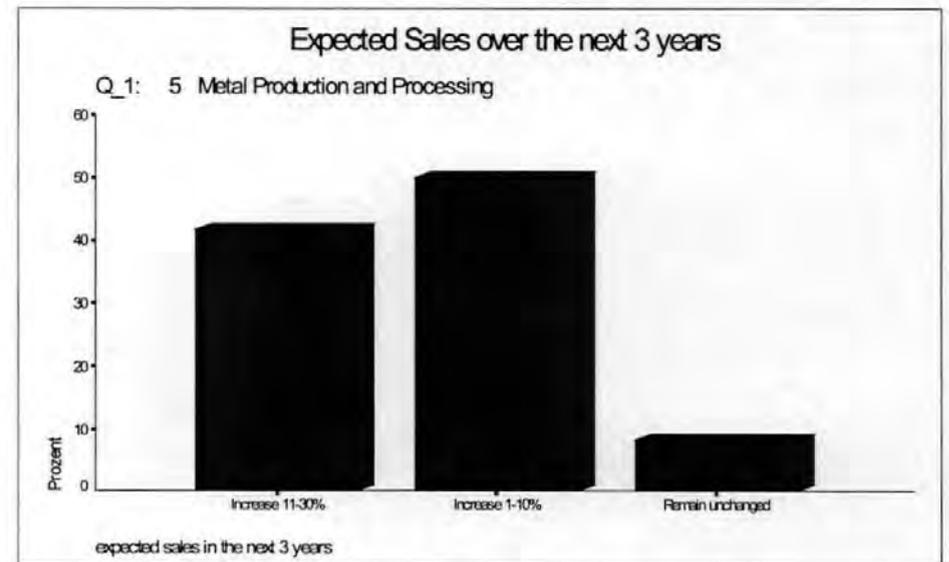


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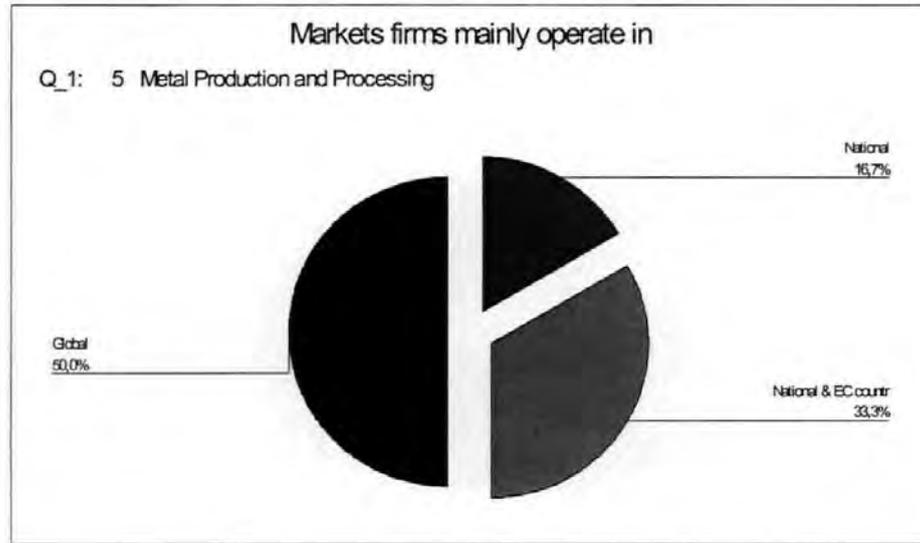


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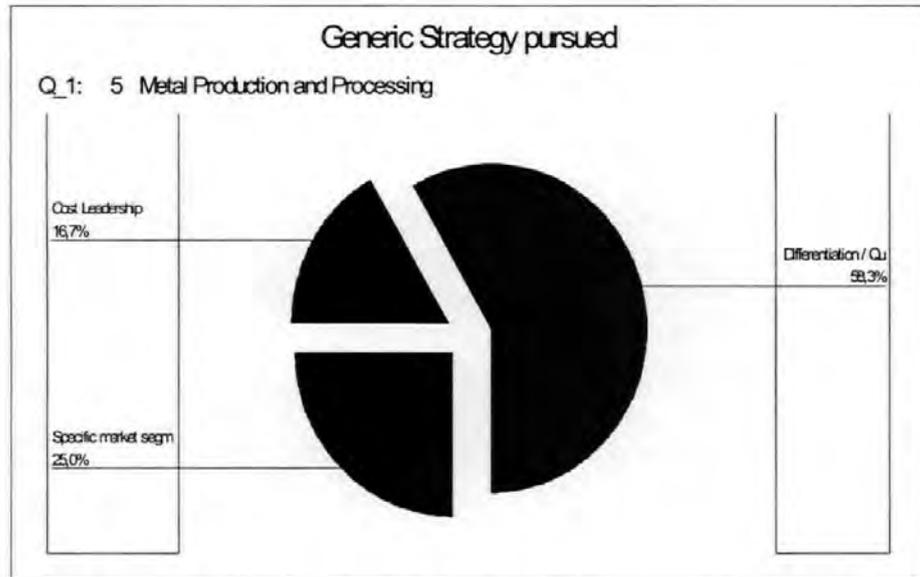


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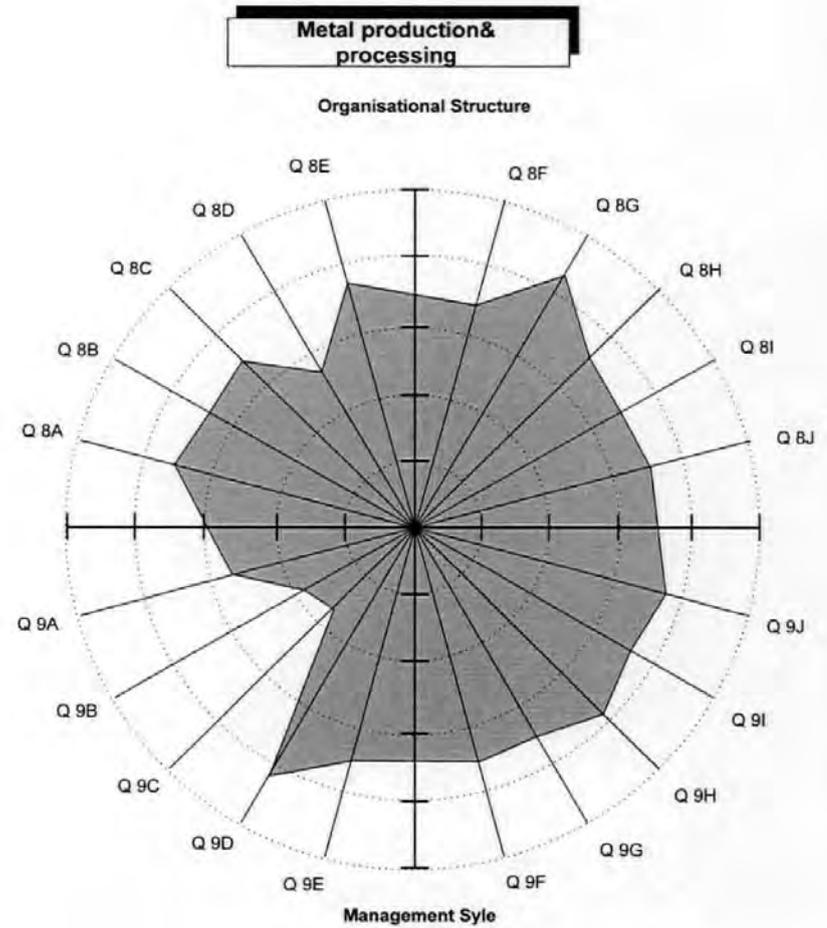


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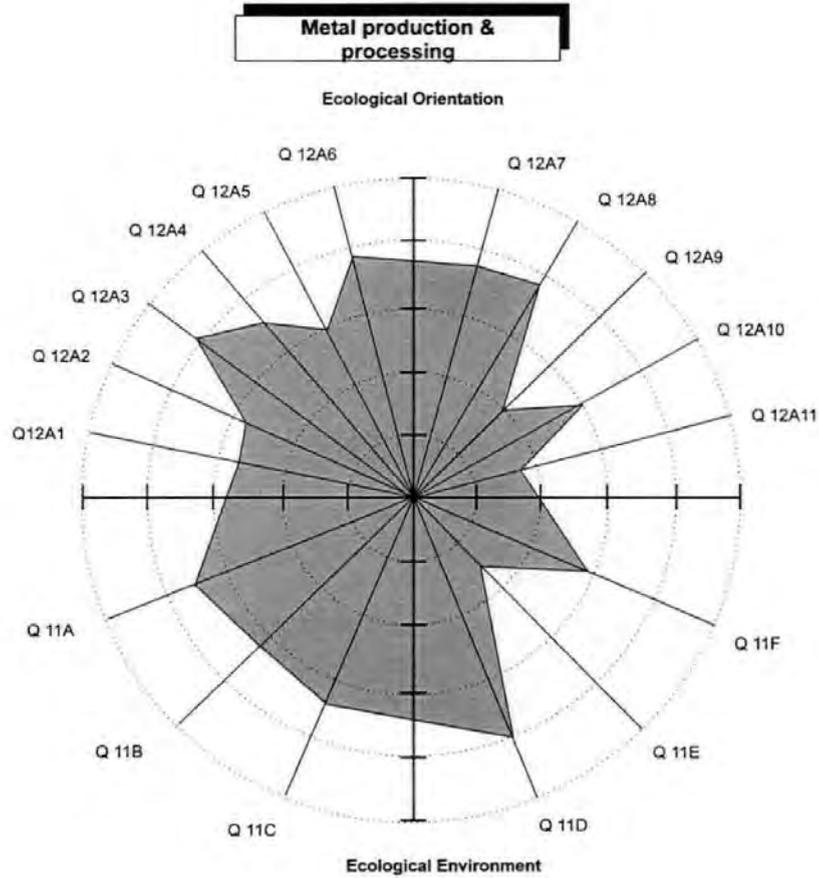


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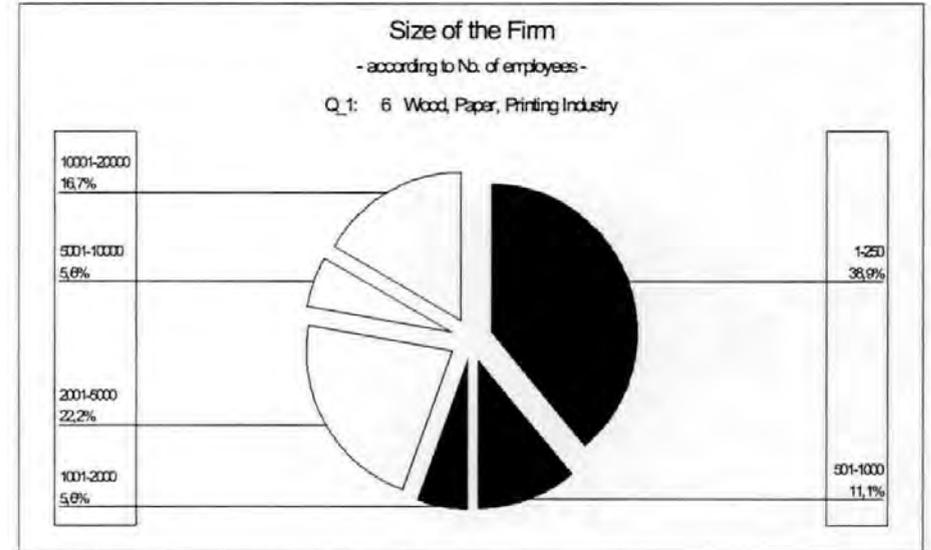


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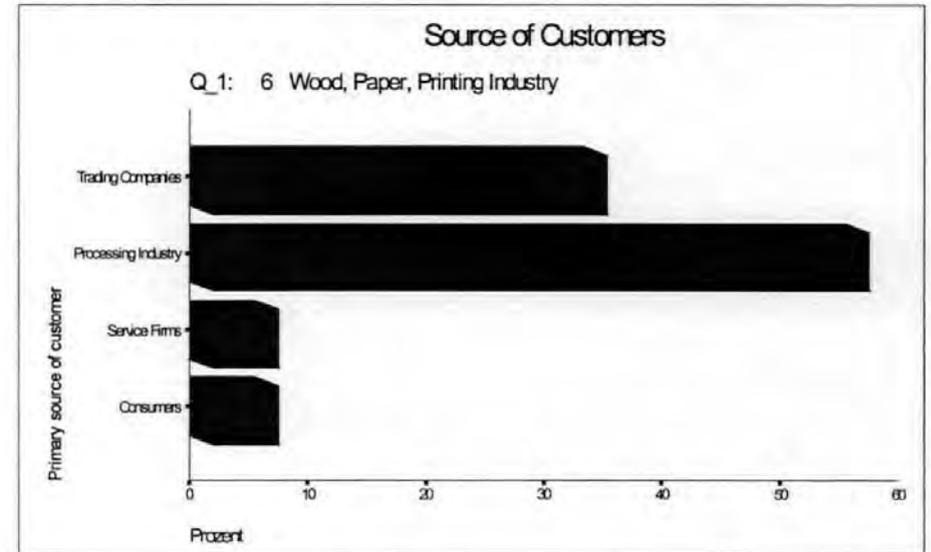


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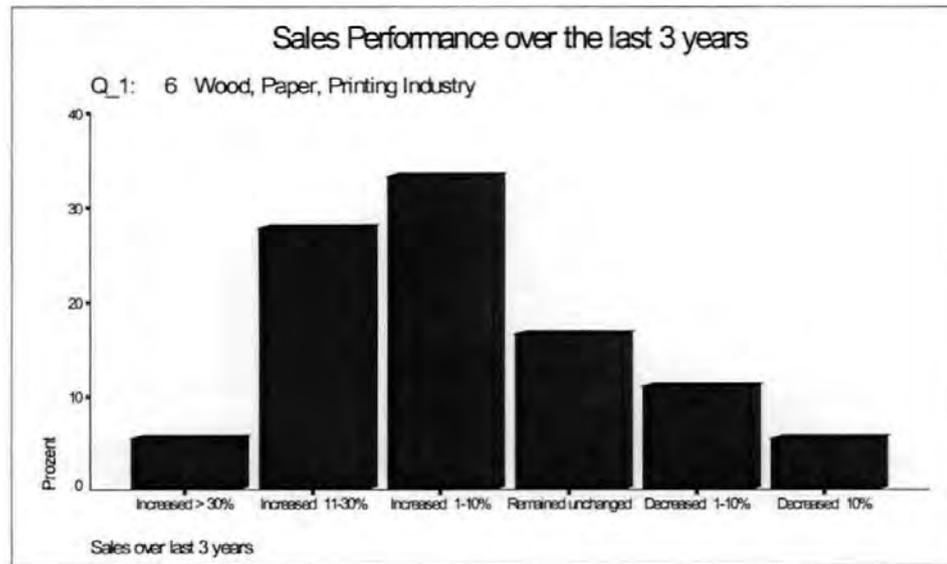


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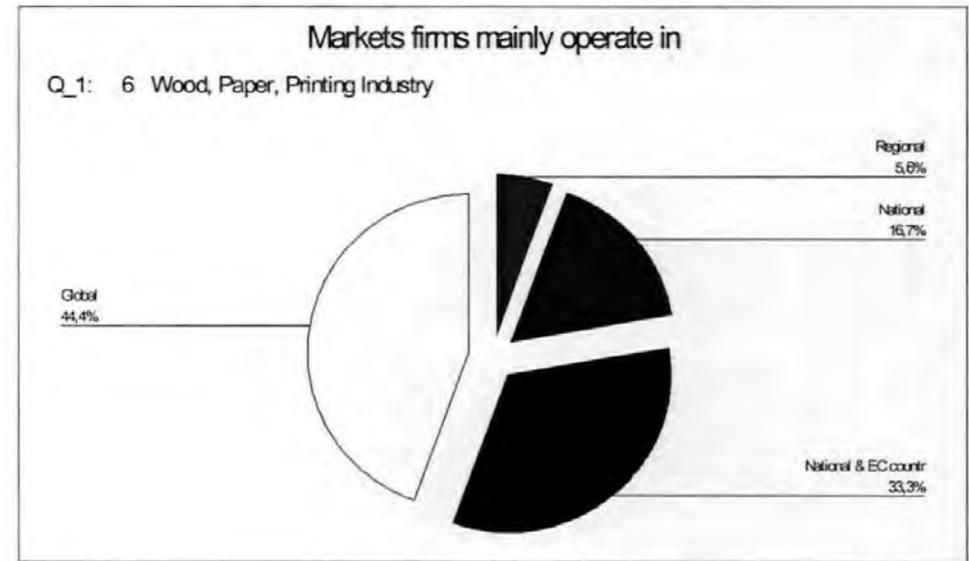


Figure 6.44 Profile: Expected sales performance over the next 3 years

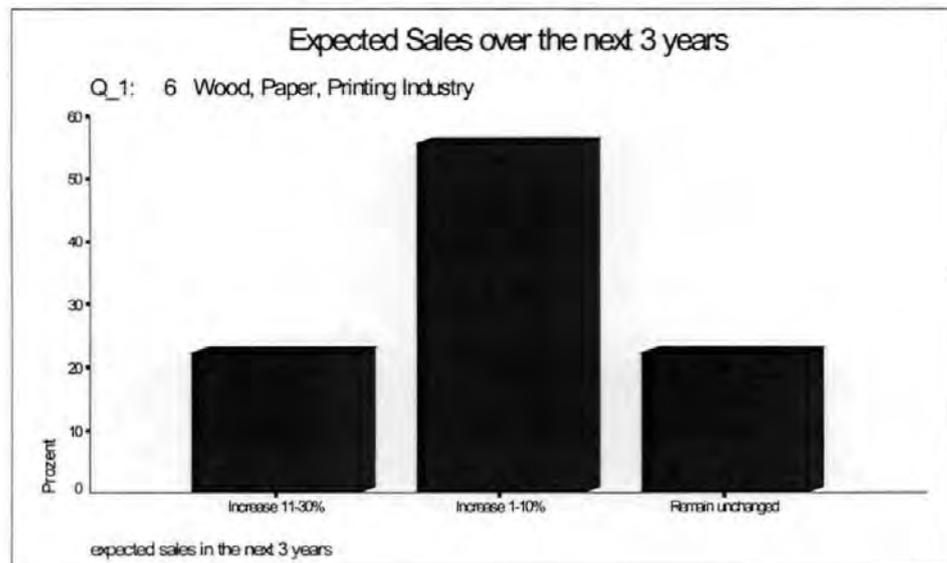


Figure 6.46 Profile: Generic strategy pursued

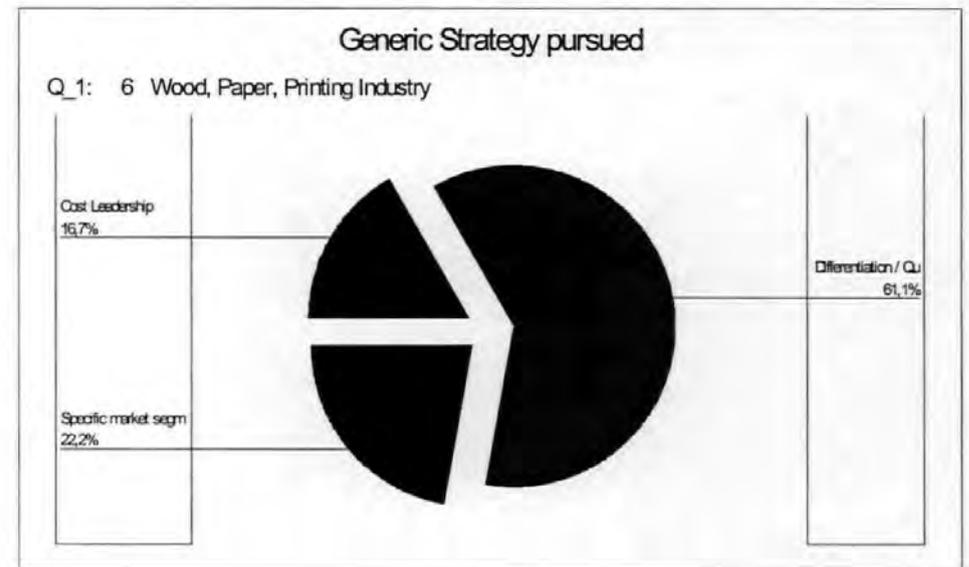


Figure 6.47 Rosette "Organisational structure & Management style"

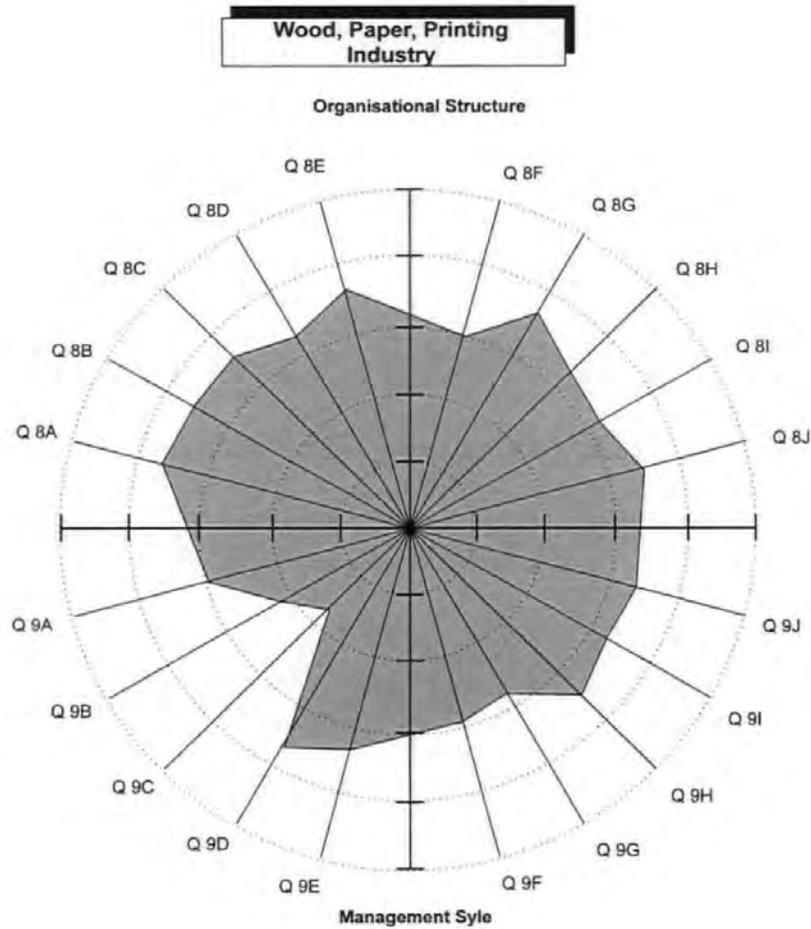


Figure 6.48 Rosette "Ecological orientation & Ecological environment"

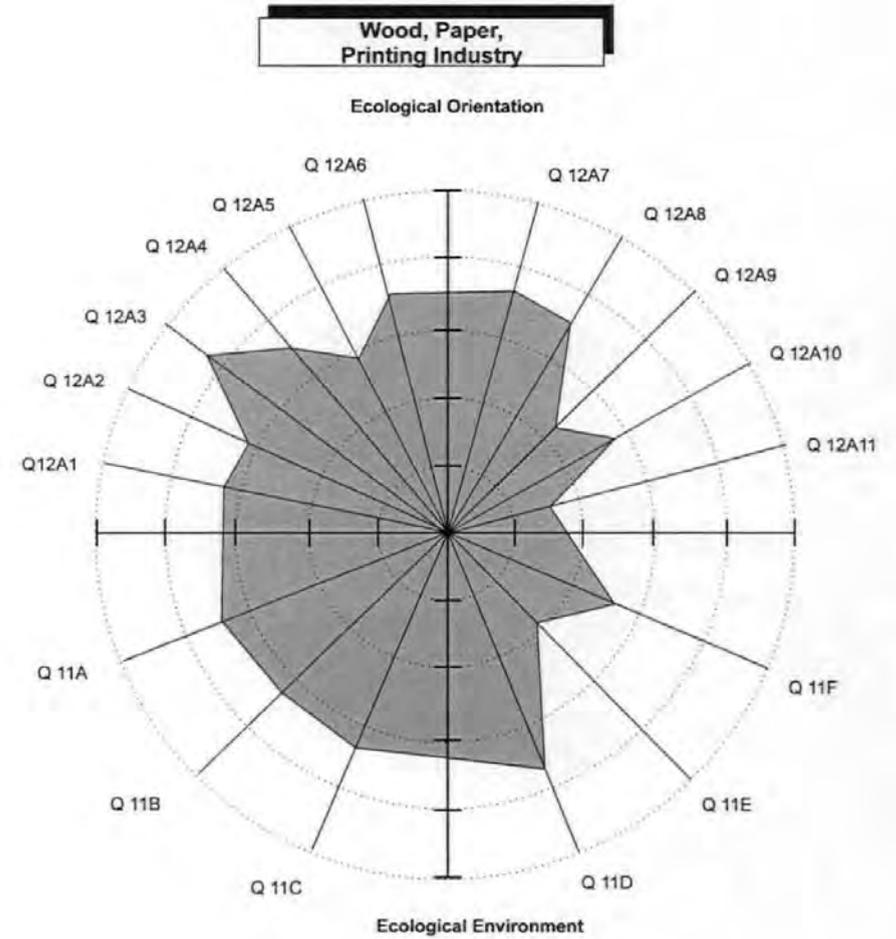


Figure 6.49 Profile: Size of the firm

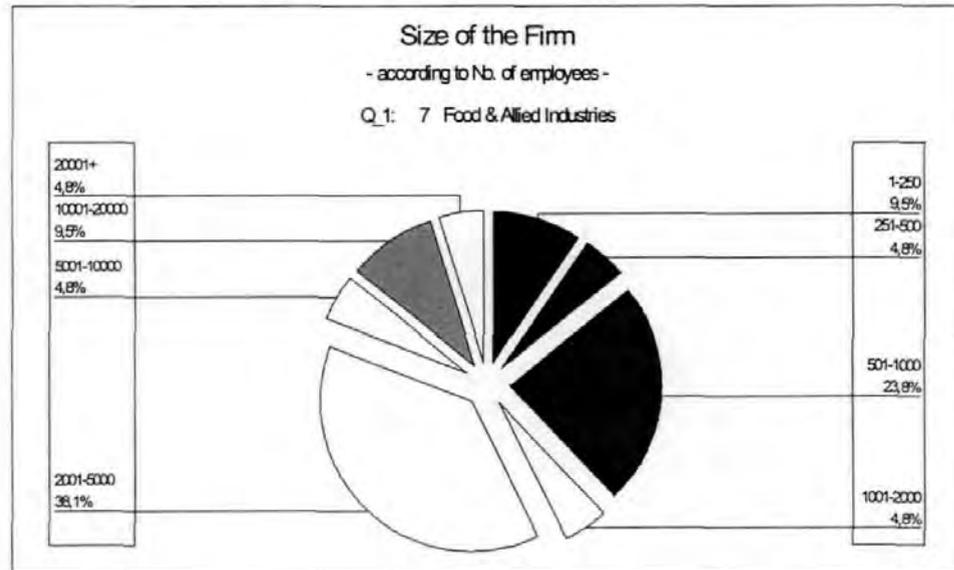


Figure 6.51 Profile: Sales performance over the last 3 years

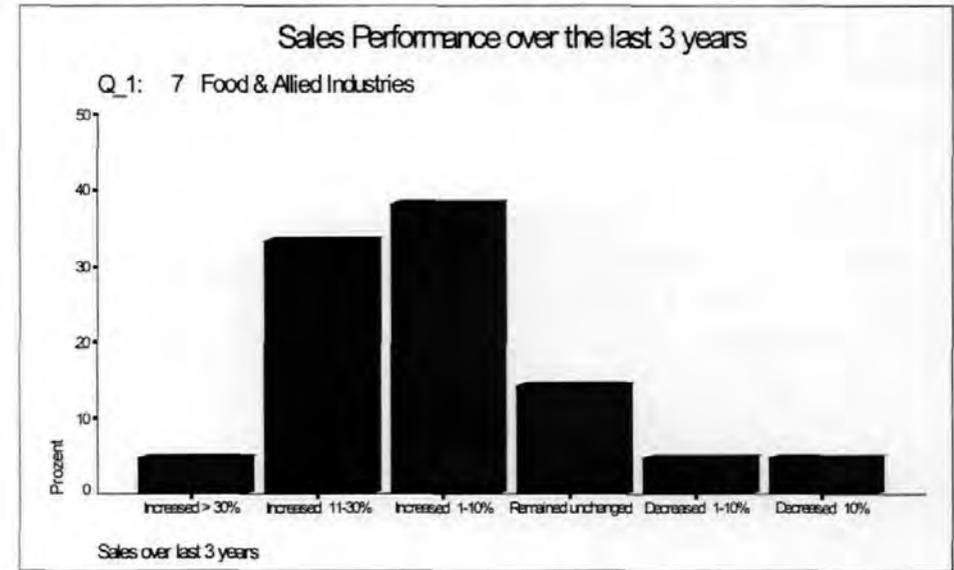


Figure 6.50 Profile: Source of customers

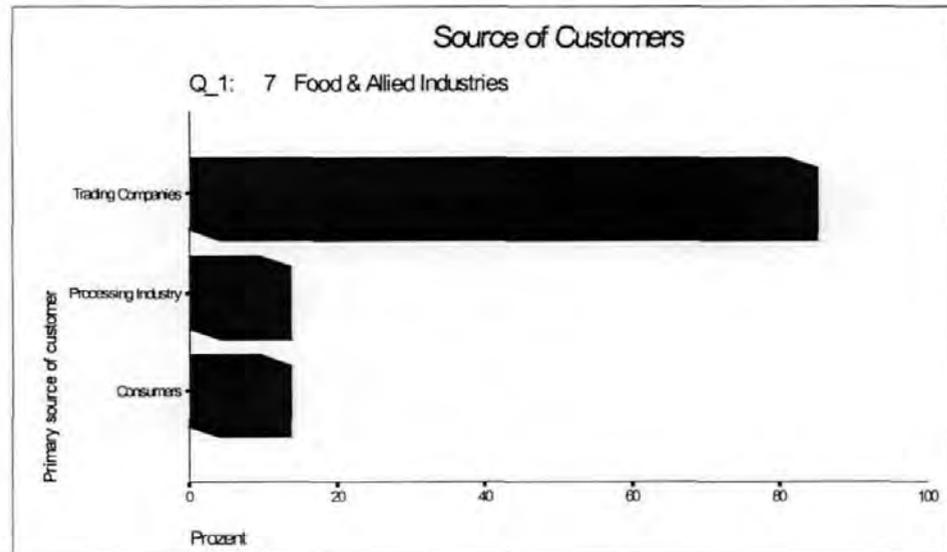


Figure 6.52 Profile: Expected sales performance over the next 3 years

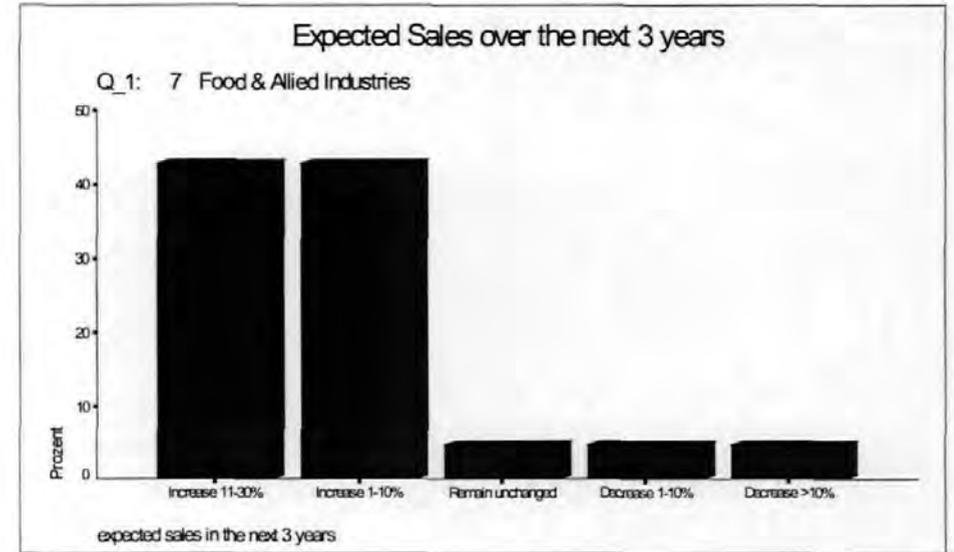


Figure 6.53 Profile: Markets firms mainly operate in

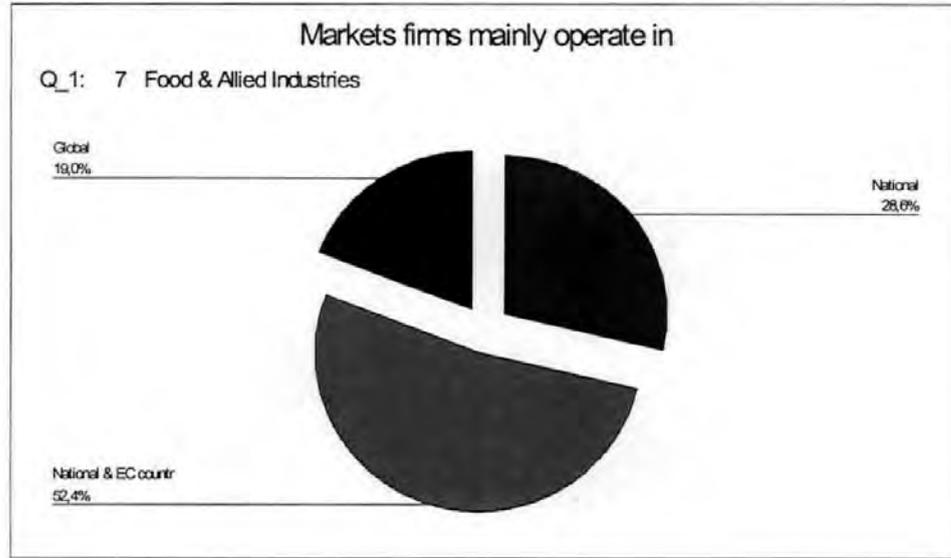


Figure 6.54 Profile: Generic strategy pursued

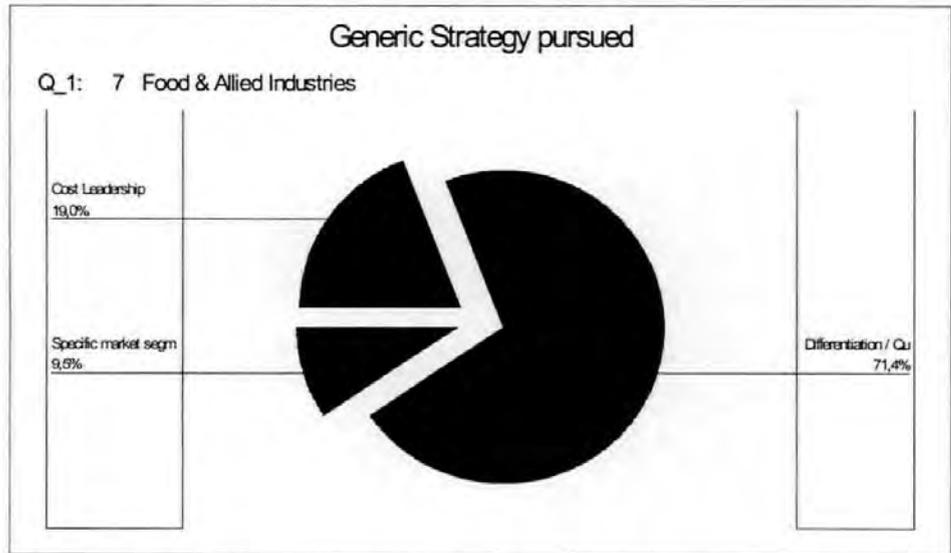


Figure 6.55 Rosette "Organisational structure & Management style"

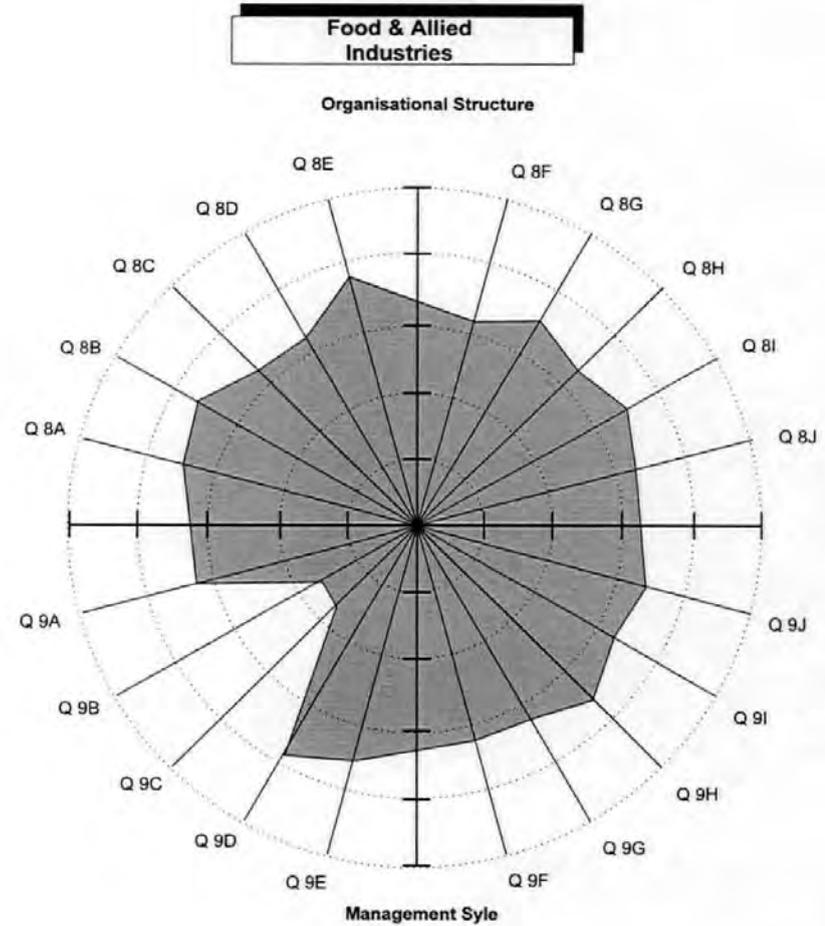


Figure 6.56 Rosette "Ecological orientation & Ecological environment"

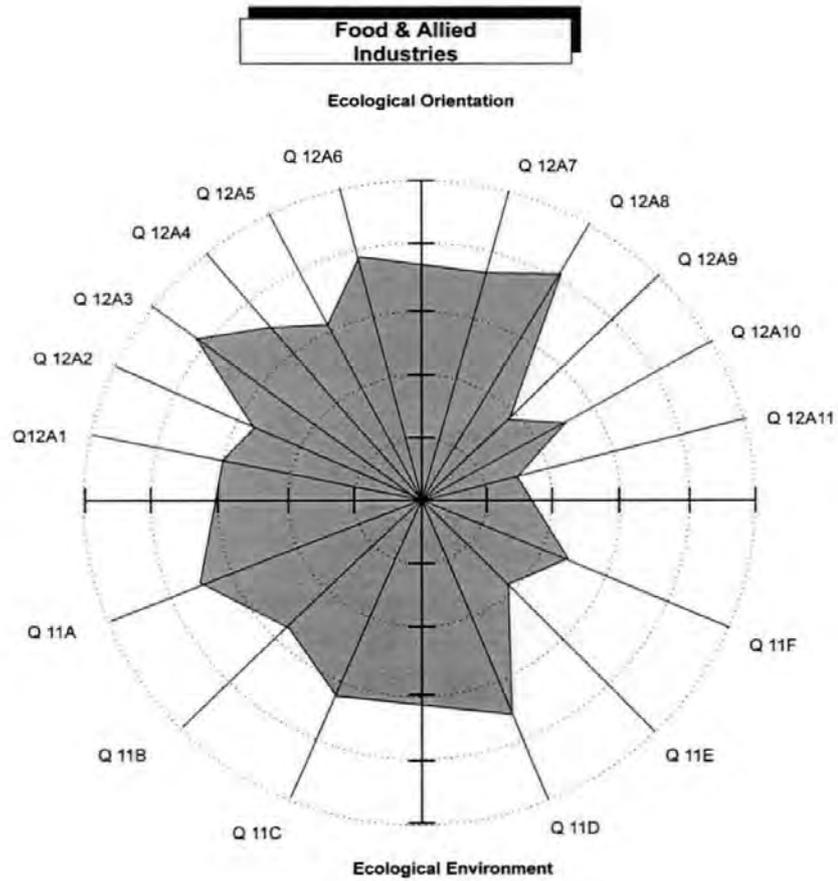


Figure 6.57 Profile: Size of the firm

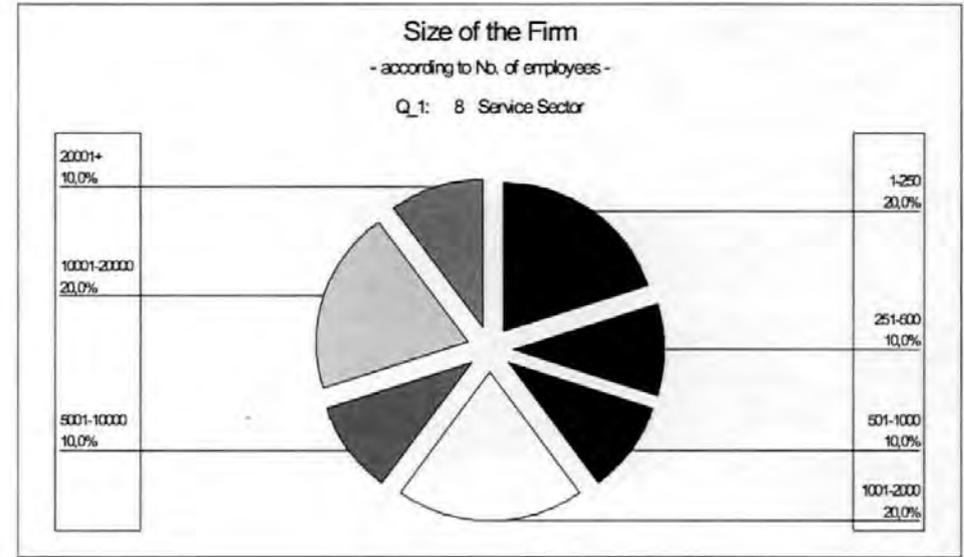


Figure 6.58 Profile: Source of customers

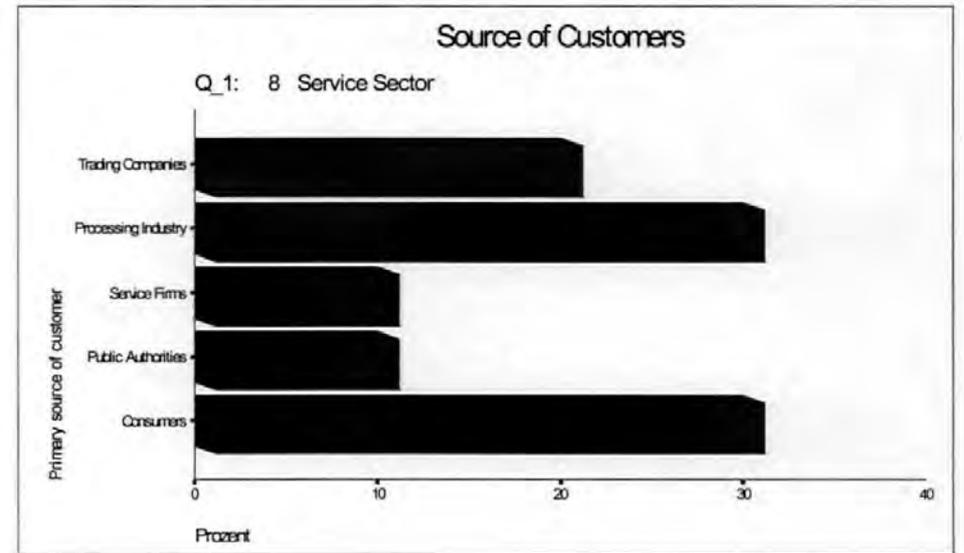


Figure 6.59 Profile: Sales performance over the last 3 years

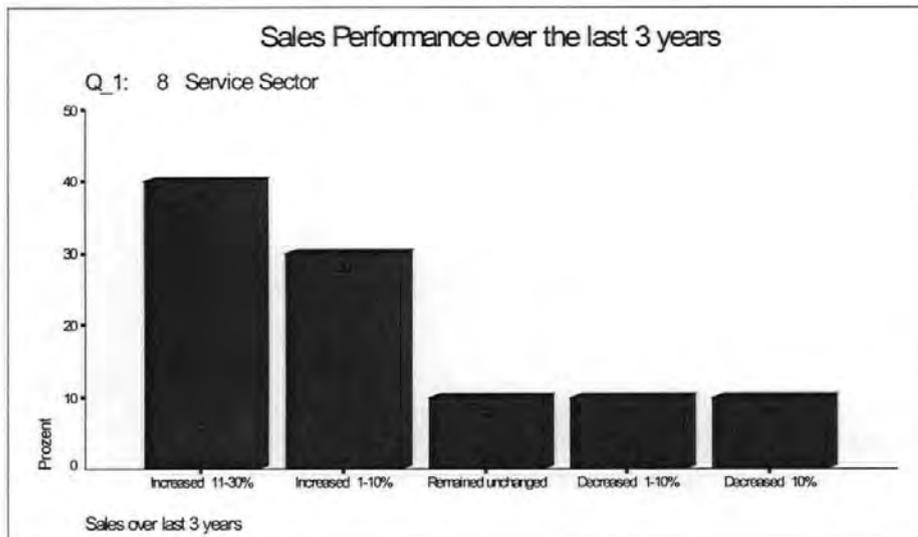


Figure 6.61 Profile: Markets firms mainly operate in

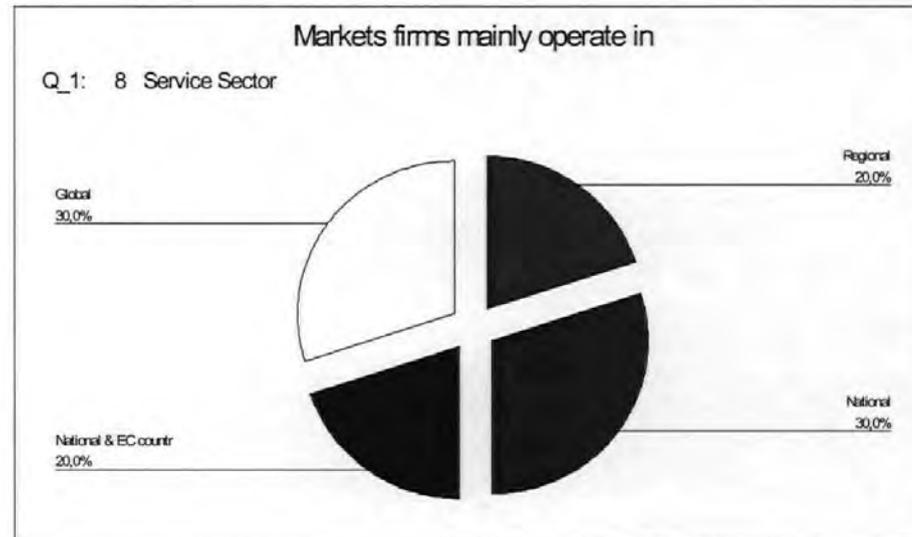


Figure 6.60 Profile: Expected sales performance over the next 3 years

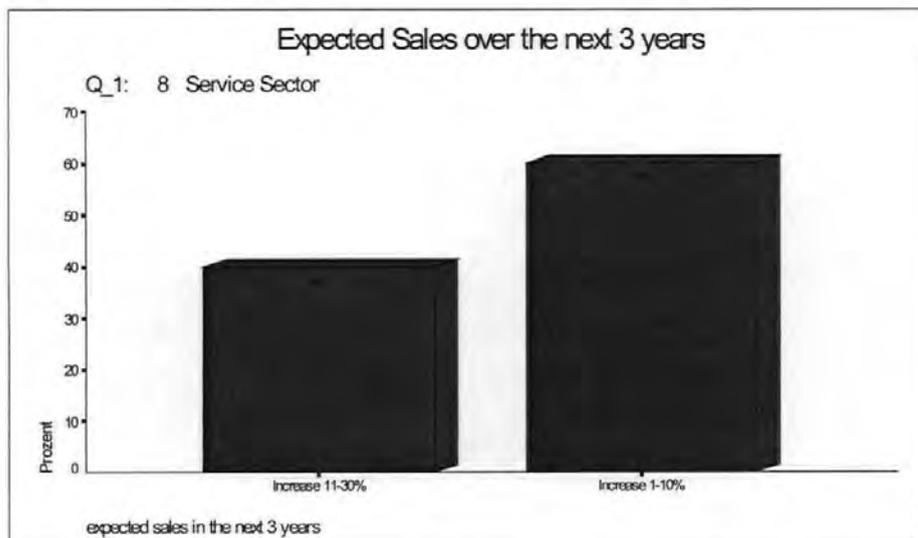


Figure 6.62 Profile: Generic strategy pursued

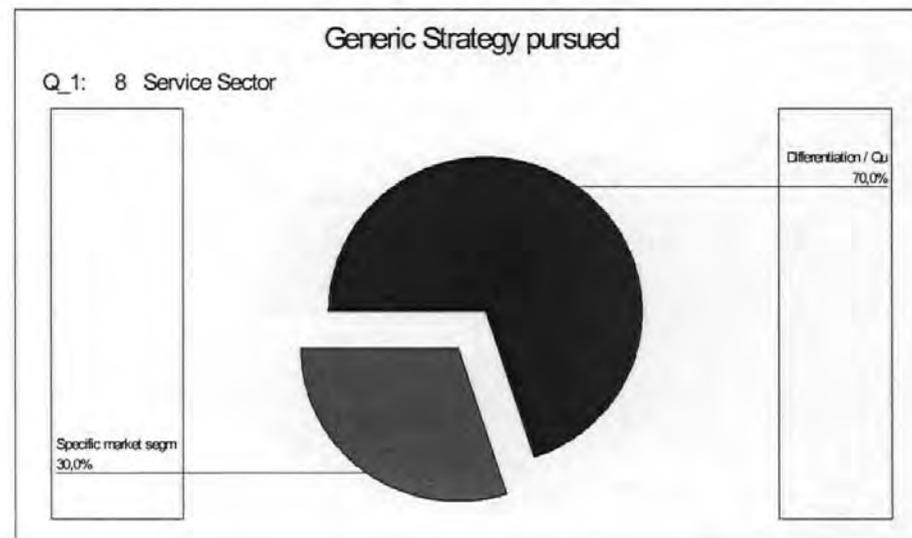


Figure 6.63 Rosette "Organisational structure & Management style"

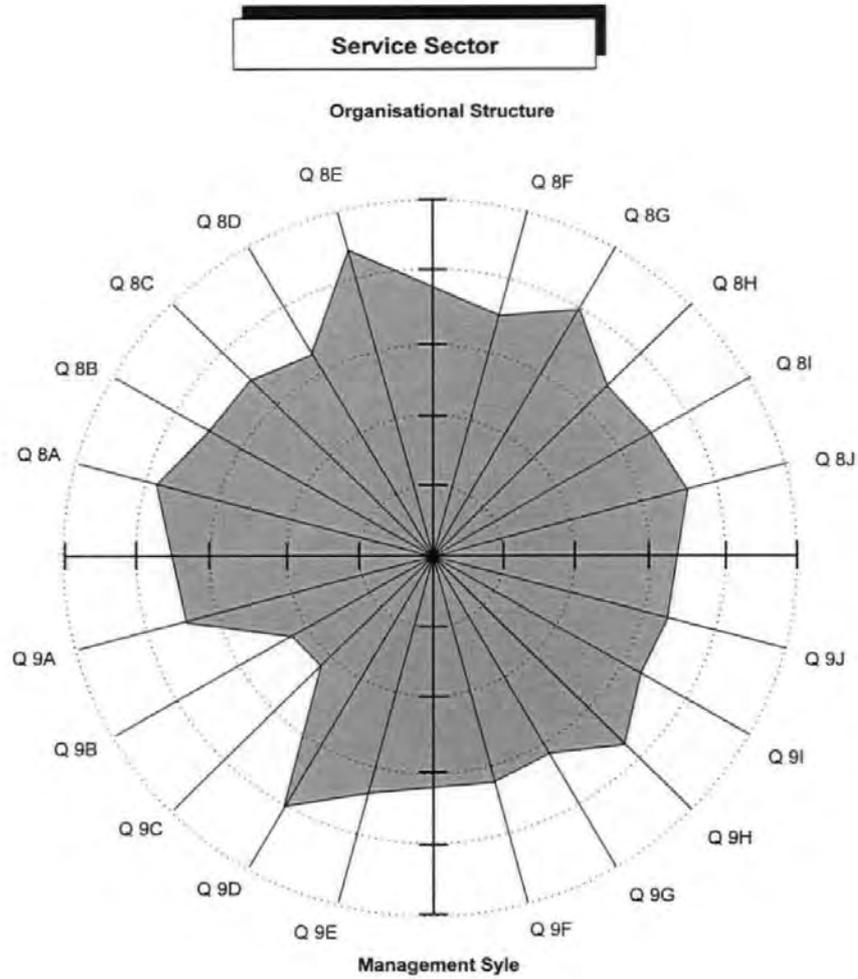


Figure 6.64 Rosette "Ecological orientation & Ecological environment"

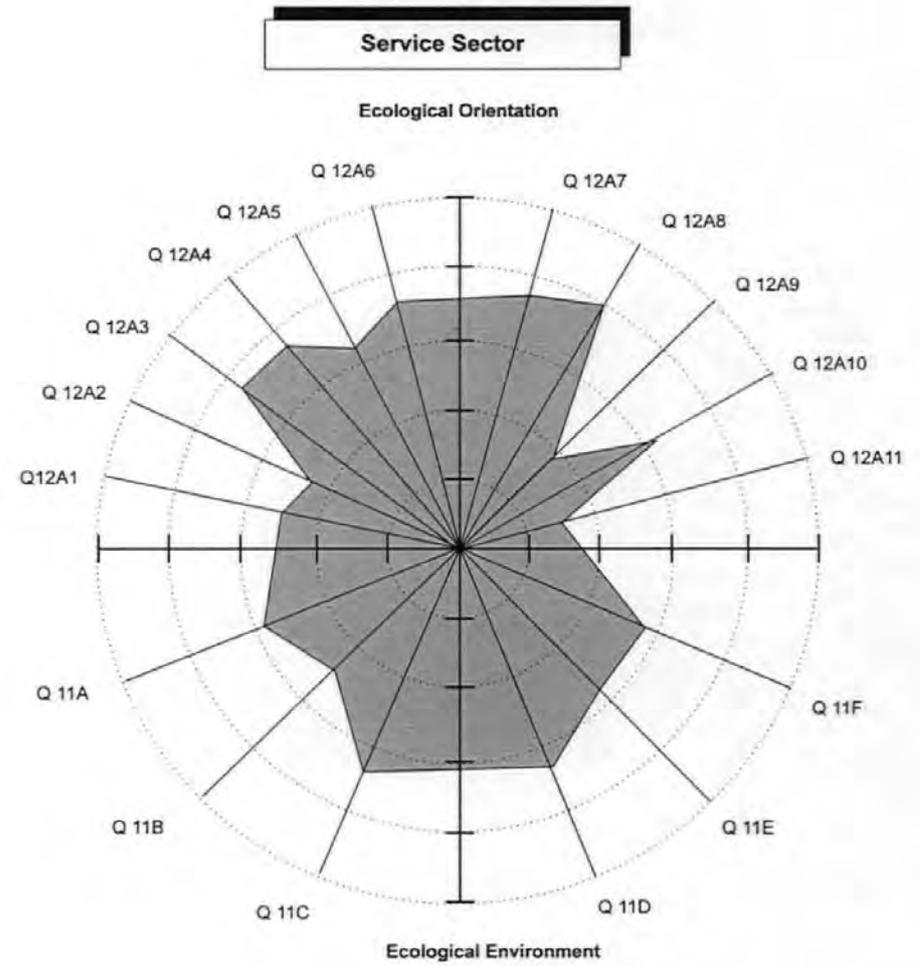


Figure 6.65 Profile: Size of the firm

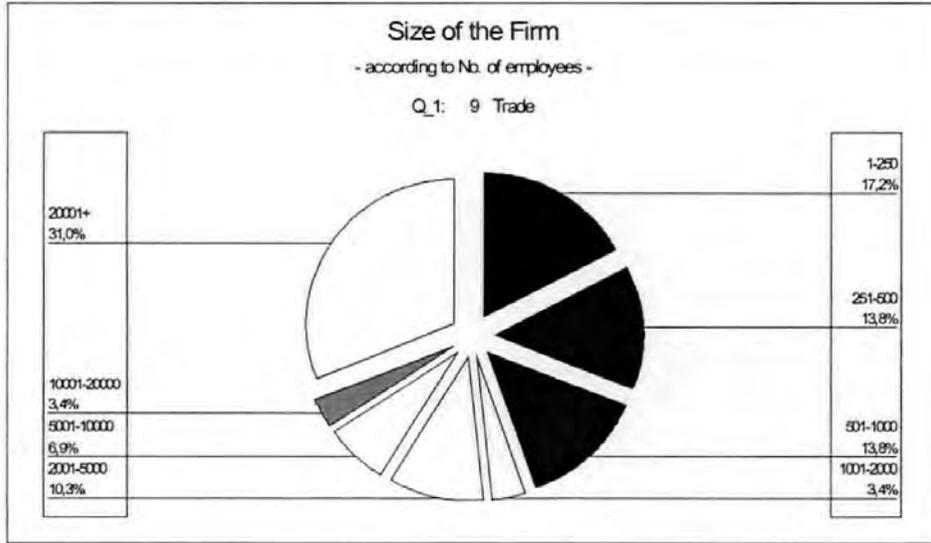


Figure 6.67 Profile: Sales performance over the last 3 years

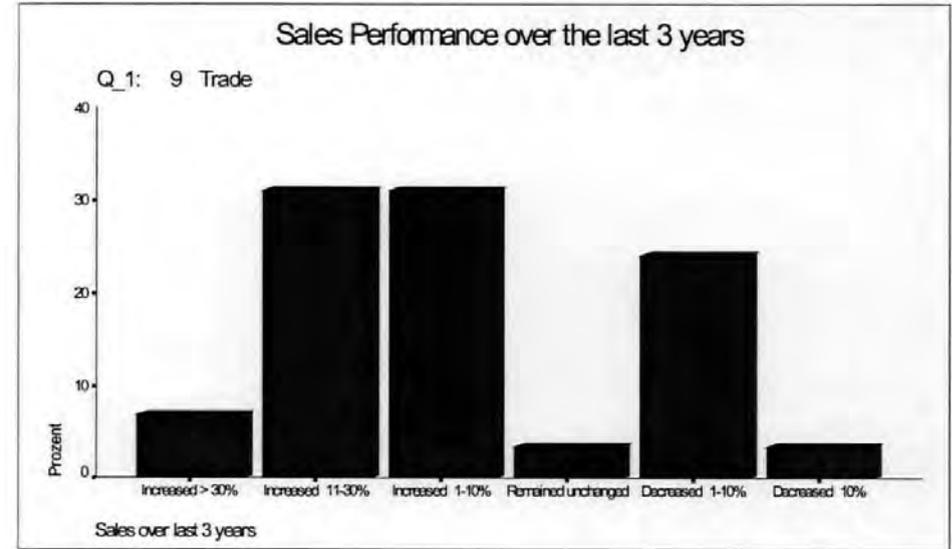


Figure 6.66 Profile: Source of customers

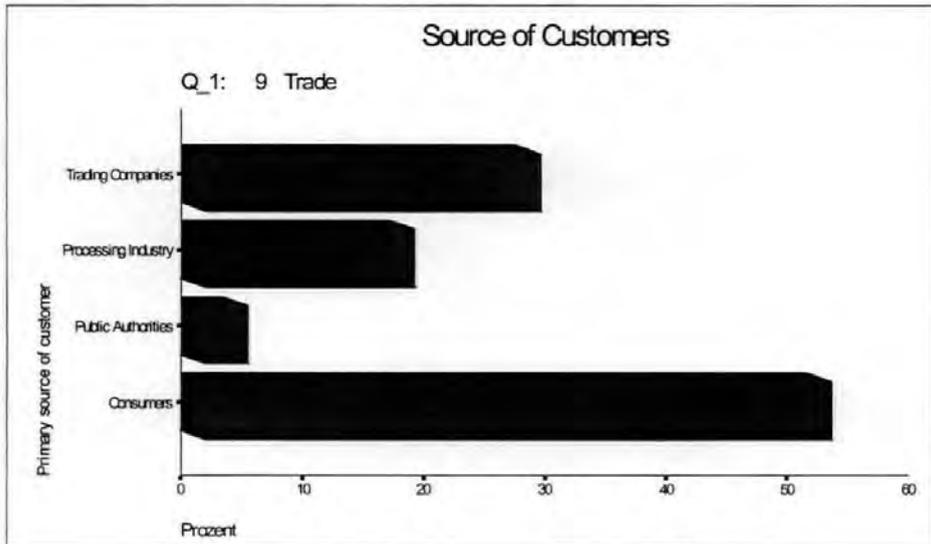


Figure 6.68 Profile: Expected sales performance over the next 3 years

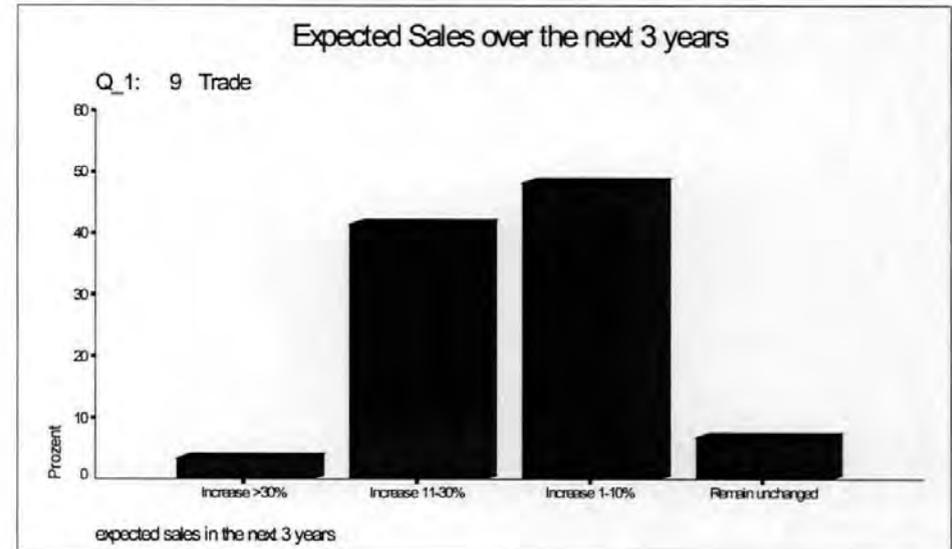


Figure 6.69 Profile: Markets firms mainly operate in

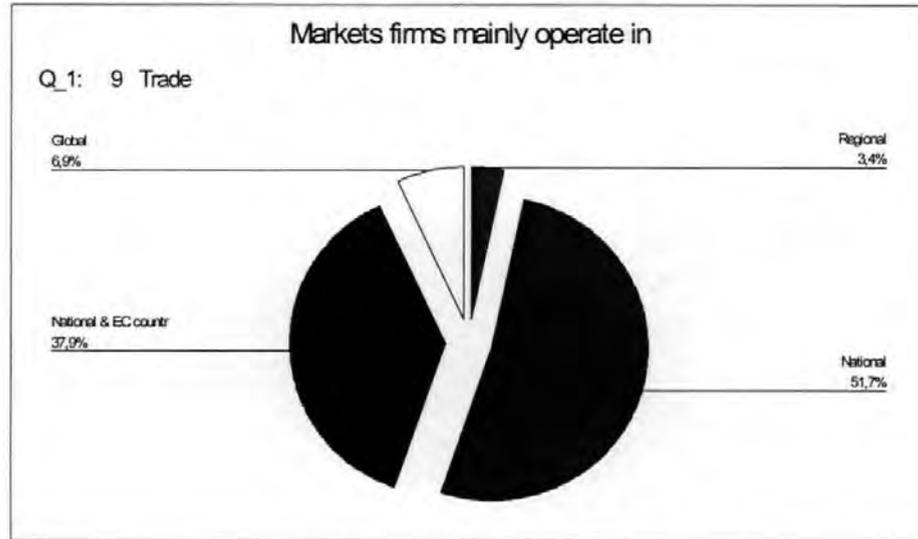


Figure 6.70 Profile: Generic strategy pursued

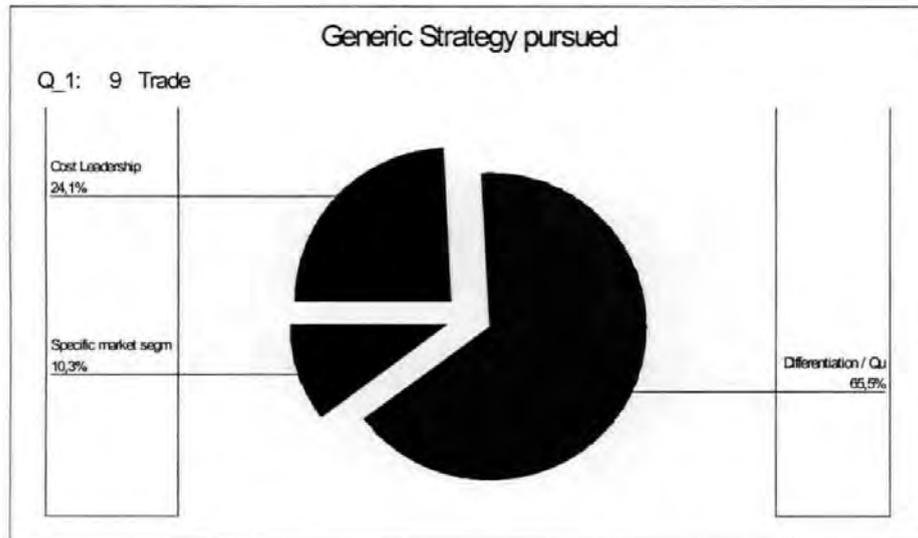


Figure 6.71 Rosette "Organisational structure & Management style"

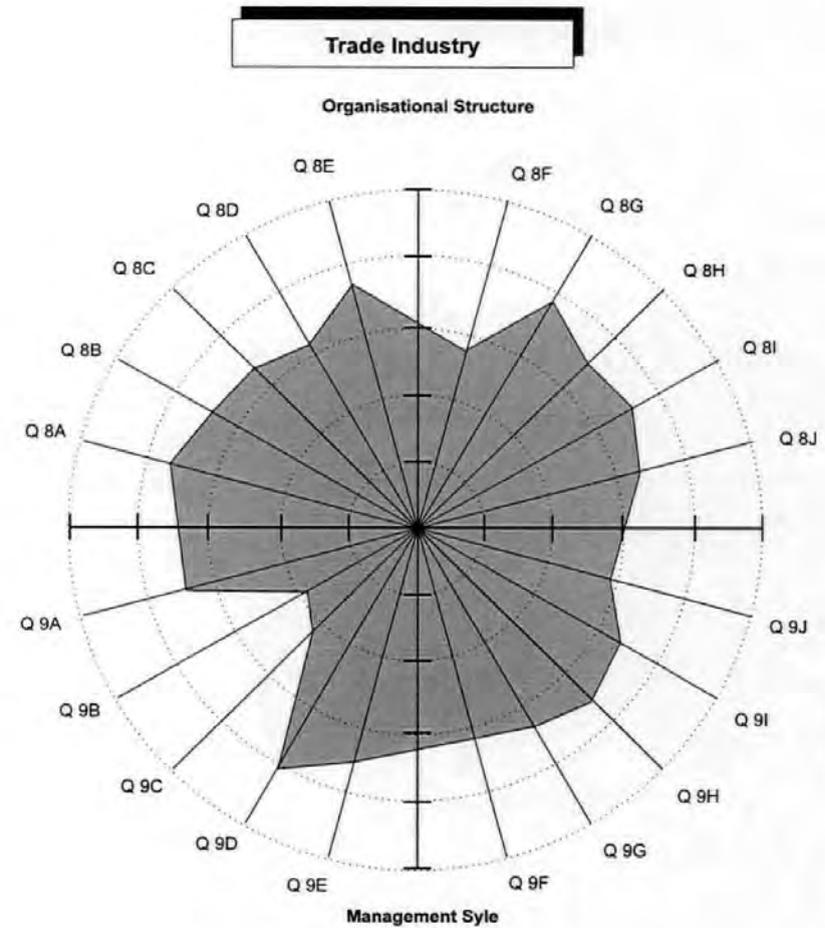


Figure 6.72 Rosette "Ecological orientation & Ecological environment"

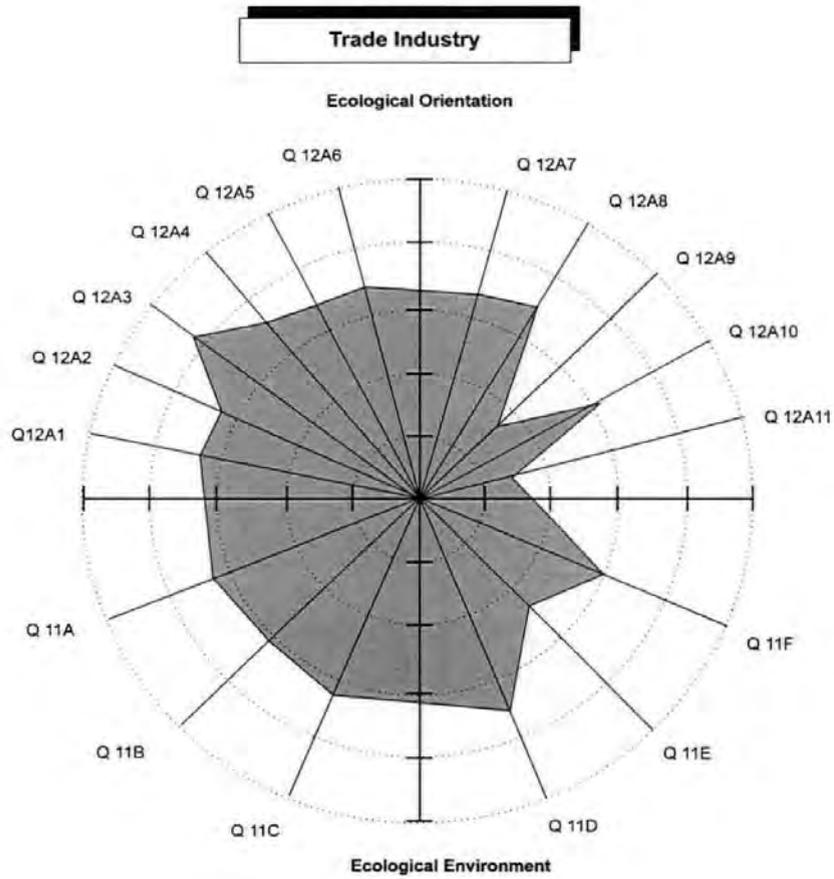


Figure 6.73 Profile: Size of the firm

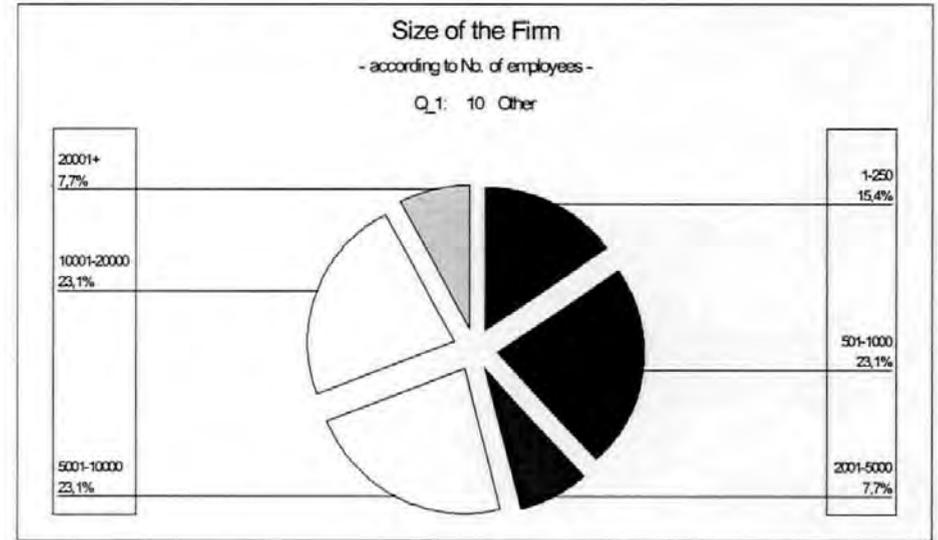


Figure 6.74 Profile: Source of customers

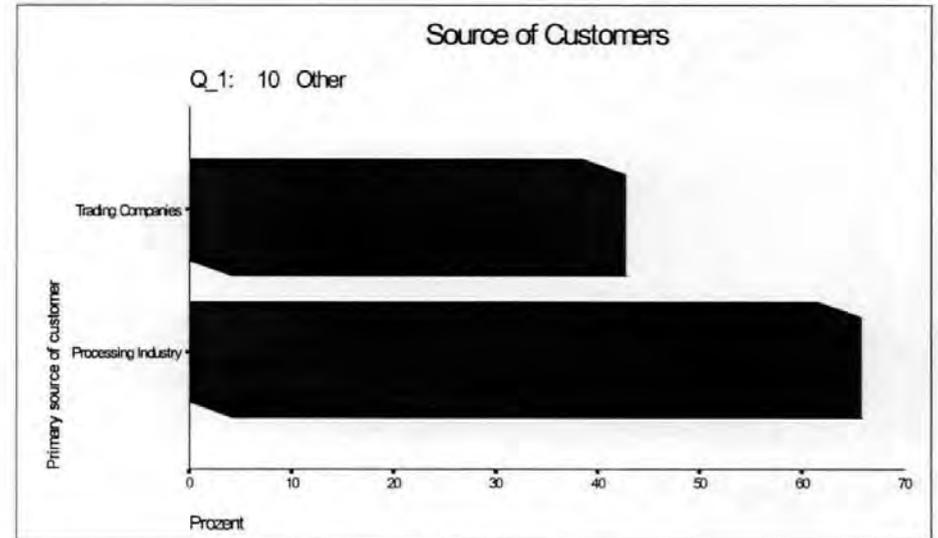


Figure 6.75 Profile: Sales performance over the last 3 years

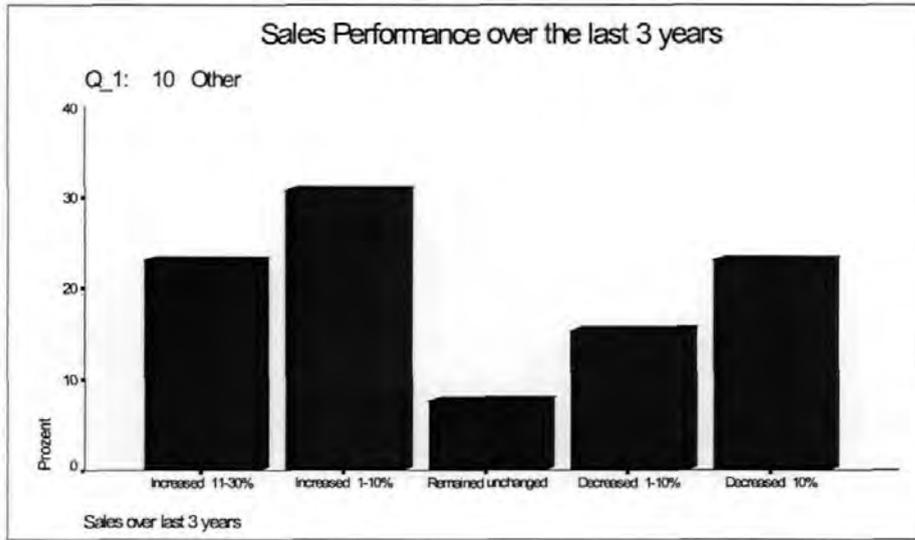


Figure 6.77 Profile: Markets firms mainly operate in

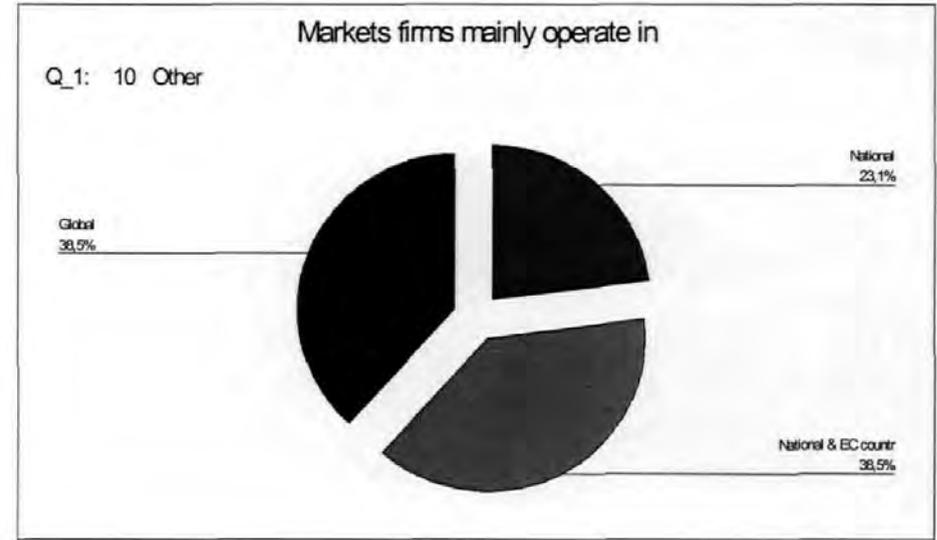


Figure 6.76 Profile: Expected sales performance over the next 3 years

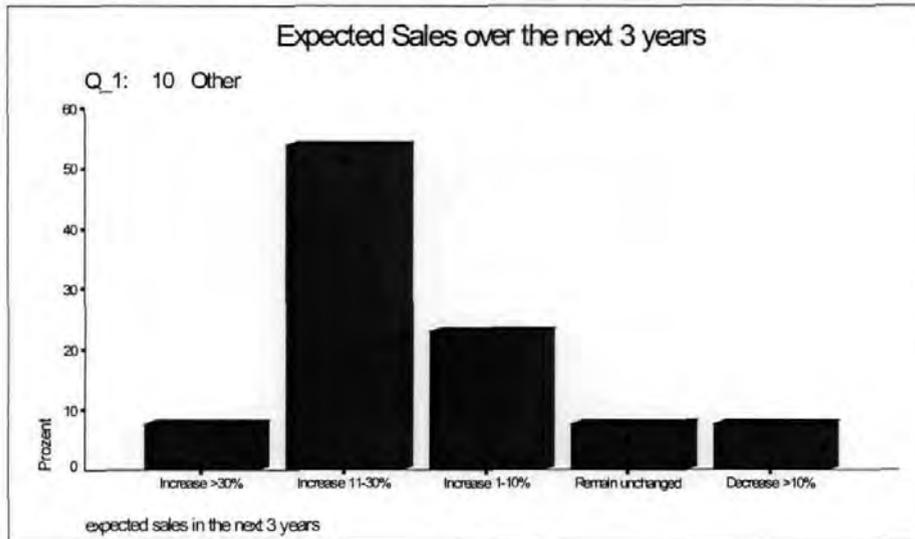


Figure 6.78 Profile: Generic strategy pursued

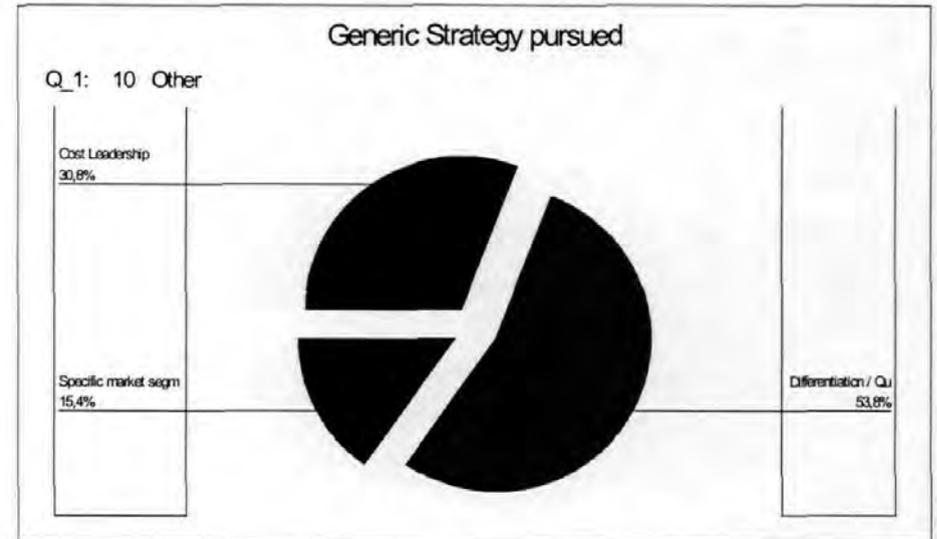


Figure 6.79 Rosette "Organisational structure & Management style"

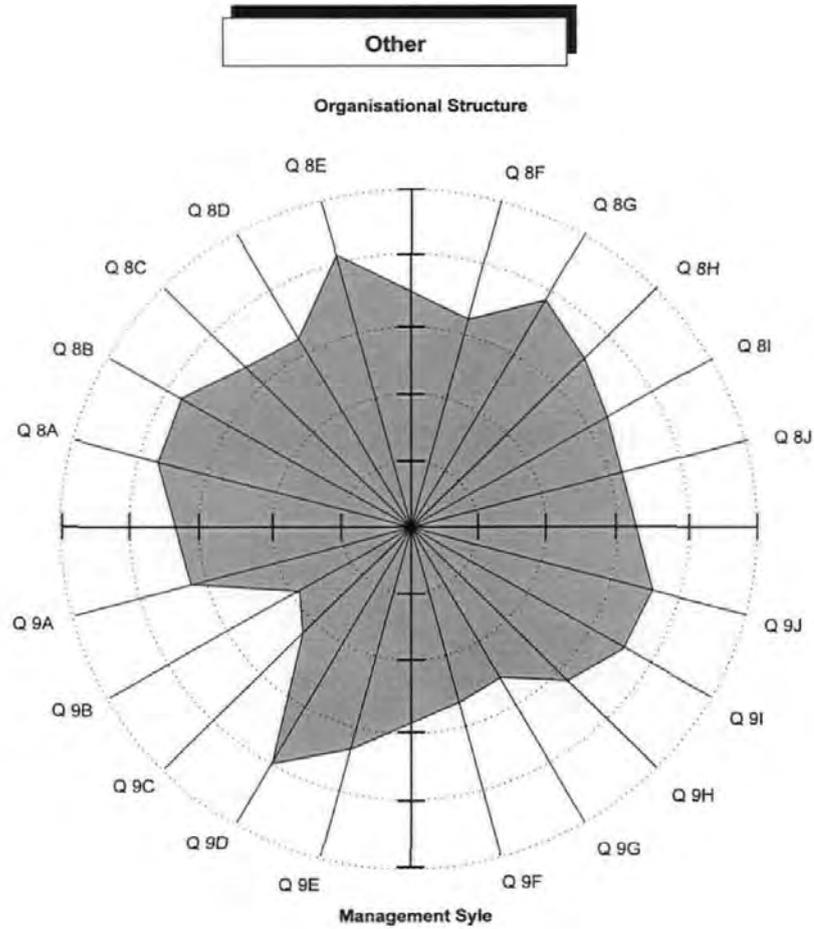
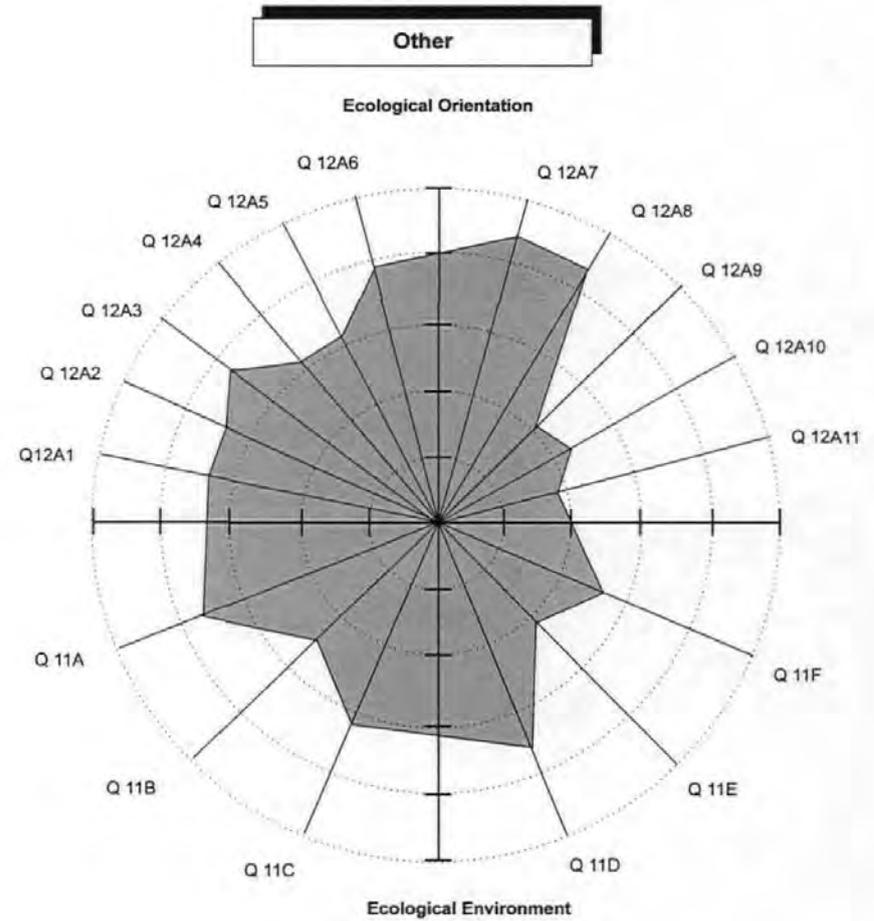


Figure 6.80 Rosette "Ecological orientation & Ecological environment"



## Appendix D

### Tables

Table 6.1 Question 8, 9, 10, 11, 12a (Index) - Proportions by industry

Table 6.2 Question 12b - Proportions by industry & total sample

Table 6.4 Sales performance over the last 3 years

Table 6.5 Expected sales performance over the next 3 years

Table 6.1 Question 8, 9, 10, 11, 12a (Index) - Proportions by industry

	Chemical/ Pharma	Energy, Water Supply, Coal Mining	Steel, Machinery, Motor vehicle manufact.	Electronic	Metal production & process.	Wood, Paper, Printing	Food & Allied	Service Sector	Trade	Other
<b>Organisation Structure</b>										
Mechanistic	40%	70%	48%	26%	42%	67%	52%	30%	48%	54%
Organic	60%	30%	52%	74%	58%	33%	48%	70%	52%	46%
<b>Management Style</b>										
Conservative	40%	70%	45%	44%	42%	50%	52%	50%	45%	62%
Entrepreneurial	60%	30%	55%	56%	58%	50%	48%	50%	55%	38%
<b>Business Environment</b>										
Benign	51%	80%	59%	48%	25%	50%	62%	60%	62%	54%
Hostile	49%	20%	41%	52%	75%	50%	38%	40%	38%	46%
<b>Ecological Environment</b>										
Benign	45%	50%	41%	44%	33%	56%	62%	70%	59%	61%
Hostile	55%	50%	59%	56%	67%	44%	38%	30%	41%	39%
<b>Ecological Orientation</b>										
Reactive	45%	20%	55%	44%	75%	67%	38%	70%	45%	46%
Proactive	55%	80%	45%	56%	25%	33%	62%	30%	55%	54%

Table 6.2 Question 12b - Proportions by industry & total sample

Industries	TOTAL	Chemical/ Pharma Industry	Energy, Water - Supply, Coal - Mining	Steel, Machinery, Motor- vehicle manufact.	Electronic Industry	Metal production & processing	Wood, Paper, Printing Industry	Food & Allied Industry	Service Sector	Trade Industry	Other
<b>Q_12.B_1</b>											
today	58%	55%	60%	62%	57%	42%	61%	57%	40%	62%	70%
concretely planned	17%	19%	30%	21%	13%	8%	11%	24%	20%	10%	15%
not planned	25%	26%	10%	17%	30%	50%	28%	19%	40%	28%	15%
<b>Q_12.B_2</b>											
today	50%	57%	40%	45%	57%	42%	44%	33%	40%	55%	62%
concretely planned	18%	13%	50%	20%	17%	11%	33%	33%	10%	14%	23%
not planned	32%	30%	10%	35%	26%	58%	44%	33%	50%	31%	15%
<b>Q_12.B_3</b>											
today	73%	83%	70%	62%	70%	50%	66%	91%	70%	69%	77%
concretely planned	14%	11%	20%	17%	13%	25%	17%	9%	20%	10%	15%
not planned	13%	6%	10%	21%	17%	25%	17%	10%	10%	21%	8%
<b>Q_12.B_4</b>											
today	64%	75%	80%	52%	57%	50%	56%	71%	90%	55%	62%
concretely planned	10%	11%	10%	10%	13%	17%	6%	10%	10%	10%	15%
not planned	26%	15%	10%	38%	30%	33%	39%	29%	35%	23%	23%
<b>Q_12.B_5</b>											
today	50%	55%	60%	52%	48%	50%	50%	43%	70%	48%	31%
concretely planned	21%	24%	20%	14%	22%	8%	33%	24%	10%	14%	39%
not planned	29%	21%	20%	34%	30%	42%	17%	33%	20%	38%	30%
<b>Q_12.B_6</b>											
today	65%	77%	90%	62%	61%	42%	56%	71%	70%	55%	62%
concretely planned	20%	17%	10%	21%	22%	42%	28%	14%	10%	17%	23%
not planned	15%	6%	17%	17%	17%	17%	17%	14%	20%	28%	15%
<b>Q_12.B_7</b>											
today	67%	79%	90%	59%	65%	58%	61%	71%	50%	45%	92%
concretely planned	18%	15%	10%	35%	9%	33%	22%	14%	20%	17%	8%
not planned	15%	6%	7%	26%	26%	8%	17%	14%	30%	38%	8%
<b>Q_12.B_8</b>											
today	61%	68%	80%	52%	61%	42%	56%	67%	60%	48%	92%
concretely planned	15%	15%	10%	31%	4%	17%	22%	14%	10%	7%	8%
not planned	24%	17%	10%	17%	35%	42%	22%	19%	30%	45%	8%
<b>Q_12.B_9</b>											
today	15%	17%	10%	10%	13%	17%	22%	10%	30%	14%	15%
concretely planned	3%	2%	10%	3%	3%	11%	11%	11%	7%	7%	7%
not planned	82%	81%	90%	86%	87%	83%	67%	91%	70%	79%	85%
<b>Q_12.B10</b>											
today	39%	51%	50%	31%	26%	50%	28%	24%	50%	45%	38%
concretely planned	10%	19%	7%	22%	22%	11%	5%	10%	7%	7%	7%
not planned	51%	30%	50%	62%	52%	50%	61%	71%	40%	48%	62%
<b>Q_12.B11</b>											
today	11%	11%	10%	7%	9%	17%	11%	10%	30%	10%	15%
concretely planned	4%	4%	10%	4%	4%	6%	6%	7%	7%	7%	8%
not planned	85%	85%	80%	90%	91%	83%	83%	91%	70%	83%	77%

Table 6.3

Industries	Chemical/ Pharma Industry	Rank.	Energy, Water - Supply, Coal - Mining	Rank.	Steel, Machinery, Motor- vehicle manufact.	Rank.	Electronic Industry	Rank.	Metal production & processing	Rank.	Wood, Paper, Printing Industry	Rank.	Food & Allied Industry	Rank.	Service Sector	Rank.
Q_8_A	3,72	3	3,30	7	3,59	5	3,91	5	3,50	6	3,72	1	3,52	5	3,90	3
Q_8_B	3,64	5	3,30	6	4,03	1	4,13	2	3,42	9	3,67	3	3,76	2	3,50	8
Q_8_C	3,64	4	3,50	5	3,66	4	3,65	7	3,58	4	3,61	5	3,29	8	3,50	7
Q_8_D	3,19	10	3,00	9	3,31	8	3,48	9	2,83	10	3,17	9	3,24	9	3,30	10
Q_8_E	3,94	2	3,80	1	3,83	2	4,35	1	3,75	2	3,61	4	3,86	1	4,40	1
Q_8_F	3,34	9	2,90	10	3,00	10	3,30	10	3,42	7	3,00	10	3,19	10	3,50	6
Q_8_G	3,94	1	3,50	4	3,76	3	4,00	4	4,25	1	3,72	2	3,57	4	4,00	2
Q_8_H	3,43	8	3,00	8	3,17	9	3,70	6	3,67	3	3,33	7	3,33	7	3,40	9
Q_8_I	3,60	6	3,70	2	3,41	6	4,09	3	3,42	8	3,17	8	3,57	3	3,50	5
Q_8_J	3,55	7	3,50	3	3,38	7	3,57	8	3,58	5	3,50	6	3,38	6	3,60	4
<b>Q_8</b>	<b>3,60</b>		<b>3,35</b>		<b>3,51</b>		<b>3,82</b>		<b>3,54</b>		<b>3,45</b>		<b>3,47</b>		<b>3,66</b>	
Q_9_A	3,19	8	2,80	7	3,14	8	3,48	6	2,75	8	3,00	6	3,19	8	3,40	4
Q_9_B	1,77	10	1,60	10	2,03	9	2,26	9	1,92	9	2,11	9	1,71	10	2,20	9
Q_9_C	2,34	9	1,80	9	1,90	10	2,17	10	1,75	10	1,83	10	1,81	9	2,10	10
Q_9_D	4,04	1	4,20	1	3,97	1	4,17	1	4,08	1	3,78	1	3,90	1	4,00	1
Q_9_E	3,66	4	3,10	5	3,48	6	3,57	4	3,67	7	3,28	4	3,62	2	3,40	3
Q_9_F	3,32	7	2,70	8	3,55	3	3,43	7	3,75	4	2,94	7	3,24	5	3,20	7
Q_9_G	3,34	6	2,90	6	3,48	5	3,39	8	3,67	6	2,89	8	3,24	7	3,10	8
Q_9_H	3,74	3	3,80	2	3,48	7	3,52	5	3,92	2	3,39	3	3,62	3	3,80	2
Q_9_I	3,60	5	3,50	3	3,48	4	3,65	3	3,75	5	3,22	5	3,24	6	3,30	6
Q_9_J	3,87	2	3,10	4	3,79	2	3,96	2	3,83	3	3,39	2	3,43	4	3,30	5
<b>Q_9</b>	<b>3,33</b>		<b>2,84</b>		<b>3,26</b>		<b>3,38</b>		<b>3,31</b>		<b>2,94</b>		<b>3,11</b>		<b>3,11</b>	
Q_10_A	2,68	8	2,70	6	2,90	7	2,83	8	3,00	8	2,94	8	2,71	8	2,60	6
Q_10_B	3,53	4	3,30	2	3,34	4	3,48	4	3,83	3	3,67	2	3,05	5	2,90	4
Q_10_C	4,09	1	3,50	1	4,62	1	4,52	1	4,58	1	4,56	1	4,24	1	3,70	1
Q_10_D	3,28	5	2,30	8	3,10	6	3,26	6	3,08	7	3,00	7	2,76	7	2,60	7
Q_10_E	3,53	3	3,10	3	3,55	3	3,83	3	3,75	4	3,39	4	3,71	2	3,60	2
Q_10_F	3,81	2	2,70	5	3,86	2	4,26	2	4,17	2	3,28	6	3,43	3	3,30	3
Q_10_G	3,06	7	2,70	4	2,86	8	2,96	7	3,58	6	3,28	5	3,00	6	2,70	5
Q_10_H	3,23	6	2,60	7	3,10	5	3,26	5	3,58	5	3,39	3	3,14	4	2,30	8
<b>Q_10</b>	<b>3,40</b>		<b>2,86</b>		<b>3,42</b>		<b>3,55</b>		<b>3,70</b>		<b>3,44</b>		<b>3,26</b>		<b>2,96</b>	
Q_11_A	3,89	2	3,60	4	3,41	3	3,30	2	3,58	2	3,56	2	3,62	2	2,90	3
Q_11_B	3,11	4	3,60	3	3,14	4	3,09	4	3,17	4	3,28	4	2,86	4	2,50	6
Q_11_C	3,43	3	3,90	1	3,45	2	3,17	3	3,42	3	3,39	3	3,24	3	3,40	1
Q_11_D	4,19	1	3,70	2	3,62	1	3,52	1	4,00	1	3,78	1	3,67	1	3,30	2
Q_11_E	2,11	6	2,20	6	2,14	8	1,96	6	1,67	6	1,94	6	1,90	6	2,80	5
Q_11_F	2,87	5	2,80	5	2,76	5	2,43	5	2,92	5	2,67	5	2,48	5	2,90	4
<b>Q_11</b>	<b>3,56</b>		<b>3,57</b>		<b>3,37</b>		<b>3,26</b>		<b>3,57</b>		<b>3,45</b>		<b>3,33</b>		<b>3,03</b>	
Q_12.A_1	3,30	7	3,40	7	3,14	5	3,00	7	2,75	9	3,22	6	3,00	7	2,60	8
Q_12.A_2	3,21	9	3,30	8	2,93	8	2,87	8	2,83	8	3,11	7	2,76	8	2,20	9
Q_12.A_3	4,26	1	3,90	5	3,76	2	4,04	1	4,08	1	4,22	1	4,19	1	3,80	3
Q_12.A_4	3,70	5	4,10	4	3,03	7	3,43	5	3,58	5	3,56	5	3,52	5	3,80	2
Q_12.A_5	3,47	6	3,40	6	3,10	6	3,22	6	3,00	7	2,94	8	3,05	6	3,20	7
Q_12.A_6	4,21	2	4,40	2	3,66	4	3,91	2	3,92	3	3,61	4	3,90	3	3,70	5
Q_12.A_7	4,02	4	4,60	1	3,72	3	3,57	4	3,83	4	3,72	2	3,76	4	3,80	4
Q_12.A_8	4,13	3	4,30	3	4,00	1	3,65	3	3,92	2	3,67	3	4,05	2	4,00	1
Q_12.A_9	1,96	10	1,50	11	1,52	10	1,91	10	2,00	10	2,22	10	1,90	10	1,90	10
Q_12.A10	3,30	8	2,80	9	2,55	9	2,83	9	3,00	6	2,89	9	2,62	9	3,20	6
Q_12.A11	1,89	11	1,70	10	1,41	11	1,78	11	1,75	11	1,56	11	1,52	11	1,50	11
<b>Q_12_A</b>	<b>3,74</b>		<b>3,95</b>		<b>3,62</b>		<b>3,56</b>		<b>3,56</b>		<b>3,58</b>		<b>3,65</b>		<b>3,50</b>	

Table 6.4 Sales performance over the last 3 years

**Effective Entrepreneurial**

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increased > 30%	1	6	7,8	7,8	7,8
Increased 11-30%	2	37	48,1	48,1	55,8
Increased 1-10%	3	21	27,3	27,3	83,1
Remained unchanged	4	6	7,8	7,8	90,9
Decreased 1-10%	5	2	2,6	2,6	93,5
Decreased 10%	6	5	6,5	6,5	100,0
		-----	-----	-----	
Total		77	100,0	100,0	

**Efficient Bureaucratic**

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increased > 30%	1	3	4,8	4,8	4,8
Increased 11-30%	2	14	22,2	22,2	27,0
Increased 1-10%	3	21	33,3	33,3	60,3
Remained unchanged	4	9	14,3	14,3	74,6
Decreased 1-10%	5	15	23,8	23,8	98,4
Decreased 10%	6	1	1,6	1,6	100,0
		-----	-----	-----	
Total		63	100,0	100,0	

**Unstructured Unadventurous**

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increased > 30%	1	3	8,1	8,1	8,1
Increased 11-30%	2	8	21,6	21,6	29,7
Increased 1-10%	3	14	37,8	37,8	67,6
Remained unchanged	4	6	16,2	16,2	83,8
Decreased 1-10%	5	4	10,8	10,8	94,6
Decreased 10%	6	2	5,4	5,4	100,0
		-----	-----	-----	
Total		37	100,0	100,0	

**Pseudo Entrepreneurial**

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increased 11-30%	2	12	34,3	34,3	34,3
Increased 1-10%	3	13	37,1	37,1	71,4
Remained unchanged	4	5	14,3	14,3	85,7
Decreased 1-10%	5	5	14,3	14,3	100,0
		-----	-----	-----	
Total		35	100,0	100,0	

Table 6.5 Expected sales performance over the next 3 years

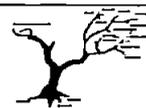
<b>Effective Entrepreneurial</b>					
Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increase >30%	1	7	9,1	9,1	9,1
Increase 11-30%	2	46	59,7	59,7	68,8
Increase 1-10%	3	21	27,3	27,3	96,1
Remain unchanged	4	2	2,6	2,6	98,7
Decrease 1-10%	5	1	1,3	1,3	100,0
		-----	-----	-----	
Total		77	100,0	100,0	
<b>Efficient Bureaucratic</b>					
Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increase >30%	1	2	3,2	3,2	3,2
Increase 11-30%	2	15	23,8	23,8	27,0
Increase 1-10%	3	30	47,6	47,6	74,6
Remain unchanged	4	12	19,0	19,0	93,7
Decrease 1-10%	5	1	1,6	1,6	95,2
Decrease >10%	6	3	4,8	4,8	100,0
		-----	-----	-----	
Total		63	100,0	100,0	
<b>Unstructured Unadventurous</b>					
Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increase 11-30%	2	14	37,8	37,8	37,8
Increase 1-10%	3	22	59,5	59,5	97,3
Remain unchanged	4	1	2,7	2,7	100,0
		-----	-----	-----	
Total		37	100,0	100,0	
<b>Pseudo Entrepreneurial</b>					
Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Increase >30%	1	1	2,9	2,9	2,9
Increase 11-30%	2	12	34,3	34,3	37,1
Increase 1-10%	3	14	40,0	40,0	77,1
Remain unchanged	4	7	20,0	20,0	97,1
Decrease 1-10%	5	1	2,9	2,9	100,0
		-----	-----	-----	
Total		35	100,0	100,0	

**Appendix E**

**Results - Cases**

## **E. 1. Results of the interviews**

### **E. 1.1. Company A**



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#### **Company Overview & Overall Behaviour**

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The firm has approx. 20.000 employees and belongs to the trade industry for food & allied products representing one of the world-wide biggest commercial enterprises. The firm operates approx. 7.600 stores in Germany and has producing sectors such as meat-, baker-, wood-, gardening businesses.

The firm is a family-owned business and still controlled by the owner. It is organised in business units which hold the responsibility for their business sector. The organisational structure is highly decentralised. However the firm retains some functions centralised, especially in areas where high synergies (e.g. logistics) can be achieved. It can be implied that the firm pursues a market/product development approach. It follows a diversification strategy with the objective to provide good quality at a reasonable price. The management emphasises the firm's political and social responsibility.

In 1984, the firm initiated the first environmental business activities. Today, the firm is ahead of other firms with regard to their environmental approach. It can be stated that the management is strongly committed to ecological issues. Despite the high ecological commitment, the management states that economic factors also have to be considered within the overall approach. The management argues that pursuing an environmental management approach is advantageous.

In the beginning the firm pursued environmental activities more sporadically. However, over the years, the management realised that it is more of an

advantage if it is approached as an integrated strategic business issue. Therefore the management decided to pursue the ecological issues in a more comprehensive and strategic way. At this point the firm decided to establish the main environmental department. The management sees itself as the marketing manager for "ecology".



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## **Value Chain**

### **Inbound Logistics**

The usage of reusable transport packaging is increasing continuously. Reusable packaging is also used for fruit, vegetable, eggs and milk transports. Recently, the firm started to use reusable transport packaging in the yoghurt segment made of polypropylene or corrugated board. One of the short term objectives is to increase the usage of special trays from yoghurt suppliers. The additional effort for suppliers lies in maintaining two different production processes, since these trays are not accepted by the entire industry. Therefore the request by suppliers is that the industry should agree on a standardised reusable transport packaging. The firm has moved from CFC towards HCFC and is now moving towards ammonia facilities needed for the operation of the cold-storage houses. The warehouses have a packaging/waste centre where the various packaging materials, refuses, and compost refuses are separated, sorted and passed on to recycling stations. Transport routes have been optimised according to their ecological impact. New warehouses are build according to ecological issues such as green areas on the roof, no PVC, conveyance of rainwater and a decreased sealing of surfaces.

### **Operations**

One major objective in the manufacturing business is to keep the waste volume as low as possible during the production process. Wastes and by-products are increasingly re-utilised, avoided or reduced in their usage.

Ecological impact assessments and life-cycle analysis are performed on which basis several process lines were altered or renewed and resources switched. The major outcome in the production process was and still is a reduction of waste-, water-, harmful emission- and energy consumption.

### **Outbound Logistics**

In distribution reusable packaging is mainly used, so that the packaging volume has been reduced dramatically. Transport routes to the stores have been optimised and only lorries with oxidation catalytic converters are in place. Furthermore all refrigerator lorries are replaced by CFC-free lorries. Several distribution routes are shifted to railway.

### **Marketing & Sales**

The firm established one of the oldest and most popular green trademarks in Germany. Periodically an ecological magazine is published which is displayed in the stores and handed out to customers. Several ecological brochures are published with the objective to support and increase the environmental awareness of consumers (e.g. educating how to behave at home and be environmentally friendly). Several ecological advertisements are published and ecological sponsoring is performed regularly (e.g. ecological professorship, support of forest districts, etc.). The firm cooperates with ecological institutions in order to maintain a knowledge transfer.

### **Procurement**

An ecological check list is used to systematically rate the environmental acceptability of products. The firm aims to educate and inform consumers by providing both, alternative environmentally friendly and standard products. Several institutions ask the firm to eliminate cans from their list of available goods. However, the customer is still demanding cans and every company is driven by their customers. Packaging requirements are handed out to suppliers

to which they have to correspond to. Suppliers offering environmentally friendly products or declaring that they apply an ecological orientated approach are preferably selected. For products of controlled ecological cultivation, suppliers have to provide the appropriate stamp of control. The firm would appreciate if suppliers could be called for the validation of Eco-Audit, as the method demands for a comprehensive ecological approach. Special supplier audits are performed concerning environmental issues.

### **Technology development**

A housebrand for controlled ecological cultivation was introduced and opened up a new market. The chocolate producing sector introduced an eatable inner-packaging. The firm aims to develop a new reusable transport packaging system in cooperation with a number of partners.

### **Human Resource Management**

General ecological seminars are carried out, where employees receive ideas for their private live. Several ecological targets are stated in the objectives of managers and supervisors. The human resources department develops job-area-specific training related to specific environmental issues of the branch or department. The firm introduced a screen saver for employees' computers displaying the unique green trademark, ecological tips and the company's ecological guidelines. A periodical circular for each subsidiary includes a green page pointing out specific green issues, measures, etc.

Employees are actively encouraged to support the firm's environmental activities. The firm emphasises the need for an open and intense ecological communication. Furthermore competitions and events are carried out in order to develop further ideas. Irrespectively of all these events, employees are encouraged to talk straight to the head of the environmental department.

## **Firm Infrastructure**

The ecological commitment represents an integral part of the firm's philosophy, which from the very beginning had an impact on the product range policy. The firm's mission is to be the environmentally friendliest company and the environmentally friendliest trader. Far-reaching ecological strategies and guidelines are integrated into the overall strategic approach. Business instructions, also covering ecological instructions are continuously inspected by an internal revision department. The firm partly adopt the principles of the environmental management system as it is seen as a comprehensive and strategic approach.

The head environmental manager reports directly to the top management. The environmental representatives of the subsidiaries, local and regional areas report to the manager of the head environmental department. The majority of the named representatives are not required by law. An ecological board is set up which consists of managing directors (responsible for technology, public relation, environment) and one of the partners. It represents a small powerful body of experts which holds the decision-making power and allows short reaction time. Below this body a working pool exists which consists of the ecological manager and all ecological business representatives. Next to this, several team meetings take place within the business units, headed by the ecological representative.

During the annual budgeting process each business unit has to allocate its environmental activities corresponding to the overall strategic objectives. The definition and achievement of this measurement is then reported and discussed in the working pool meetings. The overall coordination, reporting and control responsibility is allocated at the head environmental department which then reports to the ecological board. The environmental measurements are categorised in classes A, B, C. The letters represent the urgency and thus

the time frame by which the measures should be realised. The environmental measures and objectives are also part of the managers' personal objectives. The ecological controlling and information system delivers all the necessary information needed for analysis and the identification of further opportunities. An ecological report is published for the whole company. In contrast ecological reports & statements including an input- and output-balance sheet are only published for locations respectively the producing businesses which are validated according to the Eco-Audit. Up to know two producing sectors are validated according to Eco-Audit and two stores are certified according to the environmental management system DIN ISO 14001. They emphasised that the systems are seen to bureaucratic.

## E. 1.2. Company B

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### **Company Overview & Overall Behaviour**

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The firm is in the manufacturing business and has approx. 500 employees. A considerable part of business activities is the production of a house brand.

The firm is a family-owned business and still managed by the owner-family. The organisation is represented by a functional structure based on their primary tasks. It can be noted that the organisation has a centralised structure. The owner has to be informed of all changes and every decision is taken by the owner. The firm sees itself as pursuing a traditional and conservative business policy.

The first environmental considerations started ten years ago. The aim was to protect the environment where possible and, also, the compliance with legal requirements. Three years ago the firm decided to introduce the environmental management system.



### **Value Chain**

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#### **Inbound Logistics**

Reusable transport packaging is utilised partly. In some cases the suppliers are asked for environmental activities. Modern warehousing systems are in place which comply partly to ecological issues.

#### **Operations**

At the time the firm decided to introduce the environmental management system, certain lines of production were moved to other locations, due to

some environmental problems. However, within the existing production lines no further changes have been carried out.

### **Outbound Logistics**

The distribution department attempts to optimise transport routes. The majority of transports are carried out by a haulage contractor. This leads to the fact, that the firm has no influence on any environmental impacts or activities after the goods are handed over to the contractor. Packaging materials have been reduced or made thinner.

### **Marketing & Sales**

During product promotion tours the firm uses an electric car.

### **Procurement**

The firm has no environmental orientated requirements suppliers should comply to. The documents submitted by suppliers are only checked by the purchasing department with regard to environmental issues. If there is an negative incident a supplier audit will be carried out. The purchasing department offers also environmentally friendly office products.

### **Human Resource Management**

Employees are offered general ecological knowledge seminars. If there is a possibility the firms' newspaper includes ecological articles.

### **Firm Infrastructure**

The upper management supports environmental activities. The firm has written down its' environmental guidelines at the time they decided to introduce the environmental management system. The environmental policy is defined in accordance with the Eco-Audit, which covers several issues.

The majority of environmental measures are in compliance with legal requirements rather than foresighted. Environmental operational targets are also defined. Measures which require investments are - if approved by the upper management – considered in the budgeting process. The environmental representative has a control and supervisor role. The representative reports to the quality representative. The major task of the environmental representative is to monitor legal requirements with regard to their impact on business. The aim is to identify appropriate measures in order to be in compliance with the regulation and control the observation, etc..

The firm has no environmental committee and does not arrange any regular meetings. An environmental communication takes occasionally place between the environmental representative and a department. In the course of the certification an environmental declaration is published by the firm. The firm has no management information system concerning ecological issues. The information needed are identified and collected sporadically by the environmental representative. The decision on the environmental management system was made at the time the firm faced a public environmental problem. The environmental management system represents a systematic and documented process and may lead to a reduced risk of liability.

## E. 1.4. Company C

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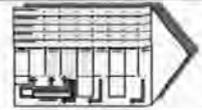
### Company Overview & Overall Behaviour

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The firm belongs to a holding company structure and is in the trading business. The holding company distributes approximately 400.000 articles representing all kinds of products. The firm has more than 5.000 employees and operates several department stores in Germany.

It can be assessed that the firm pursues a diversification strategy with the aim to deliver quality products. The firm has a decentralised organisation whereas some administrative functions are centrally organised. For example, the firm has a waste disposal concept valid for all stores. The firm emphasises the importance of the human capital. Creativity, one's own initiative, responsibility and team-orientation is increasingly encouraged. Furthermore it pursues a 'close to the customer' strategy. Hence, if market conditions change they are able to respond at short notice. The management assess the company's success factors to be the motivation and quality of their employees.

In the 90's several ecological regulations were introduced by the government to which firms had to react to. In the beginning the firm implemented measures in order to be in compliance with legal requirements. As time passed by the firm started to introduce measures beyond existing regulations. The firm was confident that new regulations or requirements for higher standards would come up. In some environmental orientated areas the firm did pioneering work. Several ecological measures were introduced which did not result in any financial advantages. The firm is continuously in search for new areas and ways how things could be improved as regards the environment.



### Inbound Logistics

The firm utilises reusable transport packaging. Some ecological measures required the integration of suppliers' processes. The environmental department helped to establish a recycling centre with a supplier and integrated his processes into the firm's internal channels. This offered the supplier the opportunity to perform his service at a very high standard in a short time, from which both parties participate. The firm started several approaches in order to convince producing suppliers of the firm's environmental ideas, which only succeeded in some cases. It can be stated that in the majority of cases the firm met companies with a lack of ecological commitment. Some of their attempts were even restricted by the dual system.

### Outbound Logistics

The central warehouse, from where mainly all products are passed on to the stores, is responsible for a pre-selection of the waste material. This already reduces the packaging volume before it is distributed to the stores. The firm established a partnership with a company which takes over the part of waste disposal, with the objective to separate further materials. This results in a further reduction of waste volume on the basis of modern technological facilities. According to the defined utilisation cycles the waste is then passed on to the appropriate channels. The partner manages the waste balance and is regularly inspected by the firm. Regardless of the waste disposal concept the firm aims at changing the ecological behaviour already at the beginning of the process.

### **Marketing & Sales**

The firm arranges and participates in ecological events carried out for consumers. It supports youth organisations and environmental committees. The environmental representative gives presentations and takes part in discussions at universities. Furthermore the environmental department participates in a committee that has an influence on decisions and the development process of new legal regulations. Despite criticism from outside and inside the firm has the opinion that it does not have to make a great deal about their environmental activities. Therefore they do not pursue any public relations activities emphasising their own environmental activities.

### **Procurement**

The environmental department developed principles and rules for packaging materials to which the firm and their suppliers have to comply to. Several methods of control are in place, based on existing certificates or internal requirements, which are used to audit suppliers or subcontractors. Several products for internal use are excluded from the purchasing list. The firm also eliminated a number of products in the stores, however, which is not a common procedure.

### **Human Resource Management**

The top management department develops and maintains an environmental orientated training scheme. The ecological issue is also integrated into the apprenticeship program. The firm runs a television station for its own use. It is used as an internal communication channel in order to keep employees informed and up to date. This has turned out to be a very good medium. Employees can perform their own ecological spots which they proposed in advance. The firm does not maintain a formal way of encouraging ideas. The open discussion is seen as the right way and represents the firm's culture. Good ideas are rewarded according to the rewarding system. Every issue of

the company's newspaper includes an environmental article with the aim to support the general environmental awareness of employees. Moreover it is used as a communication channel to inform employees about the firm's environmental activities. Furthermore the environmental department is also consulting employees in their private lives concerning ecological issues. The firm argues that in bigger sized and very diversified firms a highly sensitive staff provides a certain potential of wealth of ideas.

### **Firm Infrastructure**

Ecological activities and objectives are integrated into the overall strategic approach. The firm argues that the ecological approach has to be pursued top-down but needs to be supplemented by a bottom-up support. The board of directors have to take a leading role. As the firm maintains a highly intense communication policy, the management also attempts to talk to the shop floor workers. Strategic objectives are developed and monitored centrally with regard to the firm's overall strategy. The decentralised business units develop their own environmental measures and strategies according to the overall strategy and are also responsible for the monitoring. The firm does not want to put pressure on the business units as "achieving something by order" will not foster creativity and motivation.

The environmental committee of the firm consists of members belonging to the management and board of directors. Some meetings are organised as a working breakfast which are seen as a creative sessions. This committee develops general projects, measures and strategies. Each member then takes over a sponsorship for measures and is responsible for realisation within the organisation. The environmental department manager reports to the board of directors and is fully responsible for the firm's overall activities. He has a certain power to take decisions. However, past experience has shown that in most cases measures which were submitted to the board have been agreed to.

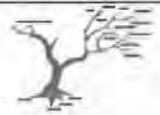
The board of directors relies upon the recommendation of the environmental department manager. Furthermore, the firm emphasised the advantage of reporting directly to the board, which results in a shorter line of communication and shorter and faster decision and response time.

Within the firm and the environmental department teamwork is strongly encouraged, otherwise their influence on the operational units would not be very successful. They consult other departments, lead brainstorming sessions, promote the environmental approach, etc.. They also lead an internal audit-process which takes place on a regular basis with the objective to test the day-to-day business live with regard to its environmental impact. The members of the department also take part in various creative circles of the industry.

Recently the firm integrated the ecological issue into the already existing 'process-costing' circle. It has the objective to analyse each process of the business from the beginning until the end with the aim to optimise process cost structures. As the 'process-costing' method is seen as a cradle-to grave approach the ecological issue fits in very well.

## E. 1.5. Company D

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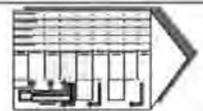
### **Company Overview & Overall Behaviour**

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The firm is in the manufacturing business and has approx. 300 employees. The major business is represented by the processing of raw materials.

The business belongs to a holding company and has a functional organisational structure. The organisation shows a strong centralisation tendency.

The packaging regulation and the „DSD“ (in Germany: Duales System) led the firm into the environmental way of thinking. The legal requirements forced the firm to perform environmental activities. The firm mainly follows environmental activities in order to be in compliance with legal requirements. It rates the environmental impact of the market to be low and it classifies itself as not being at the forefront.



### **Value Chain**

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#### **Inbound Logistics**

Due to the processing of raw materials the firm assesses its packaging volume delivered from suppliers as very low.

#### **Operations**

According to legal requirements several changes were carried out mainly in the waste sector. The firm sorts the waste and in some cases the waste is being reused - strictly speaking - passed on for re-usage. Within water intensive sectors, the firm aims at repeatedly use the water of upstream production processes.

### **Outbound Logistics**

All packaging measures having a positive economic impact have been exhausted. Transport routes are continuously optimised.

### **Firm Infrastructure**

The firm has no strategic environmental approach. The environmental activities are rather pursued sporadically. Environmental measures which require investments have, in principle, not been pursued. One part-time person coordinates the ecological activities and a further part-time person for each plant is in place. Once a year a meeting is held with the objective to exchange know-how and experience. Occasionally, ratios and figures are identified and analysed. A validation or certificate such as Eco-Audit or ISO 14001 is only of interest, when the trading industry will require evidence of being environmentally friendly.

## E. 1.6. Company E

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### Company Overview & Overall Behaviour

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The firm is in the manufacturing business and produces a brand name product in Germany. It has approx. 6000 employees and operates its main business in Germany. A few years ago the firm started to operate within the international market.

The firm is a family-owned business and still managed by the family in the fourth generation. In the past, the organisational structure was orientated towards regional and national business activities and the firm had a functional and centralised organisation. Few years ago the firm changed their organisational structure and management approach due to the decision to go international. Today, the organisational structure has shallow hierarchies and is strongly decentralised with highly decentralised decision-making powers. In other words, the upper management *only* defines the general conditions and the overall business strategy.

The firm is organised in product-range divisions which are fully responsible for the business operation. Within their predefined "room for manoeuvre", they can act how they like. A division consists of several competencies such as sales, R&D, production and marketing which are bundled and concentrated on the division's market place. These competencies are partly organised in virtual project teams or task forces. Cross-divisional competencies such as material control, logistics, controlling and personnel operate beyond the divisions. The objective is that the division should be able to make market-orientated decisions – to be at the right place at the right time. The firm's rewarding system also changed, so that it encourages employees to work for this product-range divisions.

The experience has shown that this structure allows a greater speed of reaction to market changes. It generally increased the speed of action and flexibility and established a divisional autonomy. One of the positive issues is that, even though the firm is family-driven, not too many members of the family try to manage the firm. The overall firm's philosophy is represented by consumer trust and health, reliable quality and permanent innovation.

The decision to be more active in the environmental sector was taken in the mid-80s. Initially, a full-time environmental manager was appointed. The decision was taken before the ecological issue came into fashion. Far reaching environmental activities started by the end of the 80s, e.g. with the creation of green space around the parking area of the firm. The firm's philosophy is to act environmentally friendly before the firm is forced to do so. This point of view goes hand in hand with the firm's attitude towards everything new and its social, cultural and ecological commitment. The management's objective also is to be at the forefront with regard to environmental issues. It associates an environmental approach with the objectives of qualitative growth or sustainable development.

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## **Value Chain**

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### **Inbound Logistics**

In several product areas reusable transport packaging is used. Raw materials are delivered in silo-trains and thus generate no packaging. Several products are delivered in big-bags. Electrical vehicles are used instead of diesel engines are used for the distribution of materials within the plant. Increasingly bio-diesel vehicles are tested. Transport routes have been optimised in cooperation with suppliers. A high utilisation of transports is achieved by ordering the appropriate volume and thus exhausting hundred percent of the

pallets. The warehousing system (high bay tracking system) has been altered or renewed to comply with the firm's environmental requirements.

### **Operations**

Production processes are continuously analysed with regard to environmental opportunities. The optimisation measures are still not exhausted and the firm's objective is to achieve a maximum of what is possible. In some cases there was a need for changes of plant processes which were very expensive. The experience showed that a positive environmental impact is convincing enough to decide upon an investment. Several measures with the objective to reduce the environmental impact of energy-, water-, emission- and waste consumption are continuously pursued. The firm operates its own compost facility. Furthermore, life-cycle analysis is continuously performed with the objective to look at the entire process. New technological standards are introduced considering ecological issues. In this context the firm stresses the importance of "HACCP" (an EC-regulation, the 'hazard analysis critical control point'). This regulation is related to the observance of hygiene-guidelines within the production- and distribution-process of food. It requires the firm to identify critical checkpoints within the process and then critically analyse the risks at these checkpoints. This represents an approach of analysing a problem in its entirety, which to a certain extent, also affects the environmental approach. The firm's packaging operation aims at reducing the volume of material, using environmentally friendly materials and achieving a standardisation of packaging.

### **Outbound Logistics**

Of course, all packaging materials needed for transport have been reduced to its minimum. The size of the pallets were adjusted in order to achieve a better utilisation of transports and warehouses. Furthermore, customers are encouraged to place orders by pallets in order to achieve the best utilisation.

The transport routes are continuously optimised. The logistics team is continuously slimming down their logistics. The firm aims to use rail transport where it is practicable, as the usage of freight traffic in Germany is still very expensive and problematic in usage and time and thus not competitive. The logistics team has tried several times to prefer rail to road transport. After all, the firm discovered an alternative. The roadrailer is an American system of freight traffic which does not need any container terminals and no cranes. Therefore no changes in the infrastructure are required, so that you can load up the freight straight from the lorry. However this company is not located at many stations and therefore can only be used on one route.

### **Marketing & Sales**

Public relation activities are performed with the objective to support the environmental awareness of consumers and to inform the public of the firm's environmental activities. Furthermore, congresses, industry working pools, and workshops are organised; brochures and reports are published. The firm also arranges workshops with the trading industry for the purpose of exchanging know-how. The firm took the initiative and replaced CFC-freezers in some retailer shops. During Eastern and Christmas time, the marketing department insists on marketing displays, which usually results in an increased packaging volume. In this case the firm attempts to offer an added value like further usage of the packaging e.g. for kids as toys.

The firm co-operates with several institutions (e.g. ecological associations, universities, research associations, etc.) with the objective to participate in scientific and academic works and maintain a knowledge transfer.

### **Procurement**

The ecological issue is fully integrated into the already existing procurement audit process. Suppliers, depending on their size and product, are classified in three categories. The upper class of suppliers is to be audited within shorter

periods than the others. During the audits, the purchasing department is accompanied by the specific departments like the environmental department. The suppliers are supplied with the firm's general conditions and ecological requirements to which they have to comply to. Several products especially for the internal usage have been struck off the purchasing list (e.g. office material).

The firm pursues the policy that if a supplier is rated to be more environmentally friendly at almost the same price, then this supplier will preferably be selected. A special attention is being drawn to suppliers of controlled ecological cultivation products.

### **Technology development**

The development department and the external partners responsible for the designing and producing of packaging have the objective to use reduced materials. Furthermore, they search for substitutes of environmentally friendly materials. The past experience has shown that in several cases a packaging which comes up to environmental requirements also lead to a reduction of handling costs. One objective with regard to packaging requirements is the usage of mono-, laminated- and non synthetic materials. Consumer analyses are conducted in order to test environmentally orientated alternatives like reusable consumer packaging.

The firm participates in the research work with regard to the production of a pallet which should be made of recycling materials (esp. materials which are collected by the 'DSD' and are - up to now - not recyclable). The firm's research department has the objective to search for natural products, which is also triggered by the health trend. In some cases, where it is necessary and possible, the researchers also look for substitutes of resources which are more environmentally friendly.

## **Human Resource Management**

Every employee signing an employment contract has to sign an ecological declaration. This ecological declaration is part of the contract. The ecological aspect is also an integrated part of the apprenticeship program. Trainees have to work on at least one environmental project during their training program. Each employee has to visit specific environmental training related to the department. The environmental issue is integrated into the managers and supervisors agreement on operational objectives as well as into the employees' assessment system.

The motivation of employees is closely related to the ecological behaviour and the awareness of employees. The employees view the firm's behaviour very positive and hence it inspires enthusiasm. The firm also takes over the disposal of employees' garbage (especially toxic wastes). Every issue of the staff-magazine includes one article related to environmental measurements or activities. The management pursues an open and intense environmental communication policy. The firm, generally, aims to fully integrate employees into all business activities. Internal competitions are carried out concerning specific environmental topics. Employees are encouraged to submit ideas and be part of the process. The team structures and a kind of 'belonging to a family' culture is very supportive.

## **Firm Infrastructure**

The management and the family (the owner of the firm) are strongly committed to the firm's environmental approach. The ecological issue is integrated in the firm's philosophy and in its missions and objectives. Every year specific environmental strategies are formulated, which the firm wants to achieve in the short-, middle- and long-term. The ecological handbook consists of various ecological guidelines. Several project teams and task forces work on further opportunities which are then approached. The firm's general approach

is to see the legal ecological requirements as a minimum standard, aiming at being visibly better and always progressive.

The environmental manager reports directly to the management board. He has room for manoeuvre in making decisions with regard to environmental activities. His sphere of authority goes beyond his department i.e. into the operational business. Investment plans of divisions are being checked by the environmental manager with regard to their environmental impact. In that role he has "veto power". He is part of every internal circulation and is considered as an internal ecological check- and consulting-point for almost every business recommendation or decision.

The environmental manager also leads the internal audit, which is performed in every business unit. The process is orientated by the environmental management system ISO 14001ff. Nevertheless, the full responsibility for the environment lies in the product range divisions. Environmental strategies are developed and considered in their budgeting program. The control and monitoring function is observed by the environmental manager, the divisional managers and the management board. Additionally to the environmental manager, each plant has its own environmental representative.

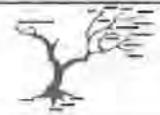
The environmental committee meets periodically, where further environmental targets are set and activities are initiated. Environmental objectives are part of the agreement on operational targets and are thus considered in the managers' rewarding system. Several environmental subject related project teams and working pools meet on a regular basis. Environmental information needed for analysis are partially received from the environmental controlling system, which is still under development and seen as a very important tool for identifying further opportunities. A major objective of the information-system

is to consolidate all individual activities, point out the links and - in the end - receive a concept in its entirety.

The firm publishes an environmental report consisting of objectives, measures, input- and output balance sheets, etc.. Two production facilities are audited and certified according to Eco-Audit and ISO 14001. The prime importance is not the certification but the methodology and practice gained by going through this process. Furthermore the firm integrates locations abroad into the environmental management approach. Several locations abroad also pursue an environmental management approach and aim at achieving a validation according to ISO 14001.

### E. 1.3. Company F

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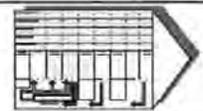


#### **Company Overview & Overall Behaviour**

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The firm is in the processing business and has approx. 3000 employees. It produces a house brand name in Germany and runs its major business within the national market.

The firm is a family-owned business and still under control by the owner family. The organisation is structured in their primary tasks showing a functional organisational structure. Functions and responsibilities tend to be very centralised. All decisions are made by the owner alone.



#### **Value Chain**

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##### **Inbound Logistics**

Due to the 'DSD' (Duales System in Germany) the firm undertook some alterations in the packaging area with regard to the material used and its density. Up to now the firm does not actively look for opportunities of reusable transport packaging or alternative resources from their suppliers.

##### **Operations**

The firm uses mono-materials instead of laminated films. The firm argues that in principle the production process does not cause much waste. However, occasionally some by-products are passed on to an industry which can reuse these by-products. Recently the firm started to sort the waste. The need for looking at the production process in its entirety has never been necessary or wanted. Only obvious issues have been handled.

### **Procurement**

Occasionally suppliers are audited predominantly with regard to procurement issues.

### **Firm Infrastructure**

The environmental issue is not integrated into any business objectives. Handling environmental issues in a more systematic or strategic way is not aimed at up to now. The firm is looking at its competition. The first competitor started activities with regard to the ISO 9001 and Eco-Audit validation. This may be a reason for the firm to initiate some activities in order to defend its very high market share.

Many environmental ideas required investments, like technology alterations of the production process, which were not approved of. All these requirements such as 'Quality Assurance ISO 9001, Eco-Audit, Environmental Management ISO 14001, HACCP' are seen as a financial burden. They are too bureaucratic. There are not enough resources to handle all these issues.

## E. 1.7. Company G

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### **Company Overview & Overall Behaviour**

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The firm is in the processing business and has approx. 35.000 employees. It represents one of the biggest businesses within the industry for food & allied products. It produces various products of which some represent a brand name in Germany. The firm operates within the global market.

The business is organised in product range divisions. It represents a matrix structure. Several functions are decentralised with the objective to act more closely to the market and thus be more flexible. However, some control and coordination functions are held centralised. The firm pursues a diversification strategy. This objective is also executed by several acquisitions.

Years ago it started with several environmental activities. The management takes the view that a firm of this size and presence has to make a considerable contribution to the social and ecological environment. It can be argued that the firm has a strongly developed sense of duty towards society.

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### **Value Chain**

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#### **Inbound Logistics**

In cooperation with major suppliers the firm achieved a large reduction of packaging materials, alternative use of transportation and optimisation of transport routes. Furthermore the firm aims to select resources which are produced from the environmental standpoint. Environmentally harmful resources from suppliers have been replaced by more environmentally friendly resources. All this has been a result of the continuous analysis of the entire product life-cycles. The firm utilises increasingly reusable transport packaging.

The warehouses are equipped with a high standard of high-bay racking control systems.

### **Operations**

A remarkable reduction of consumer packaging has been achieved. An analysis of the entire product life-cycles is carried out continuously. By-products, energy-, waste- and water consumption have been dramatically reduced. Furthermore, several waste components are passed on in order to be reused. The remaining waste is then passed on to disposal partners. Several technological alterations of production lines were carried out. New technological standards have been introduced covering ecological issues.

### **Outbound Logistics**

Transport routes are continuously optimised. The firm has the objective to shift a major part of the road transport to the railway. Mainly reusable transport packaging is used.

### **Marketing & Sales**

Environmental measures and strategies as well as the achievement of objectives are reported in the firm's magazine. A separate environmental report is published for the public. Various sponsoring activities are carried out. One of the firm's major objective is to increase the environmental awareness in the public. The firm participates in an environmental working group of the regional industry and in several committees and research institutions.

### **Procurement**

The firm maintains an input/output requirement catalogue with regard to environmental issues to which suppliers have to comply to. In regular periods of time supplier audits are carried out by the environmental department. Suppliers are classified according to their importance and need for frequent

audits. A taskforce is working on the issue of ecology and its day-to-day impact with the objective to identify further procurement opportunities.

### **Human Resource Management**

Departmental-, and product- related training are developed. Each employee has to visit a predefined number of environmental courses. Project teams and task forces are launched for specific environmental issues. Past experience has shown that this approach – beyond hierarchies and divisions – can be rated as being a successful way of creating ideas. A new rewarding system has been established in order to further integrate employees into the ecological vision. Among the day-to-day encouragement of ideas and creativity the firm emphasises the need to participate in employees' knowledge. They pursue an open and intense environmental communication policy. The environmental department further organises ecological competitions.

### **Firm Infrastructure**

The upper management is deeply committed to the ecological approach. The ecological issue is integrated into the firm's philosophy and strategic approach. The firm's objectives include comprehensive environmental objectives. The management signed an environmental declaration with the city where head office is located. Each division develops, periodically, strategies and measures. The ultimate responsibility is held by the product-range divisions. Achievements and further opportunities are continuously monitored and analysed. All measures have to be budgeted by the divisions and variances have to be explained and corrections initiated.

The head environmental department reports to the management board. The head of the department is a member of the board. Among this, every division has a full-time environmental representative and each plant has a representative. The head environmental department has the responsibility for

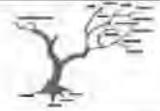
all environmental activities performed within the firm. Their task is to monitor activities, consult divisions and functions, lead project teams, maintain an information system, participate in the development of strategies and objectives, etc..

Several environmental committees exist which meet on a regular basis and consist of the management and external persons. Among these several working groups and project teams exist which work on further environmental opportunities.

Various analyses like the entire product life-cycle, stream analysis of resources, materials, energy, etc. are continuously carried out. The firm emphasises the need to maintain an environmental focus on every single stage of the business life cycle and pursue a proactive approach. This allows the firm to be ahead of any legal requirements. Up to now, three processing business have been validated according to the Eco-Audit and further plants - also abroad - approach a validation.

## E. 1.8. Company H

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### **Company Overview & Overall Behaviour**

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The firm is in the beverage processing business and has approx. 700 employees.

The business belongs to a holding company structure which consist of a variety of individual units operating independently. It is organised in product divisions showing a decentralised tendency.

The firm is one of the first which introduced the Eco-Audit and ISO 14001. Long before this the firm approached environmental activities. The main reason for introducing the environmental management system was the top management decision of the holding company to pursue the environmental approach more continuously and systematically, even though it represents a mechanistic approach.



### **Value Chain**

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#### **Inbound Logistics**

The firm started several approaches in order to convince suppliers of an environmental approach. It offered the suppliers the assistance of it's own labs. Today, reusable transport packaging is increasingly utilised.

#### **Operations**

Several production processes have been analysed with regard to their environmental impact. Due to this analysis several measures, like the introduction of technical standards have been identified and realised. The past

experience has shown that an approach of calling everything into question results in a higher visibility of problems. The energy-, water-, emission- and waste consumption have been reduced. By-products were analysed with regard to the degree they can be avoided, reduced or reused, with the result that several by-products are now reused. The selling/consumer packaging has been radically reduced. As a consequence less water is now used.

### **Outbound Logistics**

The business makes it necessary to mainly use reusable transport packaging. Transport routes are continuously optimised.

### **Marketing & Sales**

The firm is not very promotion orientated. Sometimes the firm places some news items with regard to their environmental activities.

### **Procurement**

Strict procurement guidelines are in place, covering a plethora of environmental issues to which suppliers have to comply to. Supplier audits are carried out continuously to assure compliance to their internal requirements.

### **Technology Development**

The firm is looking for substitutes and alternative materials in order to reduce by-products and waste and thus reduce the ecological impact. Various improvements came into being due to technological modification and modernisation. As soon as new technological machines are required, the firm takes the opportunity to look for environmental issues which can be covered. The company group operates a research & development division which works on environmental concepts and consults the divisions with regard to environmental questions.

## **Human Resource Management**

Job- or department specific training is carried out. Periodical bulletins include environmental issues. Environmental measures are integrated into the managers agreement on operational objectives.

## **Firm Infrastructure**

The overall environmental activities are fully accepted and supported by employees. The commitment of the upper management is relatively high. One of the reasons for this commitment is the visible improvement of qualitative and quantitative issues regarding the environmental issue. The environmental issue is incorporated into the firm's philosophy. Environmental strategies and objectives are defined for the short-, mid- and long-term. The environmental measures are classified into three categories related to their urgency. Furthermore, due to the comprehensive process analysis – where all aspects of a process are called into question - further environmental activities were initiated. Objectives are continuously monitored by the business unit. The firm argues that, nowadays, the environmental approach is inevitable for firms. In the course of time firms will have to react, e.g. sooner or later the trade will set environmental requirements. The environmental department consists of a team and reports directly to the management board. In the past, the environmental representative did not report to the management board. However, it can be realised that today's structure results in a stronger authority. Furthermore, each plant has its own environmental representative. The environmental department is responsible for monitoring, coaching, promoting, planning, and the releasing of environmental measures. The members of the environmental committee meet periodically in order to discuss current issues, measures and further activities are decided upon. Periodically an internal report consisting of ratios, qualitative issues and measures and the achievement of objectives is distributed.

### **E. 1.9. Chamber of Commerce & Trade association**

The sensitiveness or interest of firms in environmental activities arose from the legal requirement to nominate emission-, waste- and mechanical representatives and the increasing recycling-quotas for packaging material enacted by the government. All these led to the fact that firms decided to take over the opportunity to handle the environmental issue in a more comprehensive and strategic way and consequently approach the green issue in its entirety.

Due to this environmental trend a new industry emerged which led to new technological standards, trends and opportunities. The environmental approach has been seen as an export-related opportunity. However, this will work only as long as the German standard can also be exported. Even though the European standard represents rather a minimum-standard which is far below the German requirements, firms can not dare to face any ecological problems abroad.

Due to several legal requirements which came into effect at very short intervals and further pressure from the public, require firms to approach even higher standards and become even faster, more flexible, active, and creative within the ecological environment. The complaint of firms about the cost impact of environmental activities which lasted for years, disappeared.

As years go by, firms – especially the bigger sized firms - realise that the environmental issue results in being a question of location. In the case of the allocation of plant utilisation the plant with the highest environmental standard is preferably selected.

It can be recognised that capital investments are carried out more continuously – especially within bigger sized firms – and therefore the technological as well as the environmental standard is keeping pace. Capital spending plans increasingly consider - or are led - by environmental issues. The majority of firms have their capital spending plan approved of by their environmental department or an external environmental consultant, before it will be finally approved.

Many firms still pursue the end-of-pipe technology, whereas a remarkable trend towards integrated technology can be recognised, which is also called "PIUS" (Product-Integrated-Environment) in Germany. The environmental approach has to start at the designers desk. Here one should also think of what happens with the product at the end of its product life cycle. Firms discover that this approach offers an advantage of being ahead of others with regard to their development activities. This is also one reason, why – in the beginning - the waste disposal issue was allocated to the purchasing department's responsibility. This necessitates the dealing with the entire material flow system.

It can be recognised that all these approaches lead to a restructuring of firms' organisations. Increasingly, it can be noticed that firms tend to be more environmentally orientated than it is required by legal regulations. The reason for this is that firms obtain a competitive advantage and in some cases it represents a sales argument. Within some industries the environmental aspect is an essential standard of product-promotion.

Firms, which can be categorised as proactive are firms which on the one hand have a strongly committed leader or on the other hand a strongly committed management board with the appropriate supportive organisation. Interestingly the term 'organisational responsibility' grew out of the ecological requirement.

Generally speaking – the experience shows - that firms with complex and rigid structures, having lengthy decision processes, do not belong to those firms which make the running for others. Decisions which have to pass several hierarchies mainly fail because of the various preventive argumentation. Nowadays, firms need to speed up the reaction-, realisation- and thus decision time – only to be able to comply to upcoming regulations. Increasingly, firms recognise that employees are the best capital a firm has. Firms need to make more use of their capabilities and abilities, especially of their employees. Therefore, firms increasingly foster creativity, teamwork, innovation and the taking over of responsibility. However, a further interesting issue is that the experience shows that especially employees' proposals of employees which were not submitted anonymously were not successful. It can be assumed that this is due to the fact that such proposals stuck in the hierarchy – departmental competition -. It can be argued that an appropriate organisation is needed. A further reason why some firms are slower than others, is because managers make no decision for fear of losing a position, business status or even the job due to making a wrong decision. This indicates that the personal character of a manager has an influence on the management style.