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Sustainable Digital Neighbourhoods: A Case Study of People, Place and Technology under the Rural Village Condition

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SUSTAINABLE DIGITAL NEIGHBOURHOODS: A CASE STUDY OF PEOPLE, PLACE AND TECHNOLOGY UNDER THE RURAL VILLAGE CONDITION

by

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AUTHOR'S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

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An advanced programme of study was undertaken, which included training in the social network analysis method. Additionally, teacher training carried out at the University of Plymouth has led to Associate Fellowship of the Higher Education Academy.

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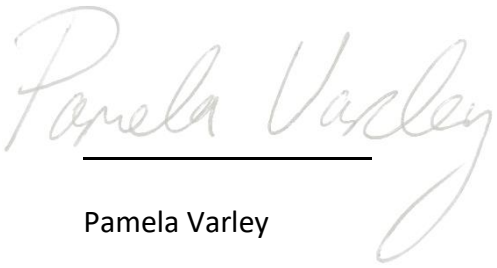
Signed 

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ABSTRACT

This research seeks to develop an advanced understanding of the interplay between broadband use, social interaction and the place in which people live. Fieldwork has involved working in an embedded manner within a central case study neighbourhood, a rural Cornish village – St Breward. A wide range of methods has been employed, including social network analysis, survey research, qualitative interviewing and a diary study. Results have painted a picture of how a community is structured, how it operates (both socially and spatially), and how technology infuses with this. The research presented here illustrates the unique nature of social operations within a rural village; the vital roles and space governance carried out by gatekeepers operating within that rural place; and the different ways in which residents embrace and imagine technology. The reliance of a rural community on the 'local' and upon more traditional means of communication is evident at every juncture, posing an interesting question as to how superfast broadband can be made applicable in the local rural setting, harnessed as a community asset and, hence, used for positive social transformation.

The distinctive symbiosis of factors at play within rural zones warrants attention. Research presented here contributes to the knowledge gap on how to design for rural life, advocating an approach in which those responsible for technology deployment consider the nature of place when doing so, being sensitive to how rural communities are socially organized, and the ways in which they use and imagine technology, potentially leading to a wealth of both community and industry benefits.

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CHAPTER 1: INTRODUCTION

1.1 Background

With fervent calls for ubiquitous high-speed broadband coming from a whole host of authorities in recent years, the race is on to provide access to consumers and businesses across the globe. The United Nations has declared internet access a basic human right, stating that 'facilitating access to the Internet for all individuals, with as little restriction to online content as possible, should be a priority for all States' (United Nations, 2011: 4). Countries such as Estonia and Finland have declared broadband access a legal right for all their citizens. Likewise, the International Telecommunications Union believe affordable broadband networks to be '…as critical to social and economic prosperity as networks like transport, water and power', stating that 'Broadband will serve as tomorrow's fountain of innovation' (Ibid). Rhetoric as to the benefits of broadband access is in plentiful supply. Broadband is so often described as one of the most important instruments at our disposal in the modern age, and as a prerequisite to the social and economic prosperity every nation seeks to acquire. The extent to which the availability of superfast broadband services can act as a great leveller, equalising opportunities of access to information for all, is much lauded. Here in the United Kingdom, the same sentiment has trickled through. The government aimed to transform the country's broadband infrastructure by 2015. Broadband Delivery UK (BDUK) managed the UK's 'Rural Broadband Programme', with a mission to provide superfast broadband access to at least 90% of UK premises, and an additional target to provide universal access to standard broadband of speed no less than 2Mbps. In addition, there was a 'Superfast Extension Programme', which aimed to further extend superfast broadband coverage to 95% of the UK. This 95% target was met by December of 2017, with government expectations now set at reaching 97% by 2020. Additionally, legislation

is now in place to 'create a new Universal Service Obligation giving every household and business the right to request a broadband connection of at least 10 Mbps, to ensure no-one is left behind (Department for Digital, Culture, Media and Sport, 2018h: 1). BT Openreach are also now, in 2018, running their 'Community Fibre Partnerships' scheme, aiming to work directly with communities suffering from a lack of connectivity, helping to connect them to fast fibre broadband using customised solutions. This scheme offers 'a gap funding approach to communities, leveraging investment from resident and business cash contributions along with external funding sources, such as vouchers and grants' (BT Openreach, 2018: 8). As time passes, the goalposts shift, and we see talk of alternative technologies for hard-to-reach zones, and the arrival of 'ultrafast' broadband, another step up from 'superfast' services. New and more ambitious targets come into place, such as '15 million premises to be connected to full fibre by 2025, with nationwide coverage by 2033' (Department for Digital, Culture, Media and Sport, 2018h: 1). There is a common theme running through all the policy documents and mission statements – one of 'coverage' and 'access.' But with the focus so firmly anchored in this idea of universal access and, hence, equality of access to information and opportunities for all, what do we know about how communities will respond once access has been duly granted, and where does the responsibility lie for ensuring that communities efficiently and responsibly seize these opportunities which they now have equal access to? Once broadband networks have been financed and deployed, what happens next? There is a great danger in any 'build it and they will come' mentality to broadband deployment. And, with the focus not just on the UK's many urban centres, but also now on its most isolated and rural corners, too, what should the difference in approach to the contrasting geographical regions be? Surely, there is a need to ensure

that any technology deployed is relevant to the community in which it is to be rooted, and applicable to the local context and culture of the place it aims to serve.

1.1.1 Gaps in Knowledge

A reliable broadband service has, until recently, been a somewhat elusive property within rural locales. Upgrades to technological infrastructure, and an increased focus on deployment programmes reaching hitherto under-served zones, are changing that condition, with services aiming to be universal and non-discriminatory in terms of place and population. Studies on the impact of these widespread upgrades are often centred on the technical needs of a population, or upon the fiscal and economic benefits they can afford said population. Additionally, research has tended to focus more so on cities and urban metropoles. Within the rural context, emphasis typically lies with the advantageous nature of teleworking and cottage industries, and the monetary investment benefits for a community; the prospect of living in rurality but continuing to operate under the technical conditions afforded by the city is oft lauded.

Research which focuses on information communication technologies (ICTs) in rural areas, and more specific than that – research which focuses on the social properties of these rural areas, is thin on the ground. As asserted by Firth and Mellor, 'While literature on broadband abounds, it is rarely directed at the impact of broadband on social and personal issues. Rather, that literature typically focuses on broadband's economic aspects, but with poor benefit identification and measure difficulties, the findings tend to be steeped in rhetoric' (2005: 223). This study takes an alternative standpoint, looking through the lens of community, and seeking to uncover how these ICTs align with people and place; the social and spatial implications, as opposed to the typical monetary and economic foci. It looks not at the geographical or fiscal properties of a rural place in

isolation, and considers not just the practical consequences of an infrastructural upgrade, but hones in on the social implications for a place-based community. The uniqueness of rural place does not lie solely in its distant and 'cut-off' geographical positioning, but also in how it is socially organised, and how it appropriates technology within its community social network relative to its urban counterparts. This study acknowledges these factors, and aims to get to the heart of what it means in reality when a rural community is faced with a technological step-change. It is the focus on the less-considered rural locale which makes this study different, and its examination of the community as a distinct social entity that imagines and utilises technology, as opposed to a passive community subject to an inevitable rollout of broadband services, which grants this research a unique perspective. This study focusses on the social aspect, personal relationships with place, and the rural imagining of technology; dynamics which, perhaps erroneously, those deploying technology are under no firm obligation to consider as they roll their services out across the rural countryside. With knowledge of these rural-specific social and spatial factors so lacking, there lies a clear gap in evidence on how to design ICT deployment strategies for rural life.

1.2 Context

Remote and rural communities are traditionally thought of as being excluded from full and active participation in economic and social life, due to both their tendency to be somewhat isolated from thriving urban centres and, oftentimes, their characteristic lack of infrastructure. The vision of the rural idyll as somewhere one can escape to, away from the buzz of urban life and the persistent ping of emails, is one that is cherished by many. A number of the UK's more remote corners have been suffering from a lack of reliable broadband access for many years now. As broadband was rolled out, the term 'notspot' was coined - referring to those pockets of the country which broadband had

hitherto failed to reach. To reside in a notspot was to be cut off from the latest technological advances, and to suffer with a dial-up modem whilst others more geographically privileged learned to enjoy ever-increasing bandwidth. Cornwall, the southernmost county of England, was one of these remote and rural locations. Until recently, many parts of Cornwall had poor, if any, internet access. This all changed, however, when plans to make Cornwall and the Isles of Scilly some of the best-connected places in the world were put into action. Superfast Cornwall, funded by the EU, BT and Cornwall Council, and managed by Cornwall Development Company, was born and, in 2011, a fibre-based superfast broadband rollout across Cornwall began. According to Superfast Cornwall, 'Fibre broadband is transforming the way people work and play; boosting the economy, enabling businesses to work more effectively and bringing online entertainment to life' (Superfast Cornwall, 2014). This programme ran contrary to the idea that urban centres ought to be the first locales to appropriate cutting edge technologies. Urban zones would tend to offer the most considerable economic returns for a fibre optic broadband network, owing to their density of population and business activity. The deployment puts Cornwall at the forefront, with the kind of broadband which many now feel is a prerequisite for sustained social and economic prosperity. Superfast Cornwall's 'Big Build' was due to run until 2015, and aimed to bring fibre optic broadband to 95% of homes and businesses in Cornwall and the Isles of Scilly. It was intended that the remaining 5% would also be privy to faster broadband speeds via alternative technologies, such as satellite. The company themselves described the scale of this infrastructural upgrade as unprecedented anywhere in Europe, and maintain that education, work and play will be transformed, encouraging innovation amongst Cornwall's businesses.

1.2.1 Research Problem

Whilst there is clearly much hype over superfast broadband's potential to change the lives of Cornwall's residents, little is actually known about the true social and spatial effects of such a technological transition. Having superfast broadband on your doorstep in a rural village setting is one thing; seizing upon it as a community asset, and harnessing it for the greater good, is quite another. This research is born out of a need to look beyond the hype and the rhetoric, and to put the focus back on people, community and rurality. Grimes has asserted that 'Technological determinism has given rise to false expectations, wastage of funds and increased scepticism about the real potential. There have been many examples of poorly thought out projects, designed more to suit the objectives of suppliers of equipment and services than of potential users' (2000: 20). It is this standpoint from which this thesis sets out – looking not at the deployment itself, nor at the coverage aspirations, but at the truths and realities on the ground, in the community where the technology is to be rooted. Only in knowing how a rural community uses technology, how technology is infused within their existing social networks, how they imagine technology, and what they want from technology can we advance the knowledge base on how to optimally implement ICTs in rural areas, in a way which makes them sustainable, and enhances the lives of rural residents in the longer term. In addressing the prospect of the sustainable digital neighbourhood, I refer to a neighbourhood in which the technology becomes more embedded, and the community appreciation for, and use of, technology is something which can be sustained – the meaningful and sustainable use of technology in the community setting, in a way which is both relevant and appropriate for the community, and works for the community in the longer term.

1.3 Motivation

Against a backdrop of Superfast Cornwall's ambitious upgrade, this research gets to the heart of a rural Cornish village community, seeking to uncover what this technological advancement actually means in reality for its residents. I speak of community in this sense as a place-based community, where residents identify with a physical locale and those people that reside within its geographical confines. This is a definition which encapsulates the notion of shared identity, by virtue of being and existing in a particular geographical place, and operating alongside its people, united by a sense of place and social co-existence. Of course, this does not necessarily imply that this co-existence is without conflict or social tensions; one can co-exist alongside fellow community members with shared identity in a way which is functional, but not necessarily totally harmonious or without strain.

This thesis looks beyond the rhetoric and hype surrounding superfast broadband's ability to transform the lives of Cornwall's residents, aiming instead to develop an advanced understanding of the interplay between broadband use, social interaction and the place in which people live, with a particular focus on the rural village condition. Furthermore, it seeks to uncover the conditions conducive to a community leveraging this newly acquired superfast broadband as an enabler for positive transformation, in order to make the transition meaningful for them and their village; going some way towards filling the knowledge gap on how to design for rural life. By positive transformation in this context, I refer to community change that is welcomed by said community, and brings about transition and progress which is relevant to them and their needs. It may come in the form of, for instance, the potential to enhance both local and more distant connections by digital means; the possibility for the community to operate on a higher digital level than previously via exposure to digital, and by embedding digital

in everyday local community practice; the linking of people, place and technology; the opening up of new possibilities for life, work and play that are appropriate to community needs; upskilling and the shifting of mind-sets in relation to the digital world; and the potential to unlock and foster further social capital within the village community population. The research seeks to add to the existing body of knowledge on this topic, much of which has focussed on the debate as to whether community is lost or saved with the advent of computer mediated communication, and has offered conflicting points of view on the community effects of increased ICT availability and use. Central to this research is a focus on 'place', and an exploration of how ICTs weave in amongst the social and spatial environments.

Grimes (2000: 20) has described how '…there is some evidence of a growing awareness of the need to give much more attention to the social dimension of the Information Society', and this is a key motivation of this study. Crucial to ascertaining how new technology might impact upon a community's social and spatial operating systems is discovering how that community currently functions – defining the composition and structure of its residents' social networks, and discovering how modes of technology are employed across them. Furthermore, identifying key social actors in rural places, and how those deploying technology ought to be engaging with the social and spatial makeup of a rural place are equally valuable in informing ICT deployment strategies.

1.3.1 Contribution to Knowledge

The infrastructure upgrade which took place in Cornwall provided a unique opportunity to undertake original and timely research on the relationship between neighbourhood, ICTs and social networking. Rural villages, which are relatively isolated and have been suffering from a lack of access to ICT services, are undergoing a great change. This

research gives an insight into the realities of this shift for communities, and serves to inform other localities in the future as the fibre broadband rollout continues, both nationally and internationally.

Gurstein (2007) advocates an 'effective use' as opposed to 'passive access' Community Informatics approach to end-user computing. So,

> …rather than a concern with responding to, for example, the 'Digital Divide' by extending opportunities for technology or Internet access, the issue is redefined as finding ways of using ICTs to respond to issues and requirements that are meaningful and significant in the daily lives of individual users within their communities (Ibid:34).

With take-up of superfast broadband progressing, the issue moves now beyond one of access to, instead, what the residents can do with this newly acquired service to make their own 'effective use' of it; not just allowing superfast broadband to drift in, becoming an invisible and, perhaps, unrealized community asset. This research moves beyond the aspirational impacts of new technology, looking at the more subtle ways in which technology can be blended into the everyday minutiae of rural life; seized upon, embedded and normalized in the processes and navigation of community social interactions and space utilizaton.

Additionally, research presented here shines a light on how a community functions, and the benefits which can be yielded through effective engagement with key social actors within that community. It highlights, for those deploying technology and aiming to successfully diffuse broadband technology in rural locales, the need to understand and engage with communities in order for services to be optimally adopted in rural places.

To summarise, this thesis contributes to the knowledge gap on how to design ICT deployment for rural life. It uncovers the ways in which a rural village operates socially,

and identifies how residents use technology in order to sustain their social ties. It advocates an approach in which those rolling out new technology consider the nature of place when doing so, being sensitive to how rural communities are socially organized, and the ways in which they use and imagine technology, potentially leading to a wealth of both community and industry benefits. In essence, it looks towards the ideal state of a sustainable digital neighbourhood – where the conditions are ripe for a viable digital village habitat, and the meaningful and sustainable community use of technology is a realistic prospect. Its point of difference is in its focus on the rural, and within that a focus on the social and spatial aspects of a rural village community, through the application of novel methods in the rural setting.

1.3.2 Summary of Aims and Objectives

This research sets out to decode the rural village, getting to the heart of the ways in which it is socially organised, the key actors therein, and the means by which its residents make use of technology. It seeks to uncover how rural residents imagine technology, how they might be affected by the rollout of superfast broadband, and what the optimum conditions for them seizing upon superfast broadband as a community asset might be.

1.3.3 Research Questions

More precisely, the research questions that this thesis addresses are set out below:

1) How does a rural village community appropriate technology, and how might it be affected by the rollout of superfast broadband in its locale?

2) What are the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation?

1.4 Thesis Structure

This thesis begins with a thorough examination of literature deemed relevant to the study. The initial *Theoretical Framework* chapter sets the scene for the case study research, exploring a wide range of key themes such as technological determinism; community displacement; the specificities of place; the rural village condition; community social networks; sustainable community technology; and social responsibility in IT deployment. A summary of the main issues emerging from a review of the literature follows, before moving to address the methods which have been carefully selected in order to address the research problem identified.

The *Research Methods* chapter describes why the chosen methods were selected to address the formulated research questions, and what made them applicable to the planned investigation in a rural Cornish village. Next comes an outline of the triangulation of methods used for this research, as well as a discussion around the decision to adopt a case study approach. The various challenges associated with this case study method are outlined – applying case study site selection criteria; choosing a final site; gaining access to a neighbourhood; and becoming embedded in village life. This chapter then moves to discuss in detail the approach taken with each research method employed – the survey; the qualitative interviews; the diary study; and, crucially, the social network analysis. Outlines of the sampling framework, any supplementary research conducted, and ethical considerations conclude this chapter.

With the theoretical framework and methodological approach established, chapter 4 offers some background on the case study village that was selected, looking particularly at residents' relationship with the village; their levels of contentment and perceived isolation; and a description of the superfast rollout as it applies to the village.

Chapters 5, 6 and 7 are the core results chapters of the thesis. Chapter 5 focuses on rural village social networking, looking at neighbourly interaction; the geographical reach of residents' social ties; the many features of the 1,618 relationships identified; and the emergent village typology – the village gatekeeper – one who possesses a great deal of local influence and is crucial in progress towards the development of a sustainable digital neighbourhood.

Next is chapter 6, which examines the meaning of technology in the rural village, looking at how technology infuses with villagers' personal social networks; the clear preference identified for face-to-face contact in order to sustain social ties; the ways in which villagers imagine technology, a section where the interviewees voice really comes to life; and, finally, the attitudes of local residents towards the rollout of superfast broadband services in their locale.

The final results chapter, chapter 7, addresses the importance of the relationship between rural village spaces and technology. It showcases digital inclusion efforts in the case study village; highlights how villagers appropriated technology and made it their own; and discusses the contribution of the village community hub in the creation of a sustainable digital village habitat, where community technology use can become embedded in community practice, and technology can be used in a meaningful and sustainable way in the longer term.

Chapter 8 offers a final discussion of results and some concluding thoughts. The need to account for the specificities of place, people and technology use in rural zones is asserted, and the contribution to knowledge on how to design for rural life is discussed. This concluding chapter advocates a symbiotic approach to the deployment of technology, and a model for this is presented therein. Final reflections on poilcy

implications; implications for those deploying technology in rural locales; any limitations; and potential future research follow, before a summary of this research's contribution to knowledge draws the thesis to a close.

CHAPTER 2: THEORETICAL FRAMEWORK

2.1 The Technophobe/ Technophile Debate

With any new technological innovation comes much debate regarding the transformative effects it may give rise to. As described by Pellegrino, debates of this kind often result in 'technophobe/ technophile perspectives, technological visions where technology is either demonised for its possible adverse effects, or a panacea to be welcomed at any cost, because of its enormous benefits' (2011: 51). McPherson et al. caution that 'once we see the techno-determinist and modernist assumptions at the core of many visions, visions of rapid development precipitated though ICTs might not just fail to achieve their goals (even on their own terms), they could actively undermine those very efforts in a world of scarce resources' (2006: 17). The advent of broadband and, more recently, superfast broadband has further ignited this debate, with technological determinists making grandiose promises, and those on the other side of the fence apprehensive about the future of community. Many fear that the infiltration of the online world into everyday life will lead to a mass of isolated and lonely individuals, disconnected from those around them in the physical world, with the fabric of community life being compromised as a consequence. Putnam writes of a decline in social capital, describing how interactions with one's social connections are increasingly being enacted behind closed doors within private spaces (2000). He describes how group affiliations have lessened, time spent with family is on the decrease, and social interaction with neighbours is waning (Ibid). Lofland, too, laments the loss of time spent within the public and parochial realms, as modern technologies have allowed for yet more activities to be carried out solo from the comfort of one's own home (1998). The notion that community will be lost, owing to increased online activity, is further posited by Nie and Erbring, who state that the extent to which we have social contact with

friends and family is inversely proportional to internet use (2002). They assert that 'the more time people spend using the Internet, the more they lose contact with their social environment' (Ibid: 275). Similarly, McPherson et al. have reported a significant downward trend in the average number of close confidants whom Americans discuss important matters with over the years (2006). Haythornthwaite summarised much of this earlier mentality, stating that 'Early work on computer-mediated communication (CMC) suggested that shifting interactions from rich face-to-face venues to lean, text-based media would create an impoverished communication environment – fraught with misunderstandings, flaming, and antisocial behavior' (2005: 126). The notion that, in an age of information and enhanced online facilities, we are socialising less and retreating from community social structures, is indeed one which gained prominence through research in the 90s and 2000s. Haythornthwaite describes the research focus of the late nineties and early noughties, highlighting the shift to blaming the internet for 'disconnecting people from local, family interaction, drawing them into online relationships with people of unknown and unconfirmed identity' (Ibid).

Others, coming from a more utopian perspective, write of the 'death of distance' (Cairncross, 2001), focussing on how the ways in which we can conduct our personal and business lives, owing to ICTs, are changing. Technophiles describe how we can, with the benefit of ICTs, more readily connect with people further afield, accessing entirely new webs of social ties via new forms of community – communities in the virtual world (Rheingold, 1993).

Hampton has reflected on this utopian/ dystopian debate around ICTs and community being lost or saved. He asserts that:

> Pundits base their analysis on location, looking into cyberspace and hailing the creation of a whole new form of community, the 'virtual community', or looking at traditional neighborhoods and family groups and predicting their ultimate demise. Instead of examining the effects of computer-mediated communication on the network of people's social relations, communities are again treated as groups, to be lost or saved (2001: 20).

This is a reflection which has informed the route taken by this study – to ensure the network of people's social relations are given due consideration, in order to ascertain how rural community members utilise ICTs in their everyday social functioning, and how they might appropriate the capabilities of superfast broadband services in order to enrich this process.

Within the rural context, much of the discourse has centred around the supposed advantageous nature of teleworking afforded by enhanced rural broadband networks, as well as the potential for cottage industries to yield economic benefits. However, as asserted by Grimes:

> Teleworking, which has been widely hyped as providing the greatest scope to the periphery for exploiting ICTs, has evolved mainly as an urban or suburban form of decentralisation. Only a small minority of highly skilled professionals, possessing well-established market connections, has been in a position to sustain economic activity in remote areas (2000: 20).

So whilst the benefits of increased connectivity have long since been touted, the reality on the ground may be somewhat different. And the extent to which we *truly* know what the impact of such advances has been is questionable. There is a lack of agreement in the literature as to the outcomes for rural communities. BT Openreach themselves concede that 'Evidence about the scale of benefits is still emerging. We cannot be sure how people and businesses will use fibre broadband in years to come or what new technologies and applications will emerge' (2018: 3). The reality is, as Friederici et al. assert, '…there remains a lack of academic consensus about the actual impacts that

digital connectivity (i.e. the Internet) will have on economic development', and there are variegated effects depending on the particular context (e.g., urban versus rural settings) (2017: 1-4). The same can be said of other forms of development besides economic growth, such as that within the social realm, which has received considerably less attention than the fiscal domain. Much of the research in the social arena, often from the perspective of the stakeholder, has come from a social return on investment standpoint, seeking to attach monetary value to social outcomes arising from ICT interventions (BT, 2014a; BT, 2014b; BT Openreach, 2018). Factors typically considered include reduced isolation and community engagement; access to employment through job search; confidence; time saving; hobbies and reduced boredom; and financial savings. Additionally, publications from the Department for Digital, Culture, Media and Sport have presented analysis carried out by Simetrica which attempts to assign a monetary value to the wellbeing uplift provided by superfast broadband services, stating that 'the provision of subsidised superfast broadband is associated with a wellbeing uplift per year for the average targeted premise' (Department for Digital, Culture, Media and Sport, 2018d: 7). A value of £46 was arrived at (following adjustment for take-up), but with the caveat that 'it has not been possible to be certain that superfast broadband subsidy is responsible for this wellbeing increase' listed in the limitations, again highlighting issues around the measurement of social return on investment with respect to technology (Ibid: 5). It could be said that with the focus consistently on financial return, even when situated beneath the digital inclusion umbrella, the lived community effects on the ground and, indeed, the community potential, are at risk of being overlooked, or at least not being given due consideration.

McPherson et al. posit the possibility that many technologically deterministic, technophile visions and promises are potentially 'hugely overblown', and highlight how

'the productive power of these discourses provides a fertile ground for the argumentation of actors seeking to set up connectivity infrastructure, run Internet-related development projects, or sell equipment and services connected to the agenda' (2006: 17). It follows that broad brush claims as to the great affordances of superfast broadband services should be received with caution; that there may be a particular industry agenda attached to such claims.

An examination of the literature shows many different standpoints with competing views, and a lack of consensus as to the real effects of technological transition, particularly within the rural domain, a geographical dimension less scrutinised in the field of broadband studies than the urban metropoles and suburban zones.

2.2 An Alternative Viewpoint

An alternative body of research has moved beyond the rhetoric, calling for realism about technology's potential for development, understanding that it is a more complex affair, and looking to dispel the theory that technology brings about the effect of community displacement. Haythornthwaite has suggested that, perhaps, the binary, dichotomous analysis of the effects of online communication, a debate which puts the technophiles in direct opposition to the technophobes, is restrictive, noting that 'there is little that integrates these effects to explain how such connectivity can be both disengaging and engaging, disruptive of relationships yet also integrative across populations' (2005: 126). Etzioni and Etzioni suggest that 'both face-to-face and computer mediated communication systems have strengths and weaknesses of their own, and that their proper combination promises to meet more of the prerequisites of community than either of them could separately' (1999: 247). In a similar vein, Turkle poignantly outlines how one realm can supplement and enhance the other:

> Having literally written our on-line worlds into existence, we can use the communities we build inside our machines to improve the ones outside of them. Like the anthropologist returning home from a foreign culture, the voyager in virtuality can return to the real world better able to understand what about it is arbitrary and can be changed (1996: 57).

Crang (2007) explores the notion that mediated networks can in fact sustain neighbourhoods and not oppose them; neighbourhoods can harness new media to their own individual local agendas. Hampton and Wellman's Netville study actually showed that wired residents 'neighboured' more extensively and intensively than their non-wired counterparts (2003). The online realm is no longer to be seen as separate or 'other', but as 'part of the place we find for ourselves in the world' (Crampton, 2003: 83). Similarly, Hampton later posited this alternative hypothesis:

> New ICTs may not create a 'space of flows' that is separate from the 'space of places.' ICTs may be increasingly embedded into all aspects of everyday life and existing spheres of interaction. In the case of neighborhoods, the integration of ICTs into everyday life could reverse the trend of privatization within the parochial realm (2007: 715-716).

In a parallel vein, Amichai-Hamburger and Hayat, using data from the World Internet Project, and addressing the finding that we now have less people with whom we discuss important matters with, found that 'rather than being the cause of this phenomenon, Internet usage may actually lead to a reversal of the situation, i.e. more social interaction' (2011: 588). They put forward the finding that 'heavy Internet users have larger and more diverse social networks, and that they interact with the members of those networks more frequently' (Ibid).

Rainie and Wellman (2012: 170) focus on the possibilities for ICTs to bridge time and space barriers, 'weakening the boundaries between public and private life spaces.' They put forward the view that ICTs are not 'isolated-or isolating-systems' (Ibid: 6). However,

Wellman's (2001a) discussion of less bounded community structures and a transition to what he termed 'networked individualism' has been criticised by Hampton et al. (2011) for assuming 'an 'online and global' and 'offline and local' dichotomy.' Hampton (Ibid) argues that ICTs support diverse networks, not because communities are less bounded by space than before, but through participation in local, parochial settings. Furthermore, Hampton (2003) is critical of a tendency in existing research to focus too heavily on strong network ties, neglecting to pay sufficient attention to the important role played by weak network ties.

This alternative viewpoint, which seeks to shift the attention towards the embedding of ICTs into the everyday functioning of community life, and harnessing them in order to enable community participation; in essence – normalising ICT related behaviours, strikes a chord with the research presented in this thesis. The everyday minutiae of rural life and the social relationships one maintains in rural life, both within one's own locale and beyond, are where we see the extent of technology's infiltration, and where its potential beneficial usages come to light. Building on this standpoint, this research will attempt to unfurl this reality within the context of the rural village community.

2.3 The Specificities of Place

The impact of a technological step-change on a locality will depend on many things, not least the state of digital readiness of the place for advancement. Attitudes and skill levels of residents; willingness to engage; and prior exposure and experience all have a role to play. As suggested by Komito (2004), it is difficult to predict the impact of technologies. 'Their impact is not uniform, since the same technologies have different impacts on different societies' (Ibid: 48). There are many factors at play and societies will determine the function and role of technologies in different ways (Ibid: 48). Similarly,

Haythornthwaite writes how 'Internet impacts are not singular, but differ by the nature of existing relations. Such impacts have important implications for planning and policy relating to choices regarding communication structures and information dissemination, and future uses of the Internet' (2005: 142). This sentiment is also echoed by Mossberger et al. – 'Availability of broadband varies by place, but the socioeconomic and demographic characteristics of communities also affect patterns of adoption once the technology is available' (2013: 37). Similarly, Wallace et al. describe how communities go through diverse evolutionary processes before arriving at their current levels of skill and digital readiness – 'Indeed, it might be difficult to find a community that is not touched by digital communications but different communities would have co-evolved with information technology in different ways' (2017: 433). This digital history and unique journey of a place is just one characteristic of many which establish the points of difference of that place; the rural locale has traversed and negotiated a different digital path to that of urban zones and, consequently, warrants viewing through a different lens with respect to technology deployment and digital inclusion efforts.

The ways in which people may choose to connect and interact with others are changing. The communication options afforded by superfast broadband, and the opportunities it presents for ICTs to be utilised as community organising tools are significant. What is lacking is knowledge on how to harness this potential in order to steer real, sustainable transformation within rural communities. Broadband is not a technological 'quick fix' to solve social problems, needing instead to be tied together appropriately with the necessary place-appropriate interventions. One must consider the variety of digital behaviour groups present in any community: those who are digitally engaged, perhaps even digitally determined; and those who are digitally disengaged, potentially due to

digital constraints or a digitally dismissive attitude. It is not simply a matter of access but of engagement, too, which requires some combination of motivation, skill and confidence. Together with all of these factors lies the need to consider the specificities of 'place'; in this instance – the rural village condition. As Park has asserted, when implementing digital inclusion strategies, one must consider both supply and demand factors. It is not just the infrastructure (supply), but also the demand factors, such as education levels and socio-demographics, all of which vary according to place (2017). It follows that the specific demand factors prevalent in a rural place should be guiding the ICT deployment strategy in order for it to be effectual and, crucially, sustainably effectual in the longer term. Whitacre & Mills have also conveyed that '…policies which solely promote infrastructure in rural areas fail to address the dominant factors in the emerging high-speed digital divide' (2010: 1902). They also assert that '…efforts to close the emerging rural-urban divide in high-speed access must recognize that rural-urban income and education gaps are important underlying factors in the divide, rather than focussing solely on initiatives for Digital Communication Technology infrastructure investments in rural areas' (Ibid). As described by Mitchell (2011), even with access provided, and economic barriers having been overcome, members of low-income communities still may not make much use of that access. 'If important usage is to develop, community members must be motivated – in other words, they must feel that it is worth their time and effort – and they must have the necessary skills' (Ibid: 161). Furthermore, 'we should not assume that the motivating factors at work in more-affluent and better-educated communities will have the same effect in low-income communities…' (Ibid: 161).

In reference to their East Yorkers study, Mok et al. (2010) have written about the use of email and how, they believe, it is something which does not vary according to distance.

They state that ‘E-mail contact is insensitive to distance. It is as frequent at 500 miles as at 5 and 50 miles. When relationships are very distant —transoceanic— e-mail is almost the only medium the East Yorkers use for contact, as Internet phone services such as Skype had not become widely known’ (2010: 2778). The extent to which assertions such as these can be said to hold true of all place variations is unclear, and this is something which will be explored within the context of the rural village, to ascertain if email is in use amongst rural villagers to this extent, and if rural villagers’ email use is, in fact, insensitive to distance. The specificities of rural place may not fit this technologically advanced mould described by Mok et al.

Salemink et al. (2017) discuss how research sits either in the ‘connectivity’ camp or the ‘inclusion’ camp, and highlight the issue of how generic policies in this field have a tendency to neglect the specific local needs of places. ‘Future research should therefore focus on specific places and communities - combining both connectivity and inclusion issues - in order to inform ‘customized policies’ for poorly connected and digitally excluded rural communities’ (Ibid: 360). Salemink et al. call for a ‘community-based approach’ for the development of their customized policies, with government interventions as required by individual places (Ibid: 368). But to do this effectively calls for an examination and understanding of place, and scrutiny of the factors which make a place different and, therefore, deserving of alternative treatment in the deployment of technology and digital inclusion strategies.

2.4 The Rural Village Condition

Gilbert et al. describe a policy which calls for ‘Internet technology to provide a means of communication that would make rural places functionally equivalent to urban ones and so promote decentralized economic production to sustain them’ (2010: 1384). And this

has largely been the policy focus to date – one of ensuring that rural places 'catch up' with their urban counterparts; raising their ICT quality threshold to be on a par with urban metropoles, supposedly making them functionally equivalent. Indeed, there is justification for this focus on access, given that, across Europe, rural households are in fact lagging behind in terms of access to superfast services in the home. Figure 1 below, using data from IHS and Point Topic (presented in European Network for Rural Development, 2018: 33) shows this variance across the continent.

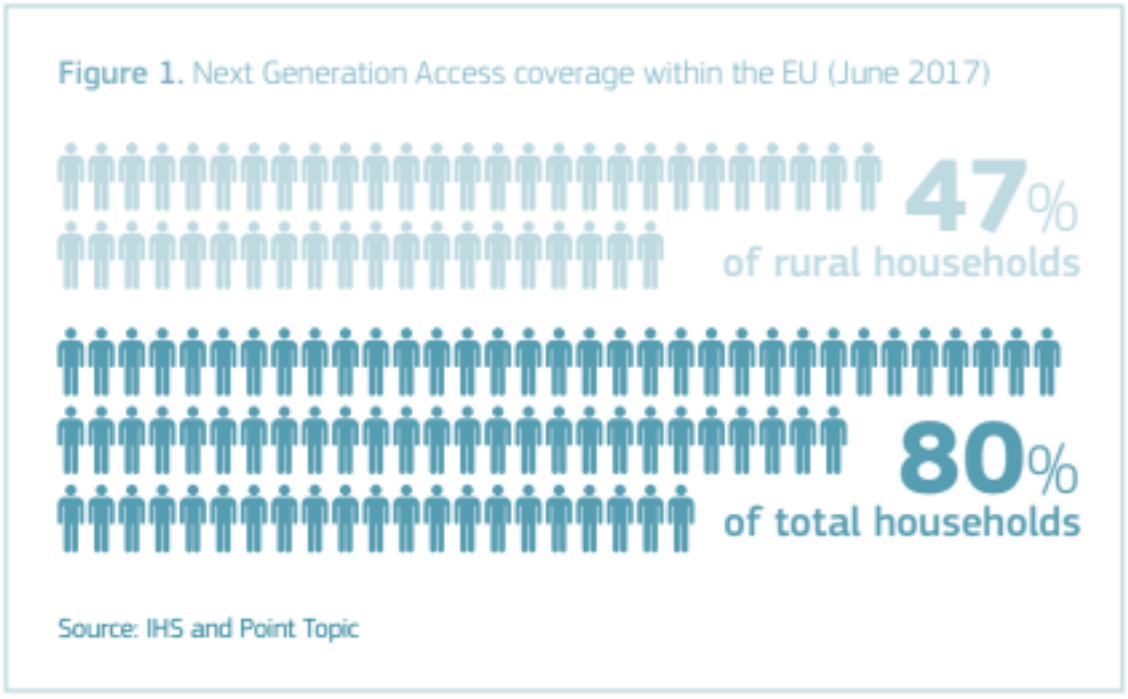


Figure 1: Next Generation Access in Rural Households versus Total Households

Gilbert et al. also describe how, over the years, history has made it clear that rural communities possess a unique set of technological needs (2010). 'Yet little is known about how rural communities use modern technologies, which therefore results in a collective lack knowledge about how to design for rural life' (Ibid: 1,367). It follows, then, that a remote and rural village in Cornwall may respond entirely differently to the arrival of superfast broadband than, say, a regional town, or a suburban residential zone. The impact of technological transition on a Cornish village may be incongruous with the

impact felt elsewhere. Hence, what is required to ensure the optimum and meaningful use of such a technology by village residents, and to foster the creation of a sustainable digital neighbourhood, is potentially multi-level and complex. As Correa and Pavez have asserted, 'remote rural communities face specific characteristics that need to be taken into account when thinking about digital inclusion policies' (2016: 259).

Writing on the specifics of rural populations, Huggins and Izushi (2002) describe how the ICT deployment approach in such a locale faces a number of additional barriers compared with the urban setting. Initiatives which seek to enable the rural population to discover technology, learn of its uses, and also discern how to make it applicable to their own rural existence, provide a means by which such challenges can be overcome.

> The locational conditions, together with the smaller size and the sectoral distributions of firms, not only hampers the development of an industrial milieu, but also dampens the willingness of firms to invest in training. Fewer opportunities for using ICTs at home and at work, and a weak milieu for ICT learning, reinforce each other particularly in deprived, low-income and low economic participation rural communities. In view of this, the success of ICT initiatives depends heavily on how to stop this vicious cycle (Ibid: 14-15).

The wide range of possibilities that new technology can afford rural villages is well documented. However, this is typically posited as a hypothetical, 'ideal world' scenario, rather than in real world terms. The OECD's recent conference highlighted ten key drivers of rural change, making mention of technology's role in education delivery; the advantages of virtual medical services; reliable digital connectivity for rural dwellers and businesses; and the benefits of complementary technologies such as cloud computing for productivity and service delivery (see Figure 2 overleaf). But we need to focus not just on the availability of these modern ICT offerings, nor solely on the possibilities they can potentially afford, but also on the degree to which they are applicable and desirable to the rural communities themselves, and, assuming they are, how they may be best

introduced to, and integrated into, those communities. It is unclear what needs to happen on the ground within rural communities in order for advances such as these to be understood, embraced and actively utilised to improve the functioning of rural life.

Figure 2: OECD's 10 Key Drivers of Rural Change, from 2018's 11th OECD Rural Development Conference

Also writing on the applicability of ICTs to the lives of the people they are intended to serve, Selwyn noted how many people he studied were content to survive and thrive without them, and that this is unlikely to change until such a time as they feel a 'need'

or desire to engage; until they can make sense of how ICTS are relevant to their existence, and how they can serve their needs and motivations.

> Whereas governments are keen to react in policy terms to the economic notion of the information age, its relevance to the day-to-day lives of individual citizens often appears to be more tenuous. Thus, the underlying premise of the digital divide debate – i.e. the perceived 'need' for all citizens to engage with ICTs in order to survive and thrive in the current information age – could therefore be considered erroneous in light of the many people in our study who were surviving (and often thriving) without it. Until that need arises it is unlikely that the patterns of non-use highlighted in this paper will alter (Selwyn, 2006: 289-290).

The European network for Rural Development assert that 'it has become increasingly clear that rural areas have been lagging behind in implementing the new, mainly digital technologies' (2018: 5). Their response to this is to push for a 'Smart Village' approach, which they believe to be the best way to mitigate this problem, as well as being a sustainable solution. Smart villages can be understood as 'communities that refuse to simply wait for change to happen to them. Smart villages are made up of rural people who take the initiative to explore practical solutions to the underlying challenges they face and to seize new opportunities' (Ibid: 6). Examples of this include the use of new digital technologies by villages. But the key to the success of this approach, is the creation of an 'enabling environment', in which a smart village can emerge (Ibid). The European Commission offer the following pragmatic definition of what a smart village is:

> [Smart villages are] …rural areas and communities which build on their existing strengths and assets as well as on developing new opportunities, [where] …traditional and new networks and services are enhanced by means of digital, telecommunication technologies, innovations and the better use of knowledge, for the benefit of inhabitants (2017: 3).

Gurstein has considered the issue of access and the need for effective use strategies, concluding the following:

> The key element in all of this is not 'access' either to infrastructure or end user terminals (bridging the hardware 'divide'). Rather what is significant is having access and then with that access having the knowledge, skills, and supportive organizational and social structures to make effective use of that access and that e-technology to enable social and community objectives (2003).

These particular social and community objectives which Gurstein alludes to are particularly relevant when considering the rural village condition, as the technological aspirations of the rural community, and the ways in which they wish to embrace technology in order to meet their own unique objectives may be markedly different from their urban counterparts. Only through knowing how a rural place utilises and imagines technology can one then go on to identify what provisions, beyond simple access, need to be made, and what measures need to be put in place so that they may harness the particular technology in order to meet the needs of the wider community.

As asserted by Carroll, 'The physical place evokes the community that inhabits it…' (2012: 197). The rural Cornish village represents a place where, for many of its residents, the 'perpetual connectedness' described by Rainie and Wellman (2012) is not yet a reality. The rural village is an entirely different proposition to the urban centre; it is a place where village footpaths, the bench outside the local village shop, and residents' front gardens are realized as Oldenberg's 'third places' (1991) – arguably, for a village, more crucial sites of knowledge exchange and social interaction than the more traditionally recognized café or pub. These village sites where locals habitually stop and chat, make plans, and exchange news and tales of village life operate seamlessly alongside more formal village public spaces – the chapel, the village hall, and so on. Together, these places set the scene where village life can unfold. But it is not just social

processes which play out differently in rural communities; technology, too, is embraced and used in alternate ways by those who reside within a rural locale. And this context is crucial to the understanding of rural zones and how they should be treated with regards to ICTs and digital inclusion efforts. Correa and Pavez' study of rural communities showed how 'context has molded not only people's needs and values but also their personality and attitudes toward new situations and developments, technology among them' (2016: 259).

Baker et al. highlight the 'individual and structural issues that must be addressed to enable all citizens to participate fully in the network society' (2017: 1291). They explore how it is not just the barrier of access, but also one of a lack of prior exposure to ICTs over the course of life. This is something of particular relevance to rural zones, where it is often the case that residents have had considerably less exposure to high-technology over their life course. To go about one's life shielded from the all-encompassing technology one is confronted with in the urban setting may result in different attitudes towards, and imaginings of, technology in general. Ramirez asserts that 'Rural and remote communities tend to be complex, dynamic, and subject to multiple policies and influences, often beyond the comprehension of urban-based policymakers' (2007: 89). This notion is one which informed a sensitivity in approach to this PhD – the knowledge that conditions in a rural place may elicit the need for tailored policies and interventions which are mindful of, and maintain sensitivity towards, the complexities and dynamism of a rural place-based community.

Whitacre has described a feature specific to the rural village condition which presents a number of challenges. This is the double-whammy which he describes as a combination of supply- and demand-side disadvantages; rural communities are less likely to receive

the technological infrastructure in the first place, but also less likely to adopt the new technology once it becomes available (2010). Whitacre summarises as follows:

> Rural communities suffer from supply- and demand-side disadvantages when dealing with Internet access. Telecommunications companies are less likely to provide such communities with needed infrastructure because of their lower population densities; these communities also tend to have lower levels of factors known to influence the access decision, such as education and income' (Ibid: 1283).

Whitacre further highlights the need to be mindful of rurality, whilst considering both the ICT history and the context of the rural place, as well as the future ICT aspirations. 'Future policies to promote broadband growth in rural locations should take into consideration the rurality of the area in question, the diffusion history of nearby infrastructure, and how future demand can be stimulated, with an understanding of its evolution to date' (Ibid: 1299). Using the context and the culture of the rural place in order to inform policies aiming to promote growth are seen as key to success. Again, these assertions, and Whitacre's discussion of the 'access decision', made clear, prior to investigations in the case study village, that the specific features and ICT evolution of the rural village condition would warrant focus.

Warren also focuses on the need to consider rural places as different, cautioning how '…remedies for digital exclusion which rely on provision in specific locations are likely to face additional difficulties in rural areas', also noting 'the tendency of social exclusion to have a different character in rural areas to that in urban areas, making it less susceptible to remedies which rely on peer-to-peer support within disadvantaged place-communities' (2007: 374-375). Clearly, these characteristics which make rural place different warrant attention and consideration by those in the policy sphere so that rural ICT interventions may be tailored accordingly. Whitacre calls for policymakers to learn

from wider population efforts and target new measures in rural zones effectively and at the appropriate time in the life course of ICT deployment, when the knowledge around broadband has reached a sufficient level amongst those who it is hoped will avail of it, suggesting that 'policies to promote infrastructure in rural areas are most effective once general knowledge about the benefits of broadband access has already diffused to a more general population' (2010: 1299).

Tookey et al. (2006) have also discussed the unique nature of the rural village, highlighting how in rural Scotland, despite efforts to encourage broadband diffusion, broadband availability does not automatically lead to broadband adoption. Rural broadband adoption has '…lagged behind availability in part because advertisement campaigns designed to raise awareness have been curtailed at the point when availability has been achieved', and 'national initiatives such as those designed to raise awareness of broadband are not perfectly aligned with initiatives that are solely focused on rural and remote Scotland' (Ibid: 493). Considering how widespread uptake can take longer to be realised in rural locales, Tookey et al. suggest that 'rather than scaling down promotional activities the various regional development agencies should in fact have maintained their efforts so that widespread availability is translated into widespread uptake' (Ibid). Also writing on rural Scotland, Howick and Whalley believe that the greatest impact in terms of rural broadband adoption could be realised if 'future policy initiatives target those people who show no interest in adopting broadband' (2008: 1299). Howick and Whalley again advocate a policy approach where initiatives which focus on broadband adoption continue beyond the point of initial switch on and availability (2008). Their vision is one where there is as much focus on adoption as there is on availability, with appropriate policy initiatives designed and implemented to address the drivers of broadband adoption in rural locales (Ibid).

Correa and Pavez (2016) have explored the digital inclusion challenges faced by those in isolated rural areas, illustrating how the different experiences gleaned by residents over the life course, and the specific differences particular to rural zones, all have an impact on the degree to which digital inclusion efforts are successful. They discuss three particular rural-specific elements relevant to the rural digital inclusion discourse. The first is the 'mentality' and 'internal traits' of the rural residents.

> ICTs represent a new and very demanding situation, this isolated mentality acted as a barrier to engagement with new technologies. They may recognize the value of the Internet for education, information, and business opportunities, but the fear of the foreign and of new situations is sometimes stronger. Thus, the motivations and needs to use the Internet have to be powerful to overcome internal traits that restrain their adoption and use (Ibid: 259).

The second element discussed by Correa and Pavez is that of the aged population typically present in rural areas, and the effects this has on ICT success and digital inclusion interventions. They summarise as follows:

> This isolated context also explains out-migration of young people and population aging. This is linked to the lower Internet adoption in the village … Thus, the lack of youth means that these communities are missing relevant technology socialization agents or networks that may help to include older generations in the digital environment (Ibid).

The final aspect of Correa and Pavez' analysis relates to the economic characteristics of the village itself. They assert how 'communities' needs suggest that the level of engagement with the Internet depends on the kind of occupations and economic requirements within the village' (Ibid).

> …the opportunities provided by the Internet have to become valuable in their everyday lives to deserve the amount of effort it requires to overcome the individual and contextual barriers.

Correa and Pavez' assertions further illustrate the extent to which rural villages are potentially different and in need of alternate tailored measures in their locales in order to successfully foster interest in technology and, consequently, bring about adoption. But without knowledge on how a rural village community presently avails of ICTs, how technology interweaves with day-to-day village life, and how it currently facilitates social relationships within the rural setting, one cannot possibly predict, nor indeed direct, how any new technology – in this instance, superfast broadband – will be embraced by rural residents, or how it could, potentially, further enhance the lives of rural residents in the longer term. By focussing particularly on the rural village condition, and working in an embedded manner within a rural village case study, this is a gap in knowledge which this thesis aims to inform.

2.5 Social Responsibility in Rural Technology Deployment

Related to the acceptance that rural communities are operationally different, and that the specificities of rural place warrant special consideration, is the notion that there lies some social responsibility with stakeholders in the deployment of rural technology. There exists the view that those formulating ICT policies, and also those who are responsible for deploying technology, should shoulder a degree of responsibility to consider the social and spatial implications of introducing new technologies into rural societies; be sensitive to the context and culture of rural deployment zones; be mindful of the consequences of their actions; and hold some accountability for the success and sustainability of rural ICT outcomes. Research calls for stakeholders to move beyond the idea of access and coverage, and to give other dimensions of ICT advancement due consideration.

> Strong empirical results that provide compelling evidence that economic and community development goals are realized through programs of computer and

> Internet access are lacking. If one broad social goal in the US over the past 10 years has been to facilitate access, the more important goal of ensuring that access is meaningful for communities and individuals has slid off the agenda (Strover et al., 2004: 467).

Pant and Hambly Odame state that 'stakeholders should understand that broadband technology is necessary, but alone not a panacea for regional and rural innovation' (2017: 448). It must be tied together with the necessary interventions, educational measures and digital inclusion efforts in order to ensure positive rural outcomes.

According to Baker et al., 'Internet service providers and telecommunication networks have a key role to play in ensuring disadvantaged people have affordable and reliable access to global information networks' (2017: 1305). But modern writing suggests that this role and associated responsibility must go further than simply providing access. The 'build it and they will come' mentality is not one which brings about meaningful and sustainable community ICT outcomes. Bukachi and Pakenham-Walsh (2007) assert that one must be mindful of the four Cs of ICT Deployment – Connectivity, Cost, Capacity and Culture, highlighting the many factors for consideration beyond mere access and connectivity. Cooper and Zmud's (1990) model of Technological Diffusion outlines five phases – initiation; adoption; adaptation; acceptance; and routinization and infusion, again showing that an ideal outcome scenario requires travelling through an evolutionary process, with the initiation stage of granting physical access just the first step along that journey. To foster an environment where adoption; adaptation; acceptance; and routinization and infusion come about is a more complex affair. Gurstein calls for a community informatics approach, and an expanded mandate to give community members 'the knowledge, skills, and supportive organizational and social structures to make effective use of that access and that e-technology to enable social and community objectives' (2003). To fulfil such a mandate would require consideration

of rural specificities and the elimination of a number of barriers within rural places, but with suitable supportive structures put in place by policy makers and telecommunications providers, it may be possible to foster an environment which successfully enables technology appreciation and adoption. Rose et al. (2011) discuss the potential benefits of community interventions in Kentucky, illustrating how targeted measures within rural areas can in fact raise take-up of broadband services, something which is of mutual benefit to both rural society and telecommunications providers. 'The incremental impact of community education efforts in the Kentucky county were all the more remarkable considering that they raised broadband penetration to well above the average for rural areas in that state as a whole, a statewide average that was considerably below that of the other two states included in the study' (Ibid: 97).

An additional body of literature calls for an information and communication technology for development (ICT4D) approach to policy and ICT deployment. 'ICT4D should answer the question of how, under what circumstances and for whom do ICTs, embedded in social practices and processes, lead to development?' (Zheng et al., 2018: 3). This more considered approach, which would contemplate desired rural community development outcomes, and the necessary precursory conditions required in rural places in order to bring about that development, posits a more all-encompassing and life course approach to ICT deployment, looking more so at the developmental outcomes and the normalizing of ICT behaviours in the longer term, than simply the technological step-change for communities.

Related is the call for the use of 'appropriate technology.' 'A central concept of Appropriate Technology is that the technology must match both the user and the need in complexity and scale' (Hazeltine, 1999: 3). Rather than a 'one size fits all' approach to

community technology, this movement calls for an assessment of the needs of community users, and the tailoring of ICT policy and digital inclusion efforts accordingly, in order to suit their modus operandi, and also their realistic ICT aspirations for the future.

In placing a greater focus on social responsibility, attention is shifted to the local interest of a rural community, an element which can get lost in amongst competing market and government interests. Salemink et al. discuss the difficulties surrounding communities reclaiming 'control over their digital futures', highlighting the struggle of 'negotiating between market and government interests, while simultaneously safeguarding local interests' (2016: 555). All three elements warrant focus in conjunction with one another for optimal digital outcomes in the rural village. To disregard the local interest is to neglect the fostering of a connected rural community; to hinder the community's ability to enable residents to appropriate technology; and to steer the rural locale away from the more permanent and desirable state of a sustainable digital neighbourhood, where community use of technology is meaningful to them and sustainable in the longer term.

Recognition of the need for those formulating policy, and those deploying technology, to maintain appropriate levels of social responsibility in their efforts is mounting. Pant and Hambly Odame assert that '…the long-term societal impacts of rural broadband infrastructure investments are questioned by policymakers. There are recurrent calls for more needs assessment and outcome analysis for digital development initiatives from a range of stakeholders…' (2017: 435). That interventions are appropriate and sustainable, as well as delivering positive outcomes beyond basic coverage, is increasingly being highlighted. Warren advocates the adoption of a 'complete socio-technical system' but notes that 'the reality tends to fall short, with most initiatives

focussing on specific dimensions of the digital divide' (2007: 374-388). A system which takes on these different areas of responsibility concurrently, encompassing all social, technological and community facets, and, in an informed manner, effectively designs for rural life, will be one which yields the most positive development outcomes. This thesis seeks to add to that body of knowledge on how, in reality, a rural community operates on a socio-technical level, and what a rural community needs in order to meet desirable community ICT outcomes.

2.6 Community Social Networks

McMillan and Chavis offer the following definition of a sense of community:

> Sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together (1986: 9).

As mentioned earlier, this thesis adopts the notion of a place-based community, where residents identify both with a physical locale and with those people that reside within its geographical confines. Not just a 'territorial and geographical' notion of community (Gusfield, 1975), but also a 'relational' one (Ibid); one which considers the social aspects of community in conjunction with the spatial aspects. It is a complex, lived structure tied up with physical bounds and interpersonal relationships. As Doheny-Farina has described, you cannot easily subscribe to it; 'It must be lived. It is entwined, contradictory and involves all senses' (1996: 37).

Community, in this thesis, is also considered as a psychological sense of community, described by Sarason (1974) as having the following prerequisites:

> The perception of similarity to others, and acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others, what one expects from them, the feeling that one is part of a larger dependable and stable structure (Ibid: 157).

Wellman discusses the 'community liberated' argument (a third offering alongside the community lost and community saved schools of thought), describing how 'primary ties are often dispersed among multiple, sparsely interconnected social networks', and that 'Obtaining resources through such a sparsely knit network is not a matter of obligations due a member of a solidarity' (1979: 1207). Again, this is an argument which may not hold true within the rural setting. Kinship and local social organising systems need due consideration when examining the rural setting, and an examination of community in the rural locale will likely not find it to be lost, saved, liberated or otherwise in a way that is comparable to an urban locale. This study addresses a rural village community, a place-based community situated within a neighbourhood, and whilst the view that 'place' loses relevance in the dawn of a networked age prevails with some scholars, within the rural Cornish context, the place-based neighbourhood lives on. Mahmoudi Farahani (2016: 360) writes how 'local communities still exist and form around the spatial configuration of neighbourhoods and spatial arrangements of neighbourhoods can still play a significant role in the formation of local communities and neighbourly interactions', and this is surely true of the context for examination in this thesis. Mahmoudi Farahani summarises as follows, highlighting the continued significance of locality in sociological examination:

> In the contemporary society, mobility of neighbourhood residents, media and virtual networking has caused the concept of community not to be bound to the boundaries of locality. Yet, still the existence of local communities, attachment to local communities, neighbouring patterns and feeling a sense of community can be considered valuable to the quality of life in neighbourhoods (Ibid: 373).

Nation et al. state that 'Although a significant portion of the population lives in rural areas, few studies (in comparison with urban neighborhoods) have focused on neighboring in rural communities' (2010: 584). Although, some have found that in rural

areas, the quality and frequency of social interaction is at a higher level than for urban dwellers (Lev-Wiesel, 2003). Lev-Wiesel found that 'a sense of belonging, solidarity, rootedness, and social ties were higher amongst residents of rural communities (kibbutz and village) than amongst residents in an urban centre' (Ibid: 332). This study will include a focus on neighbouring, based on the presupposition that it will be an important component of rural villagers' ego networks, and form a significant part of their local social relations.

The demographics of a community network in a rural place may also be considerably different, potentially making certain technological interventions less appropriate. An aged population often characteristic of rural place, for instance, may benefit from alternate approaches with respect to digital inclusion efforts. Baker et al. suggest that 'Programmes that encourage a holistic approach to building social connections that incorporate both real-world and online aspects are crucial if socially isolated older people are to transcend the limitations of space and place and participate fully in the network society' (2017: 1306). The demographics of rural place may necessitate a greater focus on interventions of this kind.

In terms of how community networks are socially structured, the generally accepted notion has been that people socialise more with people from outside their neighbourhood than within it. Wellman (1996) has described how 'Since local ties only make up a minority of people's active ties, network analysts have argued for decades that the neighborhood is not very important' (1996: 347). The view that local ties make up but a small subset of one's social network has prevailed over time. Wellman and Hampton have stated that 'Communities are clearly networks and not neatly organized into little neighborhood boxes. People usually have more friends outside their

neighborhood than within it: indeed, many people have more ties outside their metropolitan areas than within it' (1999: 649). The extent to which these deductions can be said to apply to the traditional rural village context is unclear, and something which can be deemed relevant when proposing to roll out new technology and make it applicable to the local rural setting. The way in which the target rural zone is socially organized, and how they use technology to facilitate and enhance their social operations and social contact, provide important knowledge contributions to the way in which their services and digital inclusion policies should be designed.

Boase, writing on the consequences of personal networks for rural internet use, describes that although infrastructure and demographics are undoubtedly significant factors, 'equalizing Internet adoption in rural and urban areas may require more than simply providing infrastructure that is affordable to a population of the right demographic composition' (2010: 1257). Boase looks, additionally, at the residents' actual personal networks (as does this thesis using alternate means and method), concluding that 'the composition of personal networks in rural areas may hamper general levels of Internet adoption and high-speed Internet connection at home' (Ibid). Boase's argument employs the concept of 'direct network externality', describing how 'the value of adopting the Internet varies directly with the number of people with whom one can interact online (Ibid: 1258). Boase's method, however, looks more so at the occupational diversity of personal networks, rather than creating whole ego networks from scratch with respondents. Boase's method involved establishing if respondents knew any active ties in occupations from a list of ten pre-selected occupations of varying prestige, chosen in intervals from an accepted occupational prestige scale. Furthermore, the intricacies of contact across these active ties was not fully explored, focussing more so on whether or not people go online.

Moving beyond the community social network as a whole, and considering the individuals of which it is comprised, literature points to the presence of key actors within communities which warrant special attention in order for community efforts to gain traction. O'Brien et al. describe how '…there are no quick fixes to the problems of making rural communities more viable: what is required is the patient development of working relationships between leaders over time' (1998: 124). Along similar lines, O'Brien et al. also refer to 'community leaders', referring to Warren's (1978) 'horizontal linkages' (inter-community links), which they define operationally as 'specific types of social network ties between community leaders which facilitate communication and working collectively to accomplish community goals' (1998: 109). These stand distinct from Warren's (1978) 'vertical linkages', which relate to accessing resources outside of one's community bounds (O'Brien et al., 1998: 109).

Looking more specifically at this idea of the community leader from a digital perspective, Ashmore et al. speak of 'digital champions' within communities: 'These digital champions, individuals who seek to promote the community broadband agenda, play a key role in community-led broadband initiatives' (2017: 419). And in terms of how digital efforts will impact upon the formation and structure of community networks, this is an ongoing process which requires movement through a process before change is effected. As highlighted by Haythornthwaite, putting in the technology is but the first step towards growing social networks, and the acquisition of new ties will only be realised when that technology is utilised, and the end-user begins to establish connections (or as the extract below describes – activates latent social network ties enabled by, in the case of this doctoral research, their broadband connectivity):

> Laying an infrastructure, such as the Internet, intranets, wireless connectivity, grid computing, telephone lines, cellular service, community networking

> initiatives, or neighborhood networks, when combined with the devices that access them (phones, cell phones, computers, etc.) makes it possible for social networks to form. Such infrastructures make a connection available technically, even if not yet activated socially. These technical connections support latent social network ties, used here to indicate ties that are technically possible but not yet activated socially. They are only activated, i.e. converted from latent to weak, by some sort of social interaction between members (2005: 137).

Clearly, it is not just the structure and operation of the rural community network as a whole which is of potential interest to those formulating ICT policy, deploying technology and engaging in digital inclusion efforts within rural communities. Additionally, there may be key actors within those networks who are of importance for the success of measures implemented in rural locales. And, furthermore, within the rural village, there will be residents with their own individual social networks, the composition of which will affect the kinds of communication technologies used across those networks. For instance, Haythornthwaite (2005: 127) has reported that 'particular differences [were] evident between the use of media by those strongly versus weakly tied', so depending on the composition, characteristics and quality of the networks, differences may be identifiable in the use of technology among rural villagers and their individual social ties.

This study will seek to consider all of the aforementioned elements in its research approach, looking not just at the composition of rural social networks, but at the characteristics and attributes of the social ties within those networks; the geographical reach of those networks; the presence of key individual social actors within the site of study; and the way in which technology is deployed across those networks, as well as any patterns and variations within that.

2.7 Sustainable Community Technology

Whilst superfast broadband could, and should, be an ideal conduit for knowledge within the context of the rural village, it is also one which must be embraced and become embedded in village life in order to be sustained in the longer term. Whitacre et al. (2014) make clear that it is with rural broadband adoption and not solely with rural broadband availability where impact is realised, and the sustainability of that impact is key. As Day has surmised, 'The social sustainability of any community technology activity is dependent on whether or not it forms an integral part of, and contributes to, the shared experiences that constitute community life' (2005: 1). This social component of sustainability is one which is garnering increased support (Cernea, 1993). Simpson (2005: 112) describes how 'Fostering sustainable community development is thus dependent on understanding how social capital is created, and on an awareness of how social capital can underpin sustainable community informatics initiatives in rural communities', highlighting just how crucial the focus on the social aspect of communities is, in order to foster the sustainable success of initiatives within them. As asserted by Peronard and Just, '…a rural adoption approach needs to draw on existing social meaning systems (2011: 691).

Ensuring any rural technological step-change maintains longevity in the real world, beyond initial enthusiasm at the outset, presents an additional challenge for both rural communities and broadband stakeholders. Day asserts that 'a central goal should be to develop shared understandings of ways in which ICT contribute to building and sustaining active and healthy communities' (2005: 1). Highlighting the need for community input and participation in developmental processes, Dunmade writes of the importance of involving rural dwellers at all stage of the development process, advocating a 'collaborative lifecycle' approach to sustainable rural technology

development (2010). And research has shown that this approach can yield more sustainable results in the longer term. Chambers describes how experience has shown that 'where people are consulted, where they participate freely, where their needs and priorities are given primacy in project identification, design, implementation and monitoring, then economic and social performance are better and development is more sustainable' (1997: 177). Furthermore, Day states the following, asserting that participation by those potentially affected by an intervention is indeed a prerequisite for the sustainability of the intervention outcomes:

> …it must be communities themselves that define and manage the fitness or applicability of that initiative. Active participation of a local community, at every stage of a project's life cycle, is essential if the community is to identify with, and develop a sense of ownership of, an initiative. Active citizenship, human-centred design and communal participation from the early planning stages are therefore prerequisites for sustainability… (2005: 2).

The notion that sustainable technology needs to be applicable to the community in which it is being deployed, and that it needs to work for the greater good of the community as a whole, are encapsulated within the community informatics (CI) approach to ICTs. 'CI strives to bring to communities such Information Systems (IS) that might be able to translate the essence of how the community functions or should function' (Saad-Sulonen and Horelli, 2010). The same writers suggest, with parallels to Dunmade's collaborative approach, and the communal participation advocated by Day, that 'The embedding of CI in a larger socio-cultural framework, such as participatory planning and design, might be beneficial for both the development of CI and its outcomes for the community' (Ibid). The call for a move towards heightened community participation in both technology design and implementation processes is increasingly evident in literature surrounding ICT design for rural life. Simpson has outlined the different factors which contribute to the success of community informatics initiatives,

putting forward a framework which emphasises 'the interplay between physical infrastructure (including hard technologies and their location in the community), soft technologies (including capacity building, education, training and awareness raising), social infrastructure (including local networks and community organisations) and social capital (including trust and reciprocity, strong sense of community, shared vision, and outcomes from participation in local and external networks)' (2005: 102). Huggins and Izushi have identified a number of practices which could be effectual in fostering the spread of effective ICT utilisation – 'the use of community resource centres'; the 'targeting of personal and entertainment activities'; the 'support of selfmanaged learning'; the 'mobile provision of training programmes'; the 'demonstration of ICT potential through the use of ICTs in general services'; and 'the selected use of financial support' (2002: 15). They also highlight the vital importance of community engagement from the outset in the development of sustainable ICT programmes.

> The most effective ICT learning provision requires strategies that integrate different programmes into a coherent package at the community level. ICT initiatives should adopt a collaborative approach between relevant organisations, with less protectionism than is often currently the case. Such 'openness' is essential for avoiding an on-going cycle of initiative re-invention. Finally, it is vital to recognise the community sector as an important actor if ICT initiatives are to become sustainable. A key to the success of any ICT programme is the engagement of local communities in the very early stages so that they facilitate the sense of 'ownership' and the development of a self-managed learning process (Ibid).

With research highlighting the benefits of community involvement in processes which impact that community's development, and with evidence of the advantages brought about when technology is embedded and made an integral part of community life, it follows that in order for technological step-change and digital inclusion efforts to be effective and acquire longevity and sustainability, modes in which community engagement can be heightened warrant scrutiny. In the context of the rural village, this

poses the question as to how communities can be enabled to harness superfast broadband technology and use it for the wider community good, in order to enact positive transformation, a research problem which this thesis sets out to address.

Grimes (2000) writes of an increasing recognition that the social component of technology projects and policy has oft been neglected, leading to ineffectual projects and unsustainable outcomes. Again, this comes from the steadfast focus on deployment and access, with minimal, if any, attention given to the social component. He describes how 'EU policy to date has been influenced by a strong technology dimension with an emphasis on the installation of necessary infrastructure and equipment. There is an increasing awareness, however, of the need to focus on the social dimension, as scepticism grows about wasted resources, poorly thought out projects and false expectations' (Ibid: 13). Grimes employs the example of rural teleworking to elucidate his point, describing how 'Teleworking, which was widely hyped as the best prospect for rural areas, continues to be predominantly an urban or suburban phenomenon' (Grimes, 2000: 13). The teleworking discourse may have led to these so-called false expectations for rural locales, potentially due to a lack of thorough consideration of the social makeup of the rural population. With technology initiatives introduced in such a way that they are suited to the local rural context and culture, coupled with sufficient collaborative design with rural residents, outcomes and longevity could be considerably different, leading to mutual benefits for both rural dwellers and broadband stakeholders alike. Such a strategy would certainly be in line with Gurstein's push for an 'effective use' strategy. Gurstein defines effective use as 'the capacity and opportunity to successfully integrate ICTs into the accomplishment of self or collaboratively identified goals' (Gurstein, 2003). In doing so, many of the lofty ambitions with regards to the embedding

of technology, and the long-term sustainability of technology within the rural community domain, may be more readily realised.

Many have written on the importance of a policy focus on community and social capital in order to bring about sustainable outcomes. Sustainable community developments need 'an explicit policy emphasis on strategies to build the community field and generate social capital' (Bridger and Luloff, 1999). In a similar vein, Simpson writes that capacity building models 'can have considerable benefit for communities if they are realistically implemented with adequate resourcing and careful consideration of the long-term impacts (both positive and negative)' (Simpson, 2005: 115). Simpson has written about the importance of 'soft technologies' in the implementation of initiatives at the community level (Ibid: 109). These are described as 'those 'technologies' that enable individuals to learn about and use hard technologies (such as ICTs) or to manage CI initiatives (such as awareness raising, education and training, and building leadership)' (Ibid). Included below is a selection of Simpson's suggestions for soft technologies (Ibid), many of which could potentially be incorporated into rural ICT initiatives to ensure that the focus on the social element of such initiatives is not neglected, and to move towards a more sustainable model of rural community ICT development.

- Formal programs and informal activities that increase awareness of the potential and benefits of ICTs.
- Formal and informal education and training programs that equip community members with the skills and knowledge required to become competent users of ICTs.
- Building leadership across community groups and organisations where individuals become the 'local champions' encouraging others to engage with ICTs, or managing the CI initiative.
- Building technical expertise for supporting and maintaining information and communication technologies.

Simpson also touches on the need to foster capacity building, and bring strategic added value into the mix, in order to bring about heightened social capital, champion community ownership, and ensure the sustainability of interventions.

> Projects must be designed in such a way that they are supported by soft technologies that help to build local capacity and leadership, encourage community ownership and strengthen local social infrastructure and networks, and therefore build social capital. If these factors are neglected, the impacts of a CI initiative can be limited and short-lived. The negative impacts resulting from the failure of a community-focused CI initiative may spread so far as to have a flow-on detrimental effect on the community's social capital, thereby undermining not just the sustainability of the CI initiative, but the sustainability and resilience of the community as a whole (Ibid: 115).

Merkel et al. discuss another difficulty around sustaining technology use and learning, and it is one which emerges within the community itself, tied to their awareness of their own community ambitions, and what meeting these ambitions functionally necessitates. 'The goal of sustaining technology use and learning in community computing contexts is a difficult problem because often community groups do not realize the extent to which technology has become tied to their mission' (2005: 159). The potential need for wider ICT exposure and awareness within the rural community setting, in order to precipitate thoughts of heightened ambitions, and novel ways in which ICTs can rapidly advance their individual mission is indeed worthy of reflection. What is desired is a sustainable condition, where rural residents take on the role of active contributors and not just that of passive consumers (Fischer, 2002). And, as summarised by Simpson, sustainability must be an inherent component of all efforts to reach this ideal state:

> Project findings emphasised the importance of sustainability as a key element of CI initiatives if they are to build ICT skills and capacity, encourage widespread uptake of ICTs, achieve greater social inclusion, build social capital and enable communities to fully capitalise on the potential of ICTs for community development (2005: 104).

This required focus on the human dimension and the need for a more enlightened policy framework is also elucidated by Grimes, who writes that:

> Despite the many disappointments, it would be a serious error to underestimate the potential that ICTs can contribute towards rural development within a more enlightened policy framework. A different approach is required, which appreciates the fundamentally subordinate role which technology must play within an integrated strategy. Technology cannot substitute for entrepreneurship nor for well thought out strategies for development. No doubt there will be some surprises as in the case of the Internet, but there will be no authentic realisation of the potential until a much greater emphasis is placed on enhancing human dimension (2000: 20).

As the European Network for Rural Development's agenda dictates, 'We need to support digital infrastructure, but we also need to empower rural citizens to develop online and offline solutions that strengthen rural vitality and sustainability through social innovation and smart specialisation' (2018: 3).

2.8 Summary

A review of the literature has shown that debate regarding the effects of technological transition continues and, furthermore, there is not always consensus as to how far-reaching the effects are in reality, nor agreement on the extent to which they can be successfully measured. Further reading showed that an alternative body of research now stands in opposition to technological determinism and the notion that community is being 'lost'; choosing instead to examine the ways in which technology can be woven into the minutiae of everyday life and, in fact, become a support for local community networking structures, making them, and their use of appropriate technology, more sustainable in the longer term.

Alongside this debate is a growing depth of understanding that response to, and adoption of, technology will vary considerably depending on place, and that this fact warrants attention in the design and deployment of new technology and any related

digital inclusion efforts. Going one step further and looking specifically at the *rural* condition, we see that there are many justifications for treating rural place as different and unique when compared with its urban place counterpart. A growing body of literature is highlighting the need for tailored policy solutions, and a step away from a one-size-fits-all policy approach, in recognition of the fact that rural locales will appropriate technology differently, and may need certain measures in place in order to advance progress with the adoption and effective utilisation of ICTs now at their disposal. However, literature on exactly how rural locales do in fact appropriate technology is somewhat lacking.

Existing research highlights the need to pay attention to the social structures of a rural neighbourhood. A rural village community will have its own social operating system, and the patterns of social organisation within that rural place require identification and scrutiny. Authors point to the presence of community leaders and digital champions within rural places, access to whom may have an important role to play in the successful outcomes and impact of any potential digital inclusion interventions.

The need to build in and ensure longevity and sustainability for any rural ICT deployment or digital inclusion measure is clear. That the technology is relevant to the context and the culture of the rural place in which it is to be rooted is critical. A review of research elucidates a call for a more enlightened policy framework in order to meet the needs of rural communities, or, as Warren has described it – a 'complete socio-technical system' (2007: 374). Calls for stakeholders to have a greater understanding of rural issues were abundant, with the need for further needs assessment and analysis of rural outcomes highlighted, as was the need for stakeholders to take on a greater degree of social responsibility in their approach to ICT deployment. Emergent from the literature is the

need for policies which strive for the effective use of technology, and the embedding of technology into everyday practices; policies which are sensitive to the social and community needs of a rural place, whilst also enabling social and community objectives; and also policies which foster an environment where the appreciation of technology and the subsequent willing adoption of technology are readily realised. As Whitacre et al. (2014) surmised, it is in the adoption of rural broadband where impact is felt, and not just in the availability of rural broadband. This requires a new and meaningful focus on the social dimension of village places, and upon the needs and desires of these rural places, as well as a more thorough examination of the preferred sustainable outcomes for rural place more widely. As Gilbert et al. assert, 'To design for rurality, we must consider not only differences among people but also what our ideals for these spaces and lifestyles might be and how technology might transform them' (Gilbert et al., 2010: 1384).

In order for technological advances and changes in the adoption of technology to acquire longevity and be sustainable, research has shown that community involvement at all stages of the development process is a key factor. Dunmade's suggested collaborative lifecycle approach (2010), and the suggestion by Day that communal participation is a prerequisite for sustainability (2005), all warrant consideration prior to entering the rural village case study in order to assess how a community might be impacted by the rollout of superfast broadband in their locale, and what the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation might be. As does Simpson's (2005) proposed implementation of soft technologies within a community setting, so that capacity building and social capital acquisition may be enabled, in order to ensure the longer-term sustainability of any ICT initiatives implemented.

Having reviewed the existing body of knowledge and situated the central tenet of this thesis within an appropriate theoretical framework, this research sets out to explore how one should design for rurality with respect to ICTs, focussing on a case study rural village in order to address its research questions. To understand the relationship between a rural village and ICTs, including how they use technology to sustain their social relationships, how they imagine technology, and what they might want from technology, this thesis asks – 'How does a rural village community appropriate technology, and how might it be affected by the rollout of superfast broadband in its locale?' (research question 1). To understand what the rural village needs in order to meet its social, spatial and community objectives, and how it might make best use of newly deployed technology, this thesis questions – 'What are the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation?' (research question 2). The following chapter will explain why, and how, the methodological approach designed in order to answer these research questions was developed.

CHAPTER 3: RESEARCH METHODS

3.1 Introduction

As described above, there is a lack of knowledge on how to effectively design for rural life with respect to technology. Moreover, it is clear that different types of locale and society will respond to any newly deployed technology in alternate ways. With these realities in mind, this research sets out to decode the rural village, getting to the heart of the ways in which it is socially organised, and the means by which its residents make use of technology. It seeks to uncover how rural residents imagine technology, how they might be affected by the rollout of superfast broadband, and what the optimum conditions for them seizing upon superfast broadband as a community asset might be. More precisely, to recap, the research questions that this thesis addresses are detailed below:

1) How does a rural village community appropriate technology, and how might it be affected by the rollout of superfast broadband in its locale?

2) What are the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation?

In order to address the research problem, and attempt to answer these research questions, a number of methodological approaches were considered. After some deliberation, it was decided that in order to address such questions, it was critical for the researcher to work in close proximity with a community. Whilst remotely conducting research, perhaps via postal or telephone surveys, would potentially allow for wider coverage, it would not have granted the level of understanding of how a community operates socially, nor how it interacts with village spaces, that working in an embedded

manner within a village could provide. The kinds of issues this research seeks to address require human contact and immersion in the site of research, in order to yield rich results.

Having settled on this immersive approach, there were a number of methodological approaches to consider. Whilst it was clear that observations were to form an organic and natural part of the research due to the embedded nature of the fieldwork, it was decided this would not be a formal method upon which the research would rely, but rather a by-product of the chosen approach. Whilst more obvious choices such as the survey and qualitative interviews were a given to gain some of the necessary data, there was a feeling that the research needed to take further steps in order to advance understanding of a range of complex issues. If the end goal was to understand how a rural village community appropriates technology, the research needed to look beyond someone simply ticking a box to assert that they 'use email' or 'use VoIP', it needed to understand how, in reality, they employ technology to communicate with and sustain their social ties within the village and beyond. This knowledge would require a more sophisticated and labour-intensive methodological approach, and the chosen method for this was the more formal method of social network analysis. In acquiring understanding of how villagers operate socially, and how they use technology through those social networks, comprehension of their 'real-life' use of technology comes to life, and the ways in which new advanced technologies can be made applicable to them and their social operations emerge more clearly. This more formal and structured data, together with data gleaned from complementary methods, all gathered through fieldwork conducted in an embedded manner, alongside members of the communities in their natural environment, as their lives rolled on as normal, would allow answers to the research questions to emerge, along with a picture of what conditions are conducive

to the creation of a sustainable digital neighbourhood, where modes of adopting technology are appropriate to community needs, and technologies are used in such a way that is meaningful and sustainable in the longer term.

3.2 Triangulation of Methods

In order to respond to the research questions, this PhD employs a robust research protocol, drawing on a complementary triangulation of research methods, with fieldwork carried out in the period April to December 2013. By 'triangulation' in this context here, I refer to 'the integration of quantitative and qualitative data, not merely to look at agreement or disagreement between the data sets, but to put the data into a more comprehensive explanatory framework' (Howe in Mertens and Hesse-Biber, 2012: 75). This mixed-methods approach has enabled advancement towards a solid understanding of a complex range of social, technical and interactional issues, and details of each research component incorporated are outlined below.

3.3 The Case Study Approach

To meet the needs of the research, the decision was taken to focus on a single case study at a specific point in time (in this instance – a rural Cornish village undergoing an upgrade to superfast broadband), and to carry out research in an embedded manner within this locale. Yin has offered a detailed and multi-layered technical definition of what a case study truly is; one which, for me, highlights the benefits this approach can afford, and, I feel, points to why it was the most suitable choice in this instance:

> A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. The case study enquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating

> fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis (2003: 13-14).

To learn of the lived reality of rural villagers experiencing the contemporary phenomenon that is superfast broadband, and to see, in real life, with the benefit of context, how they respond to and appropriate that technology, the immersion of oneself in the everyday workings of that village was both warranted and necessary. The case study approach allowed for an in-depth exploration of a village under specific conditions at a fixed point in time.

3.4 Case Study Site Selection Criteria

Having opted to employ a case study approach, there was a need to select the most appropriate site. That search began with a number of pre-set selection criteria. It was imperative that the superfast broadband rollout be imminent in the locale selected, so that fieldwork would occur in a timely fashion within a village which was presently undergoing a technological transition. With cooperation from BT and Superfast Cornwall, it was possible to rule out certain places which did not align with the preferred fieldwork timeline. A shortlist was drawn up and minimised further with the need to find a non-affluent village – one which fell into the bottom 50% of Cornwall's 327 LSOAs on the Index of Multiple Deprivation (Department for Communities and Local Government, 2010). A village which is relatively isolated and geographically self-contained was also preferred, and one which has sufficient public/ semi-public spaces present within the village itself. With the application of these criteria, and the production of a list of potential case study options, site visits were made to assess suitability in real life, and to get a feel for where it might be possible to conduct such research. Considering the difficulties of gaining access to a neighbourhood as an outside researcher, and the need to work closely with the village and its residents in order to meet the study's

methodological aims, the degree to which the village embraced both myself as the researcher and the prospect of the research was also given due consideration.

3.5 Selecting a Case Study Site for Investigation

Following a number of site visits and initial scoping discussions with a select few villagers, the final decision was made to choose the village of St Breward as the case study upon which this PhD is based. It was felt, overall, that this village not only met each of the pre-set selection criteria, and was undergoing its upgrade to superfast broadband at an opportunistic time, but it was also found to be a welcoming and enthusiastic village, where it was believed there may be the possibility for the researcher to acquire suitable access, thus allowing the fieldwork to gain traction, and the eventual needs of the research to be met.

St Breward is a civil parish and village in Cornwall, the southernmost county of England. It is located between Bodmin and Camelford, on the western side of Bodmin Moor, and has a population measuring less than 1,000. Further background to this village is provided at a later stage in Chapter 4 but, for now, Figure 3 below illustrates where it is positioned geographically within the United Kingdom.

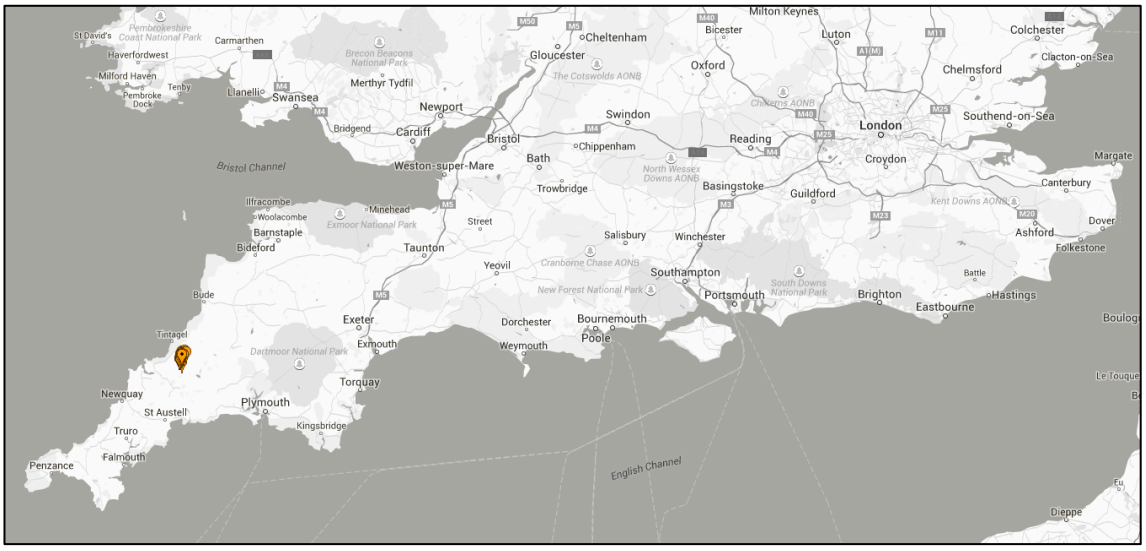


Figure 3: Geographical Position of St Breward, Cornwall, United Kingdom

3.6 Gaining Access to a Neighbourhood

Once the site for study had been finalised, the next issue became one of negotiating access to that village and its inhabitants, and ensuring the designed research methodology could be applied. This began, in earnest, with introductions to, and discussions with, the proprietors of the local village shop. This local couple were quick to get on board, and enthusiastic about the prospect of assisting with the establishment of the research. It was a relationship, the formation of which early on, was to prove very fruitful for the research journey. Further discussions took place in the local village pub and the post office, where additional relationships were forged, though none as instantly beneficial as that which was occurring with the local shopkeepers.

As well as these early discussions, additional efforts were directed elsewhere – the next St Breward parish council meeting was attended, where there was an opportunity granted to speak to community members and distribute some materials with information regarding the forthcoming research project. A notice was placed in the local parish magazine and on the community website, the many community groups were contacted, and flyers were displayed on the relevant noticeboards throughout the village. As time passed, word spread, and more and more people got in touch with a willingness to assist. It soon became clear that once accepted and trusted by key local influencers (the village shopkeepers), the message of researcher intention spread quickly. I became known within the village, recognised by those whom I had not yet met. It was a source of intrigue to locals, and one which would inevitably be met with a degree of suspicion, something which was massively counteracted by the trust granted to me by people in positions of influence locally. It was often a case of 'She's alright, she's pally with so and so in the shop.' With approval, support and trust established with those held in regard by villagers, the possibilities for access to village life grew exponentially, and

did so quickly. As Whyte has described 'I found that my acceptance in the district depended on the personal relationships I developed far more than upon any explanations I might give… If I was alright, then my project was alright… (1981: 300).

3.7 Becoming Embedded in Village Life

As time passed, relationships with village linchpins continued to develop, and I soon found myself with free room and board in the spare bedroom of the shopkeepers' home, generously invited to hold base there during fieldwork, to dine with them, and to freely discuss village life. As fountains of local knowledge who knew the ins and outs of all village residents and processes, this scenario was hugely beneficial, and further supported my position as someone to be trusted and accepted. Like Whyte in *Street Corner Society*, I found I was quite organically:

> …building up the structure and functioning of the community through intensive examination of some of its parts in action. I was relating the parts together through observing events between groups and between group leaders and the members of the larger institutional structures (of politics and the rackets). I was seeking to build a sociology based upon observed interpersonal events (Whyte in Andersson, 2014: 96).

Living in such close proximity enabled the observation of interactions amongst villagers, and the documenting of the running of events in village life; something which allowed for the key players and organising forces in the village to emerge clearly. What had set out as a project which required access to, and contact with, villagers for fieldwork processes had suddenly begun to veer into the realms of ethnography and social anthropology, such was the level of access this community granted to me.

> What is required for social anthropology is a knowledge of how individual men, women, and children live within a given social structure. It is only in the everyday life of individuals and their behavior in relation to one another that the functioning of social institutions can be directly observed. Hence the kind of research that is most important is the close study for many months of a

> community which is sufficiently limited in size to permit all the details of its life to be examined (Radcliffe-Brown, 1964: xv).

This, of course, brought with it much advantage, but also required me to be mindful of the introduction of any bias, and to ensure my sampling systems were not influenced by my newfound position within the community of St Breward.

3.8 Survey

This research employed a comprehensive paper survey, which was administered face-to-face, typically in the respondent's home, during the period April to December 2013. The survey covered three broad themes: some demographics and background on the participant as an individual; the participant's relationship with technology; and the participant's views on, and relationship with, the neighbourhood in which they reside. The survey responses were later reformatted electronically, with results analysed using SPSS. A copy of the questionnaire is attached as an appendix, to illustrate the breadth of questions covered during the course of the survey (See Appendix 1).

In addition, all survey respondents were contacted by email with some follow-up questions in January 2015. This was seen as an opportunity to gather any useful comments from willing participants regarding their longer-term experience of signing up, or indeed not signing up, for superfast broadband.

3.9 Qualitative Interviews

In-depth, semi-structured face-to-face interviews also played a part in this research, with respondents further elaborating on the topics covered by the survey. A topic guide for these is attached as an appendix, and gives some indication of the themes which were discussed during the course of the interviews (See Appendix 2). The length of the interviews varied, but they were typically about 30-45 minutes in duration, and were

most usually conducted at the respondent's home. All interviews were audio recorded with consent from the respondent, before being transcribed and analysed in order to inform the research.

3.10 Diary Study

In addition to a survey and interviews, some respondents also completed a two-week diary, documenting their social and technological interactions, and commenting on their experiences. Iida et al. describe the diary method as involving 'intensive, repeated self-reports that aim to capture events, moods, pains or interactions near the time they occur' (2012: 277). Diaries have the benefit of being temporally relevant and reducing retrospective bias (Ibid: 278). For these reasons, it was felt that a diary could make a worthwhile contribution to the exploration of residents' social habits and their relationship with technology, capturing in real time their interactions with people and technology. A copy of the instructions contained within the diary for those taking part are attached as an appendix, to give an indication of the type and format of data which was captured (See Appendix 3). This method proved useful for collating honest and timely reflections from respondents, captured in their own words and at their own pace.

3.11 Social Network Analysis

A further primary method which this research utilises, and one of the most beneficial for the study, from which much of the quantitative data presented here has been derived, is social network analysis. As Hampton (2001: 20) described, we need to focus on 'the effects of computer-mediated communication on the network of people's social relations', and this method affords that possibility. As Wellman describes:

> Social network analysis is principally concerned with delineating structures of relationships and flows of activities. By looking directly at linkages rather than at solidarities, the network perspective enables us to focus directly on the basic

> structural issues posed by the Community Question. Such an approach can do much to free the study of community from normative and spatial predilections (1979: 1203).

It is this ability to look at structures of relationships and flows of (technological) activities which makes this method so applicable in the rural community setting for this particular study. This section offers an in-depth description of the social network analysis processes which were carried out during the course of this research; it is the most technical of all the methods applied, and requires some detail in order to clarify, and justify, the approach I chose to take.

A personal network research design was employed for this case study, which is defined as one for which one must 'sample to obtain a set of respondents and then collect from each respondent (ego) the list of people (alters) they are connected to, the nature of ties connecting them, characteristics of these alters, and the respondent's perceptions of the ties among the alters' (Borgatti et al., 2013: 262). To be clear, I did not seek here to map out the network of the community as a whole, nor to measure their interconnectedness, but rather to examine the personal ego networks of a demographically representative subset of the community of St Breward.

My target population of St Breward's residents was sampled, selecting a subset of 100 respondents which was demographically representative of the village population as a whole in terms of age and gender. A personal-network research design was then employed during the time period April to December 2013, in order to collect comprehensive data for 100 ego networks. The social network analysis survey instrument was designed to comprise of three distinct sections and, in each individual case, the research was conducted face-to-face during a pre-arranged, and often rather

lengthy, meeting in the village (most usually the respondent's home). The three research stages are detailed below.

3.11.1 Name Generation

In order to carry out the social network analysis, phase one involved the use of name generator questions. These are defined by Borgatti et al. as 'a series of open-ended questions designed to generate the names or nicknames of people in a person's life' (2013: 263). Having reviewed the use of these in other studies, and decided that I wished to collect more comprehensive ego network data than the limited core ties which the USA's General Social Survey 'Who do you discuss important matters with?' question could elicit, I took the decision to employ multiple name generator questions. In total, six open-ended name generator questions were used in this research, designed to elicit a thorough list of alters within respondents' personal ego networks. Participants were continually prompted to list the names of those they engage with, with ample opportunity granted to re-visit their lists and add in any names of people they felt had been omitted. This process was enacted exhaustively, with all names recorded and no limit placed on the number of alters a respondent could identify. Resultant ego networks comprised of those people whom respondents discuss important matters with; work with; rely upon; receive help from; borrow from; socialise with; and feel close to; etc. - core network ties most prominent in respondents' lives, who go beyond being mere acquaintances, but also more informal ties, and others who sit outside the absolute core yet are very much present in the egos' lives, constituting a noteworthy part in the operation of their personal networks as a whole. Both types of tie are of great relevance to the operation of one's network, and the level of social capital which one acquires. 'Strong intimate ties are important contributors to social capital because of the trust and

reciprocity they promote between people who know one another well' (Simpson, 2005: 111). And weak ties, which link community members to those less well-known than their core ties 'provide access to skills, expertise and resources not available in their 'inner circle' and build social capital in a different way' (Ibid). The complete selection of name-generator questions used in this case study may be viewed in Appendix 4.

Ego network creation is known to be burdensome and laborious, with respondent fatigue a real risk factor. It is sometimes suggested that placing limits on the number of alters recorded is a viable option to overcome this problem (Marsden, 1990). However, this does place a number of restrictions on the quality and usefulness of resultant data. Another approach taken to circumvent this issue is a further stage of sampling of the list of alters generated (Marin and Hampton, 2007; McCarty et al., 2007). Borgatti et al. highlight Brewer's assertion that respondents do not typically list their alters randomly, so it follows that to take a subset of alters for analysis could introduce a significant level of bias to results (2013). This knowledge informed the decision not to place a limit on the number of alters which a respondent could list, regardless of the burden it created; it was felt that in the interest of collating data for comprehensive, unbounded and unlimited ego networks, and getting a truer representation of how the community residents were operating socially, this was a necessary burden to bear.

3.11.2 Name Interpretation

Phase two of the social network analysis sought to interpret each alter identified by the respondent in greater detail. The respondents were asked about each name they provided in the name generator phase, addressing both the attributes of the alter and the nature of the alter's relationship with the respondent; what Borgatti et al. have termed the 'name interpreter' step (2013: 263). This phase did not commence until all

alters had been listed by the ego, with each alter revisited in turn, one by one, in phase two. Sometimes, during this step, the ego would recall someone they had omitted from their list of alters. On the occasions when this did occur, the list was revisited and name additions made as necessary. Data for eight additional variables was collected during this phase – the alter's gender; the nature of the alter's relationship with the ego (multiple responses recorded); the degree of the alter's closeness to the ego; the duration of the alter's relationship with the ego; the alter's geographical proximity to the ego; the alter's means of contact with the ego (multiple responses recorded); and the physical spaces in which the alter sees the ego (multiple responses recorded). A detailed list of questions employed during this phase may be seen in Appendix 5.

3.11.3 Name Interrelation

The final stage, which is often deemed optional, but was employed here in order to examine the interconnectedness of ties identified and consider the density of individuals' networks, is what Borgatti et al. (2013: 263) have termed the 'name interrelater', where the respondent is required to reveal the ties between the alters identified. This final step laboriously explored the respondent's knowledge of the ties among the alters identified by them in section one. An adjacency matrix was created for each ego, with the respondent asked to identify links between alters for every potential tie. Each possible interrelationship was considered, asking, for example, 'Does Patrick know Silas?' A simple 'yes' or 'no' was recorded by the researcher in order to indicate the perceived presence or absence of a tie between two alters in the ego network. An example of the kind of adjacency matrix used for the purposes of this research may be viewed in Appendix 6.

Once the list of alters from phase one had been elicited, phases two and three were the critical points at which data could be gathered to establish the geographical reach of egos' ties, and also the density and interconnectedness of villagers' personal networks, as well as the ways in which technology flowed through those networks in order to sustain social ties.

In total, 1,618 social relationships were revealed by the social network analysis carried out with 100 respondents, indicating an average of 16.2 alters per ego, 48% of which were male, leaving 52% identified as female. Data for each of the 100 ego networks was later input and re-formatted electronically, before being rigorously analysed using both SPSS and UCINET.

3.12 Sampling

Once the research methods of choice were established, it then became necessary to examine what would be realistically achievable within the PhD parameters in terms of sample recruitment. The decision was taken to aim for a demographically representative sample of 100 for the survey and social network analysis (the same 100 people would complete both elements). Whilst this was an ambitious aim for face-to-face research, particularly given the lengthy and onerous nature of the social network analysis procedures, and the need to also complete a survey in addition to that, it was felt that with such a warm welcome granted within the village, this was a target which could potentially be met if efficiently managed. It was decided that for the additional research elements – the interviews and the diary study, 15 returns for each would be sufficient in order to enhance the investigation, and to produce a rich body of data from which to draw upon.

With this in mind, and following consultation with St Breward demographic data from the Office of National Statistics, the sampling frame was drawn up, with age and gender recruitment quotas for each research element. Table 1 below summaries the quotas.

	SURVEY		INTERVIEWS		DIARY STUDY	
	Male	Female	Male	Female	Male	Female
Age 16 to 17	1	1	0	0	0	0
Age 18 to 19	1	2	1	0	1	0
Age 20 to 24	2	2	0	1	0	1
Age 25 to 29	1	2	1	0	1	0
Age 30 to 44	8	8	1	1	1	1
Age 45 to 59	15	15	2	2	2	2
Age 60 to 64	5	6	1	1	1	1
Age 65 to 74	9	9	1	2	1	2
Age 75 to 84	5	5	0	1	0	1
Age 85 to 89	1	1	0	0	0	0
Age 90 and Over	0	1	0	0	0	0
	48	**52**	**7**	**8**	**7**	**8**

Table 1: Quotas for Fieldwork Recruitment

Recruitment began with an allocated slot to speak at a St Breward parish council meeting and a local advertising campaign, which included flyers on noticeboards, as well as flyers displayed by local businesses and in village public spaces. In addition, an advertisement was placed in the local parish magazine. This was sufficient to kick-start the research, with some key village players coming forward at the outset. A reputational approach to sampling was employed at the early stages, with recruitment snowballing to an extent from there, moving to new contacts within the village. However, in order to avoid focusing on particular streams of networks held by those who self-presented, I also traversed the entire length and breadth of the village, going door-to-door to ensure I reached and recruited all people from different walks of life who I may otherwise not have met. Additionally, during the course of the research, further events, such as the village lunch club, were attended in order to fill quota gaps and complete the sampling. The specific approach to social network analysis taken with this research did grant a

certain amount of freedom in terms of sampling. With the focus on personal ego-centric networks, a strategy which involves 'looking at the unrestricted choices that people make, including those to others not included in the sample, and calculating, for example, the density and certain other ego-centric features of their contacts', many of the sampling problems inherent in the study of other bounded types of network do not come into play; '…sampling poses few difficulties other than those that arise in any kind of social research' (Scott, 2013: 49).

After much persistence, the sampling was successful, with all quotas for each of the individual research elements precisely recruited to. As intended, the selection of respondents chosen for inclusion in the survey and social network analysis was representative of the demographic distribution of the village in terms of both age and gender. The composition of the 100-person survey and social network analysis sample is summarised in graphical form in Figure 4 below.

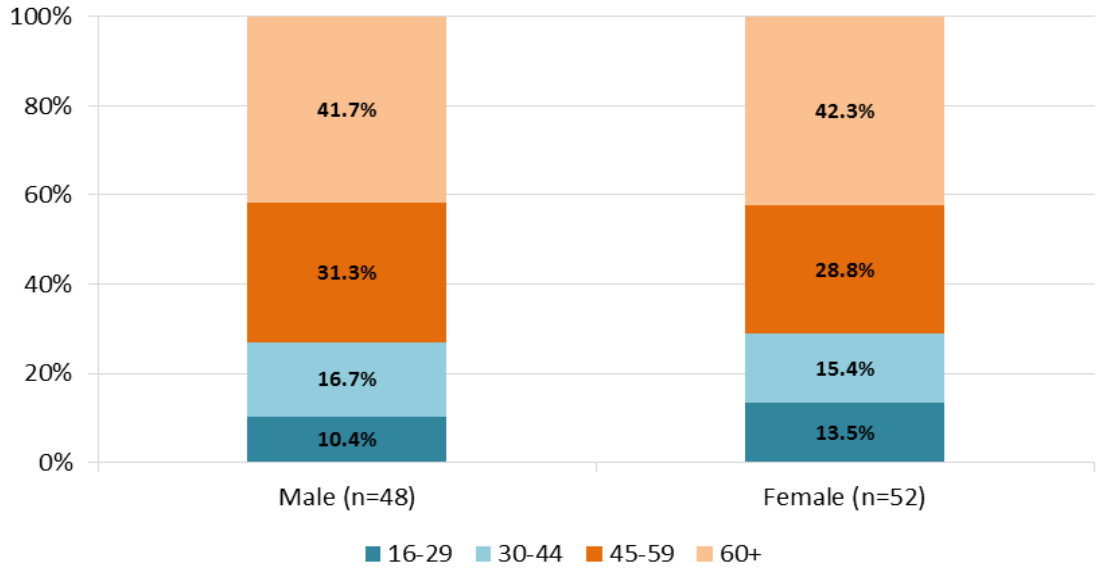


Figure 4: Age and Gender Distribution of St Breward's 100-Person Sample

A total of 104 St Breward villagers took part in this case study during the period April to December 2013, yielding 100 surveys, 100 social network analyses, 16 interviews and 15

diaries; though it must be noted that many more members of St Breward's vibrant community contributed to its richness via less prescribed means, be that through casual conversations or informal observations. The following map (Figure 5 below) illustrates the geographical distribution, by postcode, of the 100 survey and social network analysis respondents involved with the research. Each of the 30 postcodes covered is served by the St Tudy telephone exchange (St Tudy may be seen in the left centre section of the map). The isolates, seen to the north and south of the main central cluster are typically those which fall into what Superfast Cornwall term 'the final 5%' - those who, as of yet, are not catered for in terms of high-speed broadband. It is envisaged that this final 5% will one day be serviced by alternative technologies, and a new programme is now underway, though at the time of this research none of the people spoken to had any specific knowledge regarding their internet futures. A judgement was made to include one further isolate to the south, in the Blisland locale, due to their identification with the village of St Breward where they lived for many years, and where they continue to be heavily involved as a key player, as though they had never left.

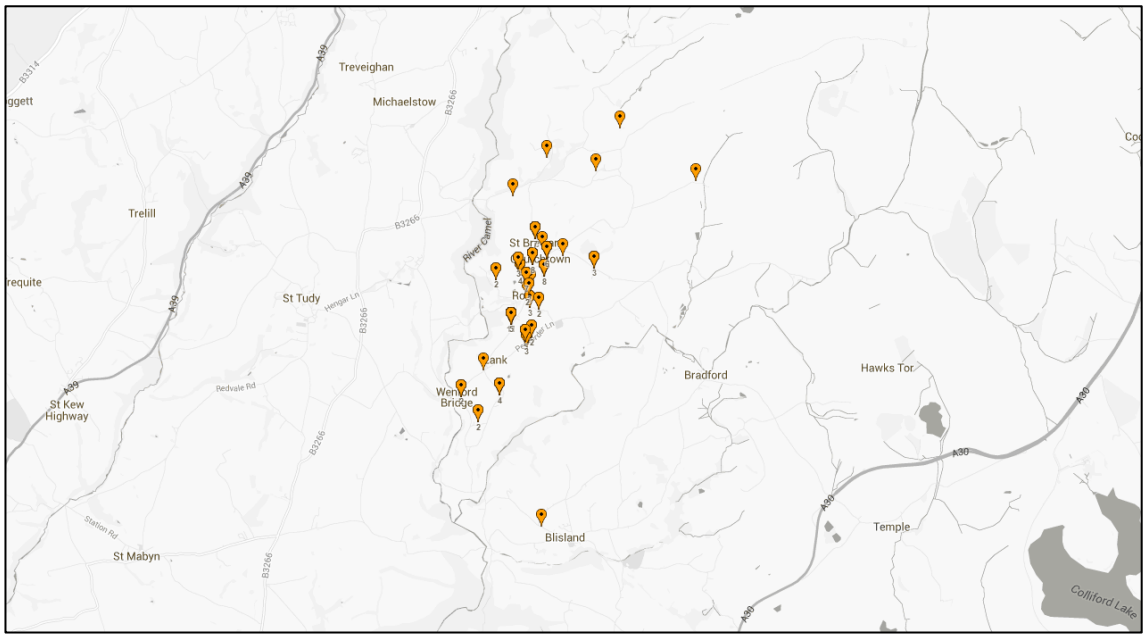


Figure 5: Geographical Distribution of 100-Person Sample by Postcode

3.13 Supplementary Research

In addition to this PhD's central body of work carried out in a lone Cornish village – St Breward, this research also employed some small degree of less intensive research elsewhere, separate to the central methods which have been outlined above, but all very much part of the research journey. This was carried out both to aid research planning, to consider issues in a timely fashion as they emerged, and to provide some context and means of comparison along the way.

Three interviews took place in the village of St Teath at the outset of the fieldwork phase. This was a village which met the same pre-set selection criteria as St Breward, and whilst an additional and comparable level of intensive fieldwork in this village would not have been within the scope of a PhD project, it did provide a useful yardstick for comparison, and those early interviews were meaningful in shaping the course of the research.

In late 2013, a one-off interview with an education professional from St Breward's local primary school, conducted in order to gain further insight into village operations in general, but also to explore how superfast broadband was being embraced within the education setting, gave rise to some interesting issues. Whilst these were not a direct avenue of exploration for this thesis, given the importance of the school to the village community, this did prompt the distribution, by email, of a small number of set questions to education professionals in Cornish primary schools, in order to ascertain if the experience of St Breward was unique or indeed comparable. It was felt that this would be a worthwhile avenue for future research, but most certainly a topic in and of itself, and beyond the scope of this study.

In the winter of 2014, two interviews were carried out with residents of St Buryan and two, also, with residents of St Day. These interviews adhered to the same topic guide as

those conducted in St Breward and, again, served as a useful comparison, also allowing for contextualisation of the research, particularly as they were based geographically further south in different regions of the county of Cornwall.

Throughout the fieldwork stage, there were also a number of ad hoc meetings relating to St Breward's community broadband efforts, some of which were audio recorded to inform research, and others which were less formal but also useful for context.

By means of a comparison of approach to village broadband, a further interview was also conducted with a resident of Stoke Climsland in May of 2014.

Where relevant, this aforementioned work is referenced in the results and discussion which follow, but overall do not make a significant contribution to the analysis carried out for the thesis as a whole, which is largely based on a significant corpus of data specific to the village of St Breward. It all served to provide context and comparison, and to keep the research mindful of goings on in other locales, which were also undergoing a great transition. It also served to confirm the applicability of findings to comparable rural locales beyond St Breward.

3.14 Ethical Considerations and Data Protection

All potential research participants were provided with a comprehensive information sheet and asked to sign a consent form prior to taking part in any individual element of this research. They were made fully aware of exactly what the processes entailed, and given ample opportunity to discuss any concerns they had about the research. I ensured, at all times, that they were in a position to make a fully informed decision regarding participation. Examples of the information sheets and consent forms used (in these examples - for the survey) have been included as appendices (See Appendix 7 for the information sheet and Appendix 8 for the consent form).

This PhD project did not necessitate any covert research, deception or the deliberate withholding of any information. Potential participants were approached openly and honestly, and were fully aware of my intentions as a researcher. The process was transparent throughout, and participants were told how they will learn of the research findings upon completion of the study.

Participation was entirely voluntary, and participants could withdraw and discontinue participation at any time without penalty. Data collected prior to withdrawal was then omitted. This was made clear to participants prior to the commencement of research.

There were no risks involved in taking part in this research. Participants needed only to share personal information to an extent with which they were comfortable, and they were assured that it would be treated confidentially and anonymised.

Participants were informed that they may request a debrief session at any stage, during which I could address any questions or concerns they may have had about the research.

Upon completion of this PhD, I intend to share results with residents of St Breward, either via a specially arranged neighbourhood talk or a tailored report; perhaps both.

All research material collated for this project was stored securely and will be destroyed after a period of ten years, in accordance with University of Plymouth policy.

Interview, survey and diary data was anonymised for analysis and reporting, in order to protect participants' identities.

It was agreed that this research conforms to the ethical principles laid down by the University of Plymouth and the relevant professional bodies, with ethical approval duly granted by the Faculty Research and Ethics Committee on 30/01/2013.

CHAPTER 4: THE CASE STUDY VILLAGE: ST BREWARD

> *I think community spirit is created by what you've got in the village itself and that, isn't it? . . . I would say that the community and the village together is what makes the village.*
>
> **Male, 68, St Breward**

4.1 Background to the Village

St Breward is a civil parish and village in Cornwall, the southernmost county of England. It is located between Bodmin and Camelford, on the western side of Bodmin Moor. St Breward is a village which could, from an outside perspective, be described as 'isolated'; it is geographically self-contained, with links to other villages and larger urban centres (the nearest being Wadebridge, Camelford and Bodmin) requiring some mode of transport to traverse the surrounding winding moorland roads. Figures from the 2011 census state a population of approximately 919 for the parish, indicating that more than ten per cent of the St Breward population was sampled for this case study (Office for National Statistics, 2011). The area is famed for its granite and china clay quarries, and the village of St Breward boasts the highest church in Cornwall. The village sits along the Camel Trail, a popular 18 mile cycling route through the Cornish countryside. It is, by all accounts, a modest and unassuming village, situated in the wild and beautiful western side of Bodmin Moor. A step into the village was a step into the unknown, but after a short time of immersing oneself in the culture of the place, one could not help but be drawn to the prevailing sense of community and solidarity arising from shared identity that it exuded. It was evident early on that there were clear social organising forces at work within the village, which the research set out to uncover over the course of the fieldwork conducted between April and December 2013.

St Breward has a pub, The Old Inn (see Figure 6), which is equipped with WiFi (though knowledge of this service was in fact minimal amongst locals, with the exception of a

few); a village store run by two very active and welcoming community members (see Figure 7); a post office with a café attached; a church and a chapel; a band room; an Institute and War Memorial Hall; a village hall; a doctor's surgery; a local primary school; a playground; and a football club. During the latter stages of fieldwork in St Breward, the post office café, which was equipped with an internet enabled computer and advertised as an 'Internet Café' (see Figure 6), ceased its operations, owing to a change in the circumstances of the owners. [Note: The post office has also since moved its base, now operating from the local village pub. Additionally, at the time of submission of this thesis, the village shop had changed hands owing to the retirement of its owners, and has also now relocated to a new base adjacent to the pub.]

Villagers were proud of their facilities, and recognised their value, with one respondent describing the local shop and school as the 'building blocks of our community', and making clear it is a case of, in their own words, 'use it or lose it' when residing in a rural village locale. Also commenting on the village shop, another respondent described how 'Every single thing starts from there … Everything works from the shop really.' Another described how 'The school is very important, you know. If you lose your school, you lose everything.' This was echoed by another respondent who, talking on the importance of the local school, remarked how 'it gives the kids a sense of identity as well; rather than being bused into a neighbouring village or town', showing the link residents make with local services and the sense of self which using them provides. The desire to support local services and keep them alive was shared by many in the village, further adding to the sense of camaraderie and shared local identity, which continued to reveal itself as more time was spent there. As described by one respondent, the neighbourhood does depend on the people who reside within it, but the area the neighbourhood sits in and the services it offers also play a role. She commented that if the area is good, 'It just

produces a nicer neighbourhood because people are happier and have more time for one another.'

One respondent defined the meaning of community as follows:

> *You can have a community without having a neighbourhood, or maybe the other way around – you can have a neighbourhood without a community. A neighbourhood would be the geographical location, but the community is the way the people interact, respond, support, work together within that neighbourhood.*

Another respondent offered the following definition:

> *I think it's people interlinking in a peaceable and friendly manner … People living agreeably together, you know, and giving each other space, and being interested in each other; not in a nosey kind of way, but, interested, helpful.*

This sentiment was echoed by others in their description of the community of St Breward during their interviews:

> *A neighbourhood is nothing to do with where you live or how you live. It's to do with the people that you live around … Community is all the people within your area and how they come together … You have to go over a bridge to get here. We're like a little island here in St Breward.*
>
> *There's a very strong sense of community here and they were very welcoming to us … The shop knows everybody's name really; the shop owners are very welcoming … It feels like they've got more social life and community spirit here than in X. I think they make an effort to do it because they're so rural out here.*

Residents of St Breward were found to be carrying out all facets of this definition of community in abundance. What emerged from the research was a strong sense of belonging and identification with place amongst residents, and also identification with one another as villagers united in both geography and in purpose.

The images overleaf offer some visual representations of key village landmarks and spaces, where much of village life and social operations were seen to unfold.

Figure 6: Visual Representations of St Breward, Cornwall

Figure 7: Image of Local Village Shop - St Breward Stores

4.2 Residents' Relationship with the Village

This thesis earlier referenced Lev-Wiesel (2003: 332), who asserted that 'a sense of belonging, solidarity, rootedness, and social ties were higher amongst residents of rural communities' than their urban counterparts. Lev-Wiesel's explanation for this is as follows:

> …the variation found in the level of 'belonging', 'solidarity', and 'social ties', that were found to be higher among kibbutz and village residents than in urban centre residents, can be explained by the fact that those who chose to live in a small community that emphasizes belonging and commitment among members are likely to have higher levels in these indicators (Ibid: 340).

This research explores some of these elements, in order to illustrate the extent to which a sense of belonging, solidarity, rootedness and local networking prevail in the village of St Breward, thus painting a picture of the type of community that exists within St Breward.

Of those who were surveyed, 62% had been in the village for ten or more years, and 79% for five or more years, so local knowledge amongst the sample was rich, with many of the respondents having been entrenched in village life for a great number of years. A great many of the villagers, having been there for long periods of time, share a considerable amount of history, strengthening their emotional connection to the place of St Breward. Although, as asserted by McMillan and Chavis, whilst a shared emotional connection arising from a mutual history is indeed a facet of the sense of community in a place, one does not need to have been part of that history in order to be embrace it:

> A shared emotional connection is based, in part, on a shared history. It is not necessary that group members have participated in the history in order to share it, but they must identify with it (1986: 13).

The village itself has more than 30 active local community groups (impressive for a parish with a population measuring less than 1,000), and 71% of those surveyed reported involvement with at least one of these local groups, whether that be bell ringing, garden club, short mat bowls, or one of the many other diverse interests catered to in the village. Additionally, 49% also held memberships with non-local groups operating beyond the village. That a considerable 71% of respondents reported involvement with at least one local group illustrates the degree to which locals choose to integrate at the local level, strengthening bonds with other residents through the pursuit of mutual interests at gatherings in communal village spaces.

Table 2 below gives an indication of villagers' habits and use of their locale, detailing how frequently they tend to go outside of the village bounds. As can be seen from the data, 23% of villagers venture out on a daily basis. Overall, 84% of those surveyed leave the village at least a few times a week for various reasons. The village does not cater to all needs for all people, so trips beyond its confines are frequent by most.

		Frequency	Valid Percent	Cumulative Percent
Valid	Every day	23	23.0	23.0
	Most days	17	17.0	40.0
	Few times a week	44	44.0	84.0
	Weekly	14	14.0	98.0
	Every two weeks	1	1.0	99.0
	Monthly	1	1.0	100.0
	Total	100	100.0	

Table 2: Frequency of Trips Outside of St Breward

St Breward is not an affluent village, falling into the bottom 50% on the Index of Multiple Deprivation, and this is readily accepted by villagers, with 65% of those surveyed rating the affluence of their village, relative to others in Cornwall, as 'about average', as

opposed to 'above average' or 'very high.' As one local resident put it, 'It's not a wealthy village, no; it's a working village.'

> *Although there are people who are very well off, quite well off, not very well off, on the bread line, people mix at places - the gardening club, the luncheon club - where, really, what you are or who you are is not really any concern; I find it is quite a social leveller of a place … The rural poor will always be with us.*
>
> *I think St Breward is an enormously generous village when it comes to charity, enormously generous, and I think people do it on, generally, very small incomes. I think there are only one or two people who one could describe as wealthy, and everybody else manages on what they've got.*
>
> *I think St Breward is reasonably classless. We don't think about where anybody came from or anything; we just are on good terms.*

The table below offers a summary of respondents' views with regards to the affluence of their village, St Breward, relative to other villages in the county of Cornwall.

		Frequency	Valid Percent	Cumulative Percent
Valid	Very high	4	4.0	4.0
	Above average	22	22.0	26.0
	Average	65	65.0	91.0
	Below average	5	5.0	96.0
	Don't know	4	4.0	100.0
	Total	100	100.0	

Table 3: Perceived Affluence of Village Relative to Other Villages in Cornwall

4.3 Levels of Contentment and Perceived Isolation

Villages of this type are often characterised, colloquially, as being excluded from full participation in social and economic life, relative to more urban environments. This is due, in part, to both their geographical position, and their typically inferior technological infrastructure. In spite of its seeming remoteness and seclusion, isolation is not something which is perceived particularly by St Breward's very contented residents. In fact, 81% of residents surveyed reported only 'rarely' or indeed 'never' having

experienced geographical isolation in the past six months. This figure rose when considering feelings of social isolation, with a considerable 89% of respondents reporting having felt this 'rarely' or 'never' in the past six months. One respondent commented on how the villagers do in fact use their isolation to their advantage:

> *It's a very tight village. I think part of that is because of the geography of the place. It's quite an isolated village. You have to travel quite a long way to the nearest town. It's a fair trek. So I think the community here do everything for themselves … I don't get the impression the community feels it; I think they almost use it to their advantage to develop community spirit, to develop community.*

The tables below (Tables 4 and 5) offers a summary of the statistics for both perceived social isolation and perceived geographical isolation. As can be seen from the results, only 18% of respondents reported experiencing the sensation of geographical isolation either 'usually' or 'about half the time', and just 10% with regards to social isolation. For the remainder, these feelings were rare at worst. One of the younger interview respondents commented that isolation was not a problem for her, and that whilst it was always a drive to get to places, there were other means to counter any potential isolation. 'I guess only the drive to places like, you know, Truro and things … but if I want to talk to people I've got the internet, and I'm always on my phone, so I don't find it a problem.'

		Frequency	Valid Percent	Cumulative Percent
Valid	Usually	6	6.0	6.0
	About half the time	12	12.0	18.0
	Rarely	26	26.0	44.0
	Never	55	55.0	99.0
	Don't know	1	1.0	100.0
	Total	100	100.0	

Table 4: Respondents' Perceived Geographical Isolation in St Breward

		Frequency	Valid Percent	Cumulative Percent
Valid	Usually	2	2.0	2.0
	About half the time	8	8.0	10.0
	Rarely	31	31.0	41.0
	Never	58	58.0	99.0
	Don't know	1	1.0	100.0
	Total	100	100.0	

Table 5: Respondents' Perceived Social Isolation in St Breward

Satisfaction levels amongst residents of the village of St Breward are very high. When questioned, 97% of the 100 people surveyed stated that they were either 'satisfied' or 'very satisfied' with their life in the village of St Breward, a great testament to the quality of life experienced by inhabitants of the rural neighbourhood. Just one person in the sample reported dissatisfaction, with one further individual undecided, and one question refusal. Alongside this enquiry regarding their satisfaction with their life in St Breward, respondents were also asked to consider how satisfied they felt with the way in which things were going in their life more generally. Again, satisfaction levels were high, although not quite as impressive as those reported with respect to satisfaction with St Breward village life. We see a drop from 60% to 40% when looking at the proportion of those who are 'very satisfied' with life in St Breward versus life in general respectively. The figure overleaf illustrates the distribution of respondents' satisfaction levels across the two survey questions, and illustrates, perhaps, the extent to which living in the village of St Breward could be deemed uplifting, and how belonging to such a place can function as somewhat of a buffer to the challenges of everyday life, where higher levels of dissatisfaction were reported by the sample. What is clear is that levels of satisfaction with life in St Breward are considerable.

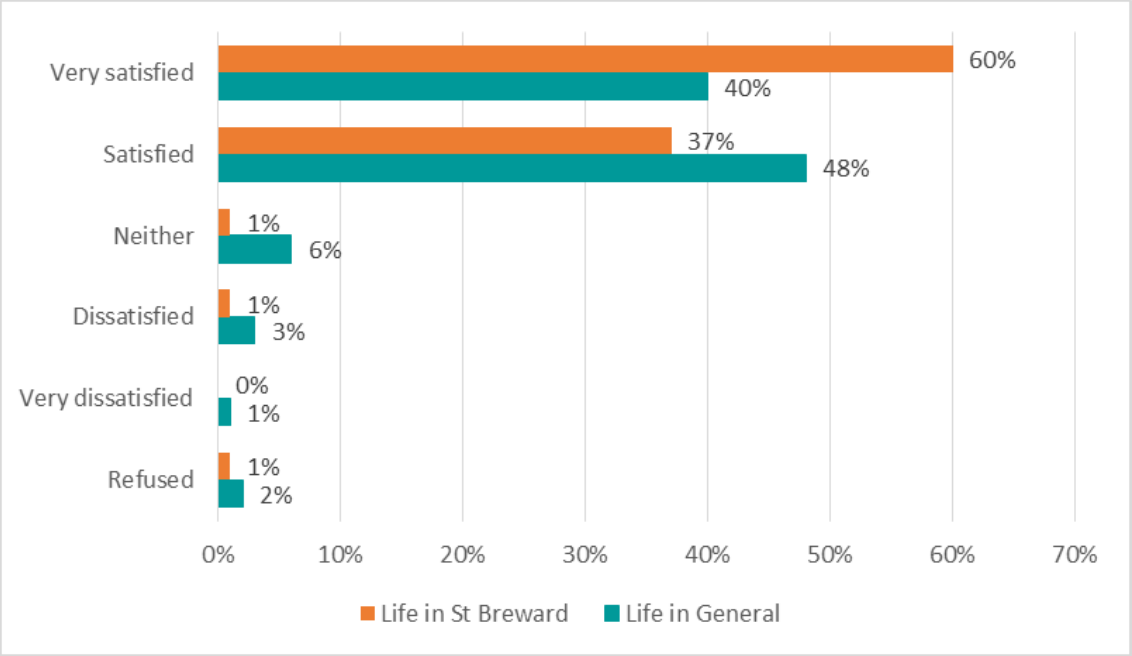


Figure 8: Reported Levels of Satisfaction with (a) Life in St Breward and (b) How Things are Going in Life in General

A considerable 89% of people described the level of community spirit in their village, St Breward, as 'above average' or 'very high', relative to other villages in Cornwall. Clearly, St Breward is a village of contentment where the vast majority of residents are not feeling heavily subjected to isolation, neither in terms of their social groups, nor their links to geographical places further afield, but also one where levels of community spirit are exceptionally high. One resident summed up their view on community spirit in St Breward as follows:

> *There's a film called 'Brigadoon' – it's one of these musicals where a couple of Americans stumble upon this village and they think it's Shangri-La, but actually it only comes alive once every hundred years, and everyone's happy and chatty and nice to each other; it's a bit like Saint Breward really!*

Another respondent described their view of the inclusive nature of the village, talking about the way in which people blend well together, whether they are new to the village or village old-timers, whilst also acknowledging the contribution those who move to the village from outside make to the sustenance of the community groups:

It's got a very strong community spirit … We have as many retired people and incomers … as all the other villages, but somehow, they all seem to accept or adapt the St Breward community spirit, so everybody mixes in. A lot of the village groups would only survive because of the incomers that support them.

And that community warmth and spirit extends to those who are relatively new to the village, also, and not just to those who are St Breward old-timers. One respondent who recently moved to the village and had lived in many places around the world (what locals would term an 'incomer' or someone from 'up-country'), remarked that there was indeed a strong sense of community in St Breward. This respondent felt that 'Cornwall is missing the trend. Communities have been more fragmented and broken up in the south east of England, whereas down here they seem to have been more resilient.'

The table below shows responses in full to the question on perceived levels of community spirit by respondents in St Breward. As is clear from the data, results are overwhelmingly positive; again, a great testament to the quality of life in St Breward experienced by its inhabitants. With satisfaction levels and community spirit ratings so high within this rural Cornish village, it could be said it is indeed the perfect habitat for the implementation of the kind of soft technologies outlined by Simpson (2005) which were discussed earlier, with conditions ripe for the fostering of capacity building, the boosting of high levels of existing social capital, and the development of sustainable community ICT initiatives.

		Frequency	Valid Percent	Cumulative Percent
Valid	Very high	60	60.0	60.0
	Above average	29	29.0	89.0
	Average	9	9.0	98.0
	Below average	1	1.0	99.0
	Don't know	1	1.0	100.0
	Total	100	100.0	

Table 6: Respondents' Rating of Community Spirit Levels in St Breward

The high levels of self-reported satisfaction and perceived community spirit asserted by residents of St Breward is indicative of a strong identification with place. Fullilove describes how people are linked to the environment in which they live through three distinct psychological processes – 'attachment, familiarity and identity' (1996: 1516).

> Place attachment, which parallels, but is distinct from, attachment to person, is a mutual caretaking bond between a person and a beloved place. Familiarity refers to the processes by which people develop cognitive knowledge of their environs. Place identity is concerned with the extraction of a sense of self based on the places in which one passes one's life (Ibid).

Overall, results have indicated that residents of St Breward are strongly connected to the place in which they reside. Strong levels of place attachment, local knowledge and a sense of identity which was very much tied in with the place and community they felt they belonged to were evident at every juncture throughout this research, and results have shown that the sense of community, satisfaction with village life, and consequent place attachment are considerable. Also evident was the way in which the residents could be united in a shared sense of purpose by virtue of living within the same particular place, and consequently identifying with co-residents as members of a community. Whether they liked one another or not was immaterial; they were fellow St Breward folk, and that was enough to unite them as one functional community, even if other commonalities were absent.

4.4 St Breward goes Superfast

Recent times have seen a whole host of services being axed nationwide. In fact, during the time in which fieldwork was conducted in St Breward, local residents lost both their regular community bus service and their internet café, though the latter was due to a change in the personal circumstances of the owners. Furthermore, St Breward's local primary school learned it had lost its deprivation funding. However, alongside this

backdrop of service cuts, St Breward welcomed its top-of-the-line superfast broadband service, putting it ahead of countless other villages around the UK. The service went live in October of 2012, making high-speed fibre optic broadband available to most residents, should they wish to sign up. Of the 100 residents surveyed, 52% were 'fully aware' of a programme to bring superfast broadband to Cornwall, whilst 40% were 'somewhat aware', leaving just 8% who were unaware of the programme. 35% of the sample had already opted to sign up for superfast broadband, with a further 14% definite they would do so, and another 19% stating it was a possibility. At the time of fieldwork, transition to superfast broadband was ongoing, and plans soon got underway to make best use of the newly deployed technology for the local community, evidence of which will be presented later in the thesis.

4.5 Summary

This chapter was intended as an introduction to the village of St Breward, offering some background on both its geographical positioning and what it has to offer to those who reside within it. It addressed the basics of village life, in order to give a flavour of how villagers perceive the village of St Breward; how they feel about it; what it means to them to be a resident of that rural place; and their impression of what it is to be part of the community which the village houses. We move now to the core results chapters, beginning with the *Rural Village Social Networking* chapter, which seeks to delve into the structural organisation of villagers' personal ego networks, in order to decipher how the community functions and operates socially, and also to do the necessary groundwork so that the research can uncover how rural villagers employ technology across these social networks. It is within the next two chapters that the social network analysis method employed in this study comes to life.

I conclude this chapter with an extract from Haythornthwaite (2005: 127), which describes what the network analysis approach can uncover, and highlights why it is a suitable choice in order to address the research questions of this thesis in the investigation which follows:

> The key difference between a network approach and other kinds of evaluations is that it is the interaction between people that matters, rather than what individuals think or do on their own … Moreover, the focus on ties connects pair behaviors to group and larger structures, revealing information about activity at local group levels as well as across wider societal levels.

CHAPTER 5: RURAL VILLAGE SOCIAL NETWORKING

5.1 Neighbourly Social Interaction

The rural village is a locale where neighbours are known to one another. Those who live close by – next-door, around the corner, down the street, in the village – play vital roles in the rural villager's social network. The anonymity and the potential to disassociate from one's neighbours, which are somewhat readily granted in, say, a suburban residential zone or a larger town, do not exist under the rural village condition in the same way. The geography of the place, transport networks, and the lower population density mean one is more often situated in close proximity to one's fellow villagers and, indeed, one's more immediate neighbours. This research explored, via survey, the extent to which respondents claim to know their neighbours and, in the more detailed enquiry via social network analysis, the degree to which neighbours actually feature within respondents' self-reported ego networks. In the case of St Breward, not a single respondent reported not knowing any neighbours who live close to them, a noteworthy feature of the village, and one which highlights the degree of neighbourliness and social capital which continue to thrive within this rural Cornish village. One respondent did not have any neighbours living close by, but for all others, familiarity with neighbours was abundant. 50% claimed to know all of them, 31% most of them, and 18% some of them (summarised in Table 7 below).

	Frequency	Valid Percent	Cumulative Percent
Yes, know all of them	50	50.0	50.0
Yes, know most of them	31	31.0	81.0
Yes, know only some of them	18	18.0	99.0
Do not have neighbours close by	1	1.0	100.0
Total	100	100.0	

Table 7: Do you Know Most of the Neighbours who Live Close to you?

17% of all social ties identified by respondents (267 alters) were found to be neighbours, a considerable proportion of the sample's egocentric networks. Although, 'neighbour' was not always the primary connection type attributed to all of these ties. For instance, by way of an example, in some cases, alters were labelled as friends first and foremost and as neighbours second. But, overall, this illustrates the degree to which neighbours form part of residents' lives within the rural setting, acting as people whom they can discuss things with, rely upon and socialise with, amongst other functions. As described by one interviewee, however, it is not just *immediate* neighbours which count in the rural village: 'But it's not just either side; you know the neighbours all the way … They're all part of your neighbours.' This same respondent recalled an incident where they relied upon their neighbours in St Breward to assist them in their time of need:

> *The neighbours on the left of me – they're brilliant neighbours, they're really lovely, you can ask them anything. We're not in each other's' pockets, but you can ask them anything. I phoned them from the Scottish Highlands before. I phoned X and told her I'd left my favourite jeans behind and I needed them, so she packaged them up and posted them to me. And they arrived within a couple of days in the Scottish Highlands. They're really good neighbours.*

Overall there was a sense conveyed of a place in which people look out for one another, and neighbours are known and valued. 'We're very staid in our ways. We've got a community here and it speaks for itself … We've got neighbours here, we don't live in each other's' pockets, but we keep an eye.'

Approximately 80% of those with neighbours close by reported having a face-to-face conversation with them on at least a weekly basis over the past six months. In fact, around 16% reported doing so on a daily basis, and 25% most days of the week. Telephone calls were less frequent, with approximately 19% having at least a weekly telephone conversation, and 37.4% at least a monthly call. Email exchanges were less

frequent still, with only around 9% doing so weekly, and nearly 72% never doing so at all. These figures in full are summarised for the different modes of interaction below, in tables eight thru ten.

So, harking back to the earlier review of the literature, which criticised the lack of focus on neighbouring within rural communities, we see that Lev-Wiesel's (2003) view that within rural place, the quality and frequency of neighbourly social interaction is at a substantial level relative to other more urban zones holds true within St Breward. With 17% of ego network alters identified as neighbours, and each resident with nearby neighbours reporting that they know at least some of them (81% all or most of them), we see that this is not a village where people remain anonymous behind closed doors. It is a place of neighbourliness, where people look out for one another and help one another out when needed. They interact and mingle locally with those in close geographical proximity to them, and do so primarily via face-to-face modes of communication, typically on at least a weekly basis.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Every day	16	16.0	16.2	16.2
	Most days	25	25.0	25.3	41.4
	Few times a week	21	21.0	21.2	62.6
	Weekly	17	17.0	17.2	79.8
	Every two weeks	8	8.0	8.1	87.9
	Monthly	7	7.0	7.1	94.9
	Less than monthly	4	4.0	4.0	99.0
	Never	1	1.0	1.0	100.0
	Total	99	99.0	100.0	
Missing	No neighbours	1	1.0		
Total		100	100.0		

Table 8: Face-to-Face Conversation with Neighbour Known by Name in Last 6 Months

		Frequency	Percent	Valid Percent	Cumulative Percent
	Every day	3	3.0	3.0	3.0
	Most days	4	4.0	4.0	7.1
	Few times a week	6	6.0	6.1	13.1
	Weekly	6	6.0	6.1	19.2
	Every two weeks	7	7.0	7.1	26.3
	Monthly	11	11.0	11.1	37.4
	Less than monthly	29	29.0	29.3	66.7
	Never	33	33.0	33.3	100.0
	Total	99	99.0	100.0	
Missing	No neighbours	1	1.0		
Total		100	100.0		

Table 9: Telephone Conversation with Neighbour Known by Name in Last 6 Months

		Frequency	Percent	Valid Percent	Cumulative Percent
	Most days	1	1.0	1.0	1.0
	Few times a week	4	4.0	4.0	5.1
	Weekly	4	4.0	4.0	9.1
	Every two weeks	2	2.0	2.0	11.1
	Monthly	2	2.0	2.0	13.1
	Less than monthly	15	15.0	15.2	28.3
	Never	71	71.0	71.7	100.0
	Total	99	99.0	100.0	
Missing	No neighbours	1	1.0		
Total		100	100.0		

Table 10: Email Exchange with Neighbour Known by Name in Last 6 Months

What we see in St Breward, a rural Cornish village with a population of less than 1,000, is a locale where face-to-face communication with neighbours dominates, and neighbourly ties are indeed prominent. Email has not yet infiltrated these face-to-face relationships, largely confined to less than monthly exchanges, if at all. The preference for face-to-face neighbourly interactions, supplemented with the occasional landline telephone call, is clear. One respondent noted:

> *I like socialising with my friends, and I don't think I would only talk to them on email. That would never happen, but then again, if I was incapacitated, I might only be able to do that; I might be grateful for that.*

Another respondent noted in their interaction diary an example of the kinds of informal face-to-face chats which had occurred in their day, typical of the kinds of everyday exchanges occurring in the open public village spaces, which make up part of village social life:

> *08:55 – Outside St Breward Stores, face-to-face conversation with X, joking about domestic matters/ men*

One interviewee also described their impression of the village shop as a social place in the village, showing how these places become hubs of interaction where face-to-face exchanges are carried out frequently over the course of village life:

> *The fact is that, during the week, all the mums and the people that are retired meet in the shop, do their chatting outside; it's quite sociable; it's where people disseminate news, where they meet each other; weekends – the dads that are working or the people that are working, they'll come in … it helps community interaction.*

Results have shown the great levels of community spirit present in St Breward, and the high levels of satisfaction reported by its residents. Data just presented here has also illustrated the high levels of neighbourliness present within the village. Lev-Wiesel (2003), who described how 'a sense of belonging, solidarity, rootedness, and social ties' were higher amongst rural community dwellers than urban dwellers, has also described how community spirit and a sense of belonging (a 'psychological sense of community') is interdependent with neighbourliness:

> Clearly, affective bonds are interrelated with social interaction, social support, membership and shared values, which are all components of a psychological sense of community. For instance, when people feel a sense of community they are more apt to interact with neighbours. Simultaneously, the positive face-to-

> face contact of neighbouring continues to enhance the shared emotional connection that maintains a sense of community (Ibid: 334).

Cornwell et al. (2008) have found that that older people report smaller social networks and decreased levels of closeness with people within their networks. Again, this is something which the rural village, in this case, has been seen to overcome, illustrating that in the rural context, which is traditionally predicated to a more aged population, as is the case in St Breward also, older people continue to enjoy networks of size comparable to their younger co-residents. The rural village condition seems to have safeguarded against this tendency for older people to report smaller networks. The table below summaries the average number of ties reported within each age category.

Age group	16-29	30-44	45-59	60+
Number of alters	160	285	455	718
Number of egos	12	16	30	42
Average alters per ego	13.33	17.81	15.17	17.10

Table 11: Average Number of Alters per Ego by Age Group

There was little evidence in St Breward of people feeling completely disconnected from those around them in the digital age; quite the contrary – they know one another, and not only that, they engage with one another on a frequent and face-to-face basis. They possess a sense of community, which is reinforced and sustained through ongoing reciprocity and neighbourliness. However, these person-to-person relationships with one's neighbours are but one component of the villagers' personal ego networks. We move, now, to examine the personal networks in their entirety, establishing how far they reach geographically, and the different attributes of those 1,618 reported social ties which have been investigated.

5.2 The Geographical Reach of Social Ties

The degree to which rural communities network with those who are local and geographically close to them versus those who are further away and more distant is of considerable sociological interest. It is wrapped up (though not neatly) in the debate around bonding and bridging social capital. Bonding social capital 'reinforces exclusive identities and homogenous groups' (Putnam, 2000: 22), whereas bridging social capital is inclusive and concerned with the making of links with people from networks outside of one's own network of strong ties to broaden horizons and access people from alternate walks of life. Within the rural village of St Breward, where community spirit, neighbourliness and village life satisfaction are at substantial levels, one can assert that residents experience a degree of bonding social capital at the macro community level by virtue of their membership of that community. The sense of belonging and attachment to place present in St Breward means local people are inevitably bonded, and consequently garnering this type of bonding social capital in their locale. Access to a wider range of bridging social capital ties and opportunities would logically grow concurrently with greater levels of access to, and contact with, networks outside of one's own village or in the online realm.

The idea that people socialise more with people outside of their own neighbourhood setting than within it is generally accepted. Revisiting the literature to recap, we see that Wellman (1996) describes how 'Since local ties only make up a minority of people's active ties, network analysts have argued for decades that the neighborhood is not very important' (1996: 347). Similarly, Wellman and Hampton have stated that 'Communities are clearly networks and not neatly organized into little neighborhood boxes. People usually have more friends outside their neighborhood than within it: indeed, many

people have more ties outside their metropolitan areas than within it' (1999: 649). The research presented here in this thesis suggests that in the case of the rural village, conditions are somewhat different. The general assumption outlined above was not observed, and the largest share of ego network ties was in fact found to lie at the local level, within the bounds of the village of St Breward. Considering the 100 people (egos) who completed the social network analysis, 50.6% of the 1,618 social ties (alters) identified were found to reside at the village level, running contrary to the notion that people network more with people beyond their own neighbourhoods than within them. 22.7% of alters were identified to be based more than 100 miles away, and the remaining 26.7% were situated further away than the village, but within a 100 mile radius of the village.

The geographical dispersion of all alters (1,618 in total) identified by respondents is shown in Figure 9 overleaf. The utilisation of the social network analysis method in this research allowed for all social ties elicited to be compiled and subsequently visualised on a geographical pane, in order to show the way in which villagers' ties disperse through physical space. The scatterplot has had jitter applied in order to aid data visualisation and highlight density where it is present. Lines have been added to make clear the distinction between the three geographical levels – the confines of the village; beyond the village, but within a 100 mile radius; and more than 100 miles away. One can see the heavier density of ties clustered at the village level, where 50.6% of the total active social ties elicited from egos reside.

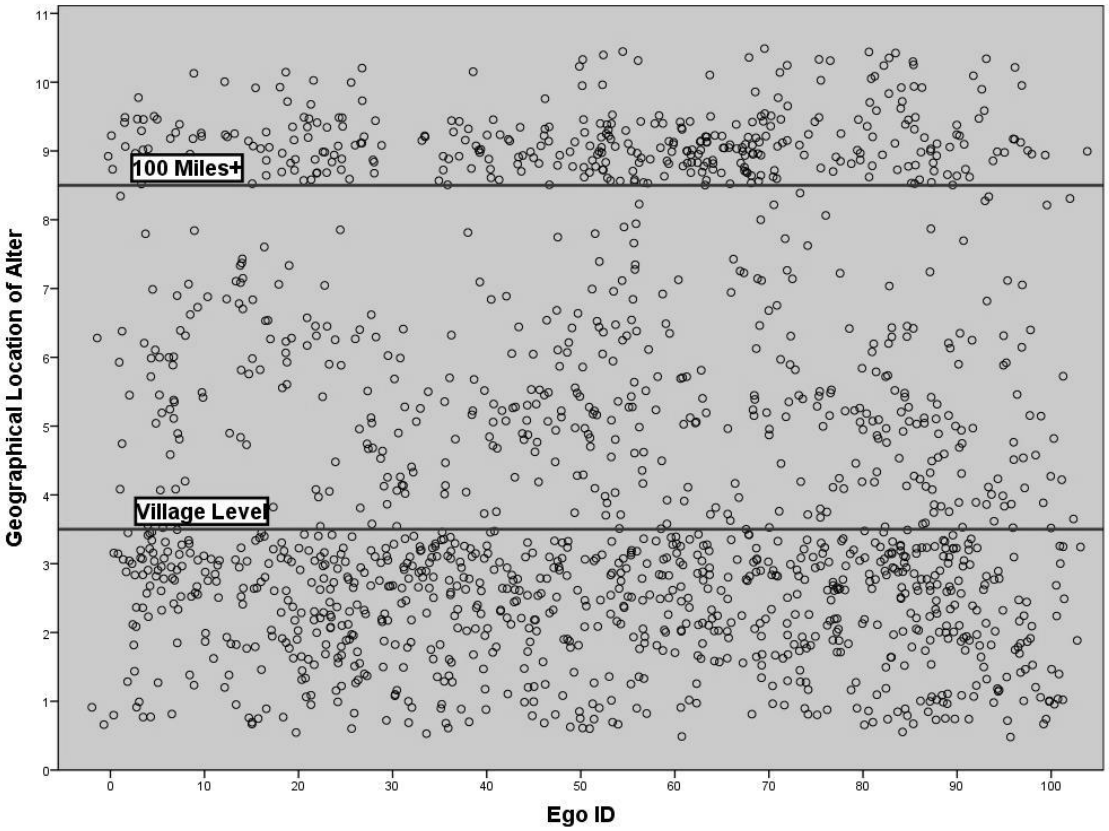


Figure 9: Geographical Dispersion of Alters

The way is which results have emerged in this study, showing the extent to which local networking occurs under the rural village condition, illustrates how the rural village has a different social structure and an alternate social operating system to its urban counterparts. Local exchanges with those in closest geographical proximity occur in abundance, and make the way in which rural villagers engage with the social world around them different and unique to rural place. So whilst the focus with the deployment of new technologies is so often concerned with the possibilities it affords for wider networking and the elimination of distance barriers, within the rural village, locality and local networking remain important and relevant; and, hence, worthy of consideration in the planned deployment of ICTs in rural domains. The question becomes not one just of linking the rural village to locales further afield via the use of high-technology, but also one of how that high-technology can be made applicable

within the rural setting, too, in order to also facilitate the enhancement of local networking, something which is important to, and sustained by, the social operations of the rural village place. Whilst ensuring rural villages are not left behind, and enabling links to opportunities associated with the global networked world are indeed crucial, so, too, is ensuring that ICT efforts are sensitive to, and tailored to cater for, the more local tendencies of rural place residents. An all-inclusive policy approach to rural zones will consider not just the joining up of communities and the abolition of physical space barriers, but also look at how ICTs can be made applicable to the local rural setting, harnessed as a community asset and, hence, used for positive social transformation at both a local level and beyond.

Rural villages operate on a different level socially to more urban areas, both due to emergent rural preferences, but also due to the sheer geography and demographic characteristics of the place. As an interview respondent put it:

> *A small community throws you together. You rub shoulders with people you wouldn't normally. It's the dynamics of small communities. You socialise with people you wouldn't normally socialise with. In the big wider world that wouldn't happen. I'm sociable to people I don't like.*

This particular quote above illustrates perfectly how this sense of community, where residents are united by a shared sense of place identity and social co-existence, can also be open to tension and conflict, and that communities find their own way of functionally co-existing when brought together by rural geography.

> *St Breward is a small community, and we're only successful as a community if we all work together. But we all have different opinions and different strengths, different views. So you have to respect somebody being different, and although you mightn't be best pals with them, you've got to be able to work with them.*

These results around the geographical dispersion of network ties indicate that in the case of the rural village, local networking takes precedence, and the extent to which rural villagers network locally comes to relevance when seeking to establish how technology can be applied and become useful within such a setting. Whilst superfast broadband is often touted as something which can create greater links with those further afield, in the rural setting, of equal, if not greater, importance is the way in which it can be harnessed to enhance and sustain links more locally. Local networking in the rural setting is a lived reality, as well as something which residents wish to sustain. It is a way of life, and any technology which enters the realm should afford these communities that sensitivity, both for the benefit of the community and to foster the successful adoption of said technology. Results have shown that patterns of networking are different in the rural setting, and, hence, specificities of place need due consideration in order for both community and industry advantage to be gained. The table below offers a numerical summary of the complete geographical distribution of alters.

	Frequency	Valid Percent	Cumulative Percent
Same house	166	10.3	10.3
Same street	259	16.0	26.3
Village	394	24.4	50.6
1-5 miles	98	6.1	56.7
6-10 miles	152	9.4	66.1
11-25 miles	104	6.4	72.5
26-50 miles	54	3.3	75.8
51-100 miles	24	1.5	77.3
101+ miles	308	19.0	96.4
Abroad	59	3.6	100.0
Total	**1,618**	**100.0**	

Table 12: Summary of Geographical Distribution of Alters

5.3 Strength of Ego/ Alter Ties

Whilst results have demonstrated that 50.6% of all ties identified are based at the local village level, it is not just their geographical position but also the tie strength and quality which is of importance and worthy of scrutiny. To have an abundance of local ties may be seen as a positive social resource. However, the extent to which this is a source of social support will depend greatly on how close those relationships are; in essence – how strong or weak the social ties are. Weak ties – 'those with whom we are weakly tied – people we know a bit but not as close friends – travel in different social circles from us, and thus are more likely to have different experiences from us and access to different information, resources, and contacts' (Haythornthwaite, 2005: 127). The main feature of strong ties, 'our close friends and coworkers, is their willingness to work with us, sharing what information and resources they have, and access to the contacts they know' (Ibid). Prior to examining the strength of the 1,618 social ties elicited, the table below offers a summary of the types of connection which were identified. Please note this is the primary connection type listed by the ego, so, for instance, those who are listed as a 'friend' may also perform a secondary function such as 'neighbour' identified by the ego. What this table shows is the first and foremost nature of the relationship identified by the ego, regardless of any dual/ triple/ quadruple function they may perform. As can be seen from the data, friends and family take primacy, making up approximately 96% of the sample of alters. Family alone accounts for around 49% of all social ties identified by egos, illustrating the importance and presence of familial ties in the lives of rural village egos.

	Frequency	Valid Percent
Friend	759	46.9%
Other familial tie	275	17.0%
Child	163	10.1%
Neighbour	99	6.1%
Brother/ Sister/ Sibling	98	6.1%
Spouse/ Partner	84	5.2%
Parent	73	4.5%
Acquaintance	30	1.9%
Co-worker	20	1.2%
Member of group	8	0.5%
Internet/ Online friend	8	0.5%
Advisor	1	0.1%
Total	**1,618**	**100%**

Table 13: Type of Alter Tie (Primary Function Stated)

Overall, the strength of the 1,618 social relationships identified is considerable. As can be seen from the figure below, approximately 65% of ties were identifed as either a four or a five on a five point relationship strength scale, with just under three per cent described as not at all close. Just over 22% hovered in the middle ground as average strength ties. So weaker ties (a one or a two) constitute nearly 13% of all alters; weaker ties, but relevant ties nonetheless, and ties which egos feel constitute a worthwhile part of their functioning social networks as a whole.

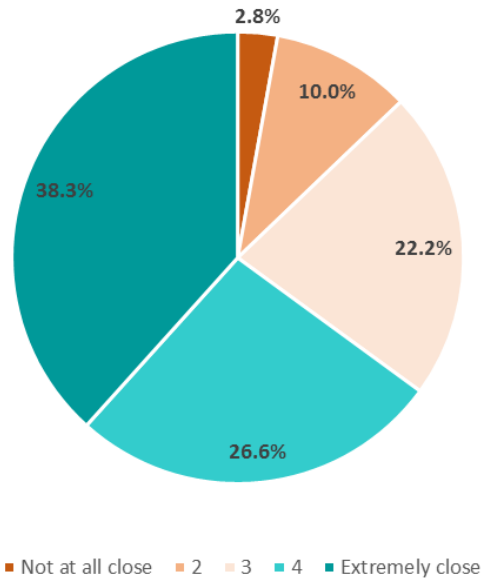


Figure 10: Strength of 1,618 Social Ties Identified by 100 Egos

In terms of how this strength measure varies across connection type, the following table offers a summary. Please note that in some instances in the table below, sample numbers will be too small to draw conclusions, but these have been left in for completion. Not surprisingly, tie strength is at its greatest amongst spouses/ partners, children and parents, with more than 90% 'extremely close' ties in all cases. Other types of familial tie were most often a four or a five; friends most often a three or a four; and neighbours most often a two or a three.

	Friend	Child	Spouse/ Partner	Brother/ Sister/ Sibling	Other familial tie	Parent	Co-worker	Member of group	Neighbour	Advisor	Internet/ Online friend	Acquaintance	
Not at all close	13	0	0	2	3	0	0	0	16	0	0	12	46
	1.7%	0.0%	0.0%	2.0%	1.1%	0.0%	0.0%	0.0%	16.2%	0.0%	0.0%	40.0%	2.8%
2	99	0	0	1	4	0	2	7	35	0	6	8	162
	13.0%	0.0%	0.0%	1.0%	1.5%	0.0%	10.0%	87.5%	35.4%	0.0%	75.0%	26.7%	10.0%
3	261	3	2	6	28	1	11	1	35	1	2	8	359
	34.4%	1.8%	2.4%	6.1%	10.2%	1.4%	55.0%	12.5%	35.4%	100.0%	25.0%	26.7%	22.2%
4	270	5	0	29	106	6	2	0	11	0	0	2	431
	35.6%	3.1%	0.0%	29.6%	38.5%	8.2%	10.0%	0.0%	11.1%	0.0%	0.0%	6.7%	26.6%
Extremely close	116	155	82	60	134	66	5	0	2	0	0	0	620
	15.3%	95.1%	97.6%	61.2%	48.7%	90.4%	25.0%	0.0%	2.0%	0.0%	0.0%	0.0%	38.3%
Total	**759**	**163**	**84**	**98**	**275**	**73**	**20**	**8**	**99**	**1**	**8**	**30**	**1,618**
	100%	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 14: Strength of Ties by Connection Type

Wellman (1996) asserts that despite substantial *contact* with local ties, these local ties constitute just a small part of one's strong, active and influential ties in one's ego network. Whilst this doctoral research has shown that more distant ties are indeed strong and close ties (see Figure 11 overleaf), it cannot be said that the same is not true of more local ties. On a scale of one to five, with one being not at all close and five being extremely close, egos rated 81.4% of local village ties at least a three, compared with 90% of those beyond the village but within a 100 mile radius, and 96.5% of those living more than 100 miles away. So whilst there are fractionally more 'weak' ties within the confines of the village setting, overall, the strength of relationships within the village is

considerable. If we consider just points four and five on the scale, the more distant ties (100 miles plus away) see a distinct advantage (85% versus 56% within the village); however, again, the level of 'extremely close' ties within the village remains considerable. So whilst we can clearly see that the majority of ties are local ties, upon closer inspection we find that the quality of those ties is also of significance. This illustrates further how social networking in the rural village place is to be seen as distinct from other locales, following different patterns of social organisation, and drawing on support networks which are differentially placed, geographically, from those of their urban counterparts. In the case of the rural village, local ties constitue a large component of one's strong, active and influential ties in one's ego network. So whilst we do see weak ties present at the local level as well, it can be said, overall, that the large share of ties found at the local village level are not just rich in quantity, but also rich in quality, with 81.4% of local village ties scoring at least a three on a five point closeness scale. Figure 11 below summarises results across this measure, looking at the strength composition of social ties, aggregated by geographical location of alters.

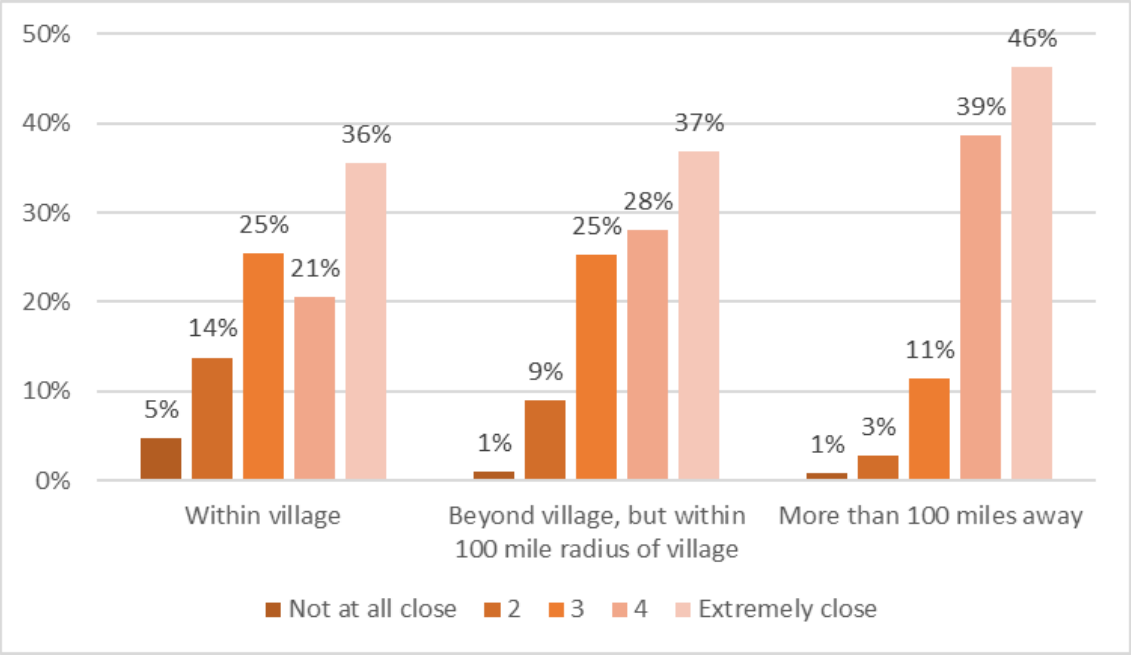


Figure 11: Strength of Ego/ Alter Relationship by Alter Location

Whilst social resource may no longer be bound by geography in a network society, in the rural village, residents continue to lean heavily on those more local to them, drawing upon them for social support and developing relationships with villagers, the strength of which is comparable to more geographically distant immediate family members. So whilst Rainie and Wellman's (2012) new social operating system, 'networked individualism', describes a condition where we can dip into an array of networks of social support, maintaining a loose network not so confined by the restrictions and limitations of tightly knit groups; in the rural village, those tightly knit groups and strong local affiliations continue to hold great significance and constitute a significant portion of the egos' networks.

These findings further reinforce the importance of local village social networking within rural areas, and just how prevalent it is. Village egos acknowledged their local rural ties in the formation of their personal ego networks, but they also identified a large share of them as being 'close' ties; ties which they interact with and can rely upon.

5.4 Duration of Ego/ Alter Relationships

Another aspect of the ego/ alter relationships explored, in order to better understand their composition and functioning, is the duration of the relationships identified by egos. It was possible to ascertain, with the introduction of an additional variable measuring duration of tie, the degree to which social ties identified were longstanding ties, or indeed more recent connections. Results can be viewed in Table 15 overleaf, and illustrate that just 8.5% of social ties identified are in their infancy at two years or less. 34.7% are longstanding ties of more than 20 years, and 10.5% of alters have been known for the entirety of egos' lives. Overall, we see that 81.7% of social ties have been active for six or more years in duration. This further analysis makes clear, again, that many of

the ties in the 1,618 total are of great significance to the 100 egos taking part in the social network analysis, featuring in their lives in a longstanding capacity. 87.1% of alters were described as a three or more on the five point closeness scale, and 81.7% of ties have been known to egos for at least six years. So the strong ties are plentiful in this study, alongside the weaker, lesser known, more emotionally distant ties also identified.

		Frequency	Valid Percent	Cumulative Percent
Valid	Less than a year	47	2.9	2.9
	1-2 years	90	5.6	8.5
	3-5 years	105	6.5	15.0
	3-5 years	54	3.3	18.3
	6-10 years	301	18.6	36.9
	11-20 years	289	17.9	54.8
	More than 20 years	562	34.7	89.5
	All ego's life	170	10.5	100.0
	Total	1618	100.0	

Table 15: Duration of Ego/ Alter Social Tie

These results have also been examined using the same filter of geographical location as previously, in order to illustrate the difference across local ties and ties further afield in terms of the duration of the relationships, and may be viewed overleaf in Figures 12 thru 14. Results clearly show, that for each of the three geographical divisions, the tendency for the majority of ties to have been known for six plus years holds true, with scores of 78.5%, 77.6% and 93.7% respectively as one moves further out geographically. It is clear from results that social ties held with those more than 100 miles away are longstanding ties. A considerable 76.3% of ties more than 100 miles away are enduring ties of more than 20 years in duration – contacts from childhood, associates from places once lived in during different phases of life, and family members spreading their wings and residing further afield. 32.2% of local village ties had been known for more than 20 years, and 43.5% of those who lived outside the village but within a 100 mile radius were the same.

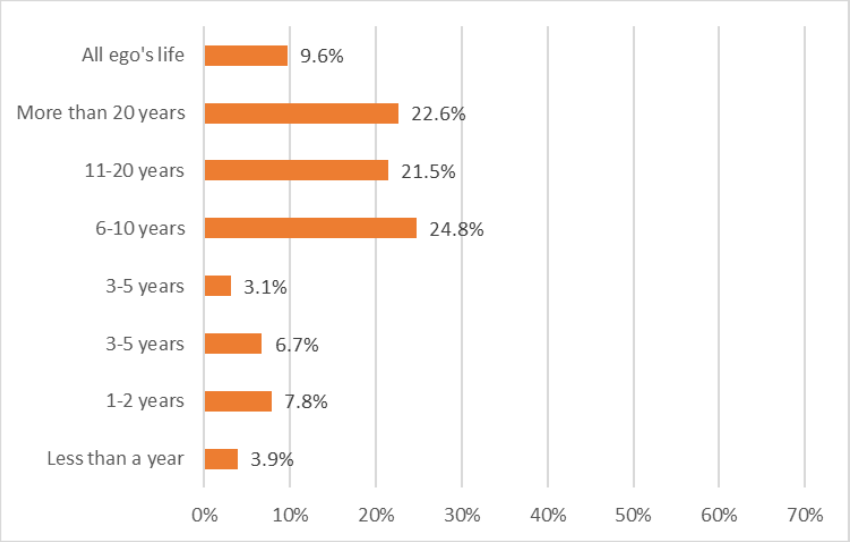


Figure 12: Duration of Ego Relationships with Village-based Alters

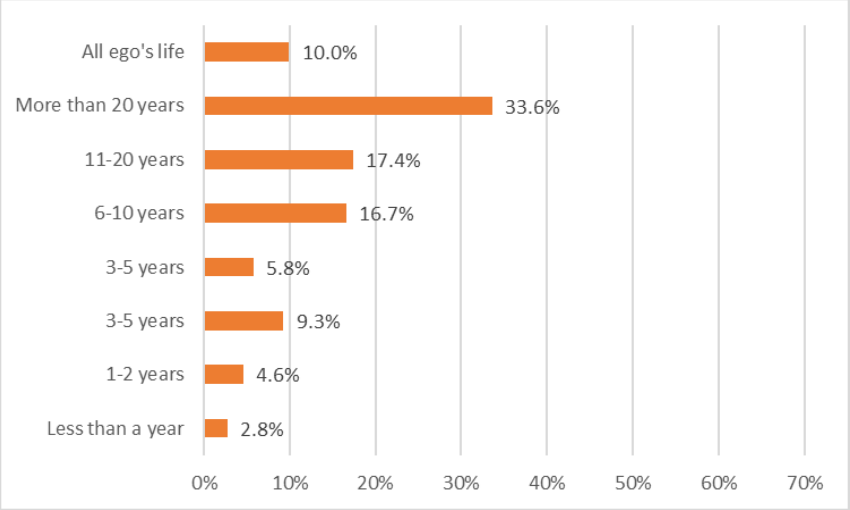


Figure 13: Duration of Ego Relationships with Alters based beyond the Village, but within 100 Mile Radius

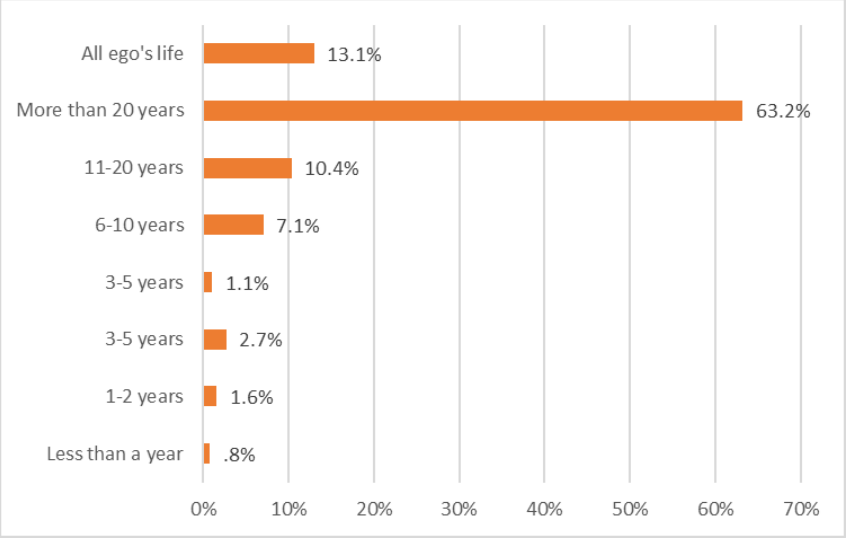


Figure 14: Duration of Ego Relationships with Alters based more than 100 Miles outside Village

5.5 Frequency of Ego/ Alter Contact

Also examined, as a measure of how active the social ties identified are, is the frequency of contact (by any means, be that face-to-face, via ICTs, by post, etc.) with all alters identified. Whilst one can easily list ties within one's network, and appear rich in social capital, with a varied and wide–reaching fount of social support to draw upon, the extent to which this is true will vary depending on how present those alters actually are in the lives of egos in reality. In essence – how frequently do they interact with them?; do they share exchanges daily, weekly, and so on? Respondents were asked to identify the level of contact they tend to have, on average, with each of their individual social ties. Results show that interaction is most frequent at the local level, with exchanges between 57.3% of social ties at the local level occurring several times a week or more, versus 33.3% and 17.2% respectively for those outside the village, but within 100 miles; and those more than 100 miles away. These figures shift to 79.9%, 57.6% and 39.2% respectively when we consider contact occurring at least once a week. Tables 15 thru 17 overleaf summarise results across this measure, looking at the frequency of contact amongst social ties in each of the three geographical location categories, and showing how, as one moves further away from the village, the frequency of contact reduces.

As we can see, ties at the local village level take the majority share of ties overall (50.6%) in residents combined ego networks. And upon further examination of the attributes of all those ties identified, we see that they are not only abundant at the local level, but that these local ties residing within the village of St Breward are also strong in character, longstanding in duration, and active in terms of frequency of contact. So the notions that people network more outside of their village than within it, and that local ties constitute just a small part of one's strong, active and influential ties do not hold true within the rural village setting.

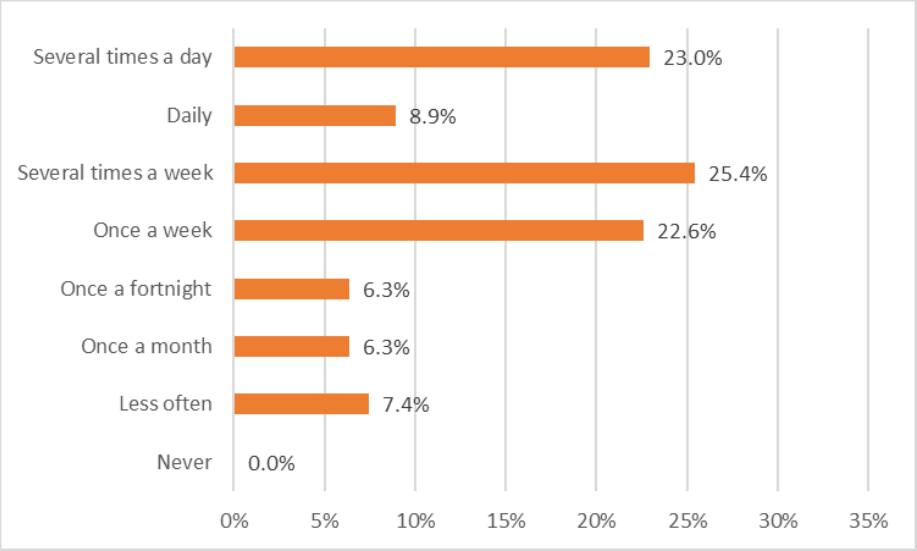


Figure 15: Frequency of Ego Contact with Village Alters

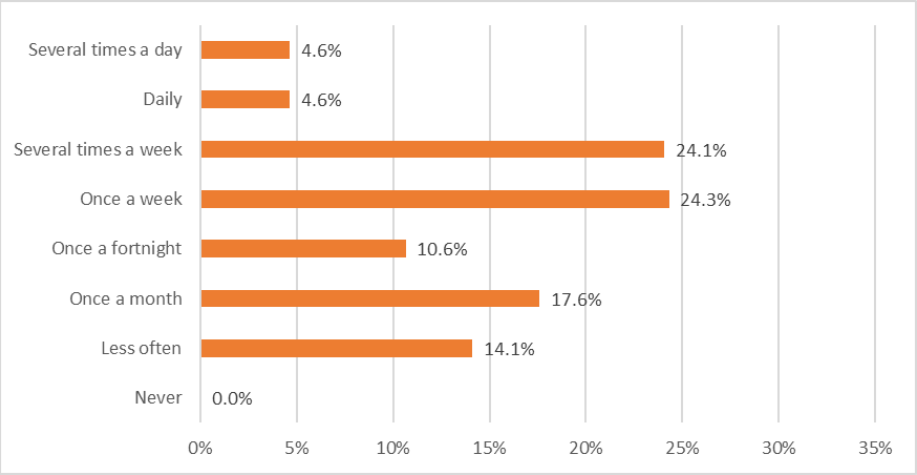


Figure 16: Frequency of Ego Contact with Alters based beyond the Village, but within 100 Mile Radius

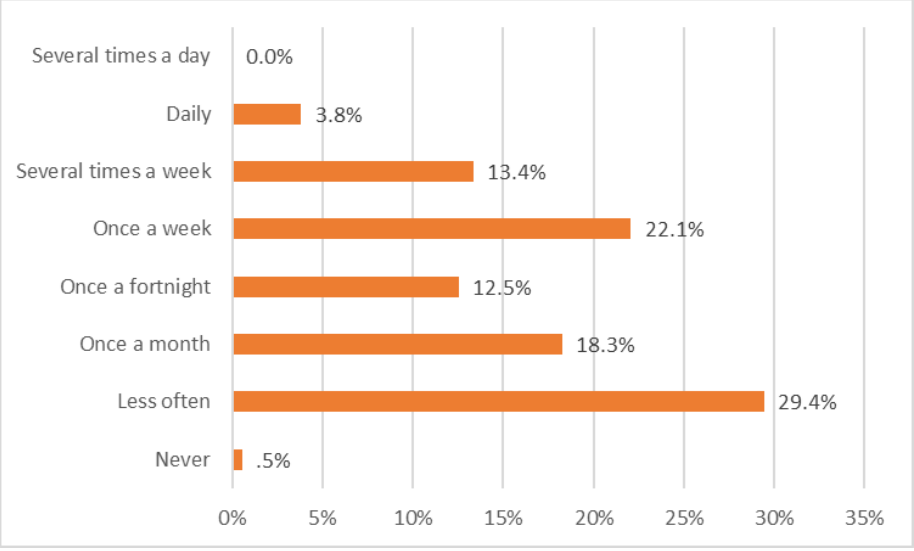


Figure 17: Frequency of Ego Contact with Alters based more than 100 Miles outside Village

5.6 Typologies of Village Resident: The Village Gatekeeper

A review of the literature pointed to the importance of key actors residing within communities, residents who can be powerful social organising forces, and potentially act as key players in allowing community projects to gain traction, and to reach wider members of the community. O'Brien et al. refer to 'community leaders' (1998), and the great benefits which can come about when relationships between these community leaders are allowed to develop, with patience, over time. They write of the 'specific types of social network ties between community leaders which facilitate communication and working collectively to accomplish community goals' (Ibid: 109). Ashmore et al. speak of local 'digital champions' within communities, those individuals who 'seek to promote the community broadband agenda' (2017: 419). This doctoral research was mindful of this possibility, knowing that, over the course of the research, certain key players may emerge, and that it would be possible to explore the properties of their ego networks, as well as visualise them in a sociogram – a graphical representation of one's social ties.

Throughout the research, clear typologies of villagers did in fact emerge. It became evident, through social network analysis; through time spent observing village proceedings; and via qualitative interviews, that there were a number of key village players (here, termed village 'gatekeepers') who were essential to village proceedings; gatekeepers who filled these roles of community leaders and digital champions identified in the literature. Gatekeepers were found to be those local people who have been resident in the village for some time; possess a substantial amount of local knowledge; are well connected to others in the village; hold a considerable degree of local influence; and are involved with a number of significant village groups and/ or activities. These people were heavily tied up in village events and village space

management, and possessed dense ego networks, with a notable degree of interconnected ties. Figure 18 overleaf depicts a fully compiled ego network of a village gatekeeper, characterised by a dense web of reciprocal interconnected ties. Even their ties from further afield geographically were found to be connected to their local ties, showing the degree to which some villagers choose to blend their local and more distant social connections, bringing them together when geography allows. In the case of the gatekeeper's network, the hands of friendship of the ego's local ties are often extended to the ego's distant ties, resulting in dense interconnected networks, irrespective of place. One rural village gatekeeper has summed up their local knowledge, and the degree of influence they possess within the community:

> *Different people in different spheres make up a whole … If I have a group of friends, and if we're going to do something, not socially necessarily, but to help the village or help somebody, we know we'll call on different people for different things.*

Another gatekeeper described how 'It just all works very well together, and most people, if you ask them, will do something, so you just have to have enough front to ask them.' Others also alluded to the gatekeepers over the course of their interviews, some of whom were referred to as 'old boys' or 'village elders', who commanded a certain amount of respect within the community and were heavily involved in its proceedings. The few that do the lion's share of the community work were oft mentioned:

> *There's a lot of people in the village that do loads. And there's a few people in the village that would … what's the word … not abuse it. There are some people in the village who get to go to a lot of things because there's a group of people in the village that do a lot.*

Speaking about the carnival committee (on which several gatekeepers sit), one respondent noted that 'They all know one another. It's like a little mini network within

the village. Through that, they know a lot of what's going on … Half the parish council is on it!'

Another respondent, themselves a gatekeeper, described this phenomenon from their point of view in a number of instances, illustrating the attitude the gatekeepers (or as they termed them – doers) possess, and the drive to get things done which they radiate:

> *If you want things to get done in the village, you have to do it yourself.*
>
> *You mustn't be complacent; you've got to fight for what you've got.*
>
> *There's a few people you'd go to in the village if you wanted something doing, or help … There are people that are doers … What communities struggle with is having somebody to organise it, and that's where we're really good … X is the disseminator of information … You just need somebody to set things rolling.*

This same respondent also outlined how receptive the wider community is to the role of the gatekeeper, describing how they will rally behind the efforts of the gatekeeper, provided the gatekeeper has taken the lead and done the organising groundwork:

> *St Breward is a very good community. You've just got to give the people a lead. It doesn't matter who it is. And if they agree, they'll support it.*

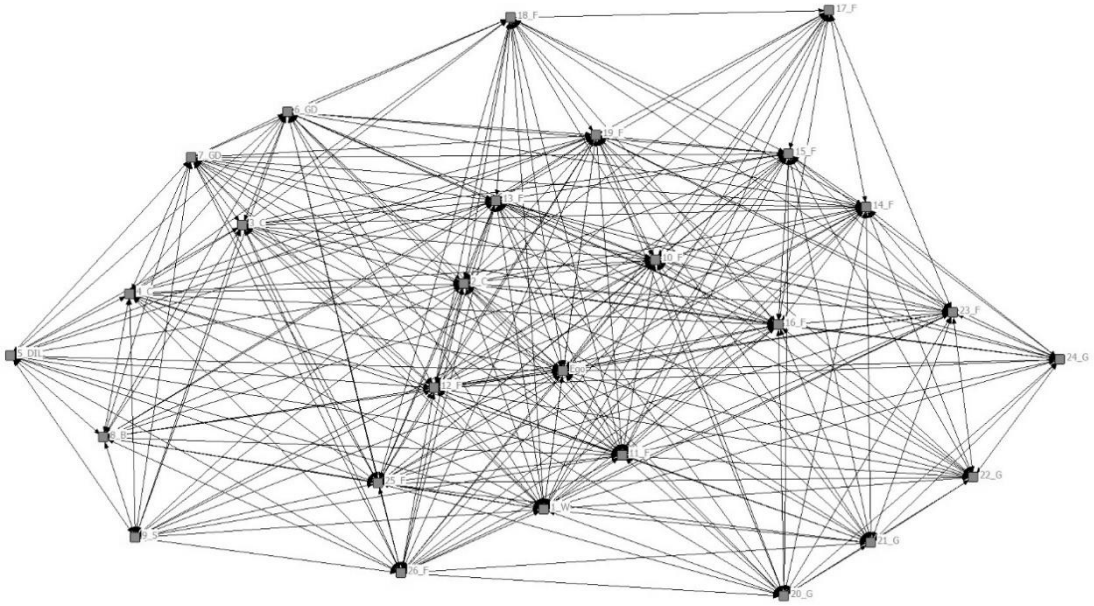


Figure 18: Ego Network of the Gatekeeper

Overall, village gatekeepers were found to be rich in social capital, feeling rooted in their communities and connected to its members, with a strong sense of belonging, and their own social ties highly interconnected and enmeshed. They were motivated to participate in community projects, and keen to advance the community agenda overall. As asserted by Simpson, 'High levels of social capital are usually indicated by community members who feel a strong sense of belonging, a willingness to participate in community activities, and a commitment to actively work towards the future well-being of their community' (2005: 103). This was found to be overwhelmingly true of the rural village gatekeepers identified in St Breward.

Identifying these gatekeepers is key to the recent European policy agenda focussing on smart villages.

> Smart villages begin with local people coming together to develop a strategy around local assets and aspirations. We need to invest in these people, their ideas and the much-needed infrastructure and capacity building. This is our role as policy-makers – we need to make sure the right tools are available (Foreword by Hogan in European Network for Rural Development, 2018).

The gatekeepers within the rural village community are where the beginnings of this capacity building work rest. Investing in them and their ideas, and placing value on their local social and spatial knowledge, and on their insight into the local village's community agenda, will yield results based on interventions they can inform, which are tailored, fully applicable, and, crucially, lead to sustainable use of technology.

What became clear through the course of the research is the extent to which village gatekeepers are a critical component of proceedings in order to reach others and allow projects/ events to accelerate, reach the wider community, and succeed. This was true also of the rollout of superfast broadband technology. With gatekeepers on board, the

message of superfast broadband and what it could bring to the community was more quickly and efficiently conveyed. As we will see in a later chapter, it also allowed superfast broadband the avenue of entry into public village spaces (in this instance – the Institute and War Memorial Hall); spaces over which gatekeepers hold a large amount of local influence and exercise a considerable degree of ongoing space management. This was something which would later lead on to the establishment of digital inclusion sessions in the Institute and War Memorial Hall, as well as community groups embracing and incorporating new technology into their particular offerings; both of which held the potential to inform residents on the power of technology, whilst also showcasing the ways in which it could potentially be utilised.

The ego network of the gatekeeper stands in contrast to the ego networks of their peers. By way of an example, Figure 19 overleaf depicts an ego network of a 'gamer', who possesses a more modest network with fewer contacts, and a separate division of three online-only ties to the left of the sociogram, who do not interact with the ego's other social connections. The condition of all ties being interconnected, and the dense web of ties characteristic of the village gatekeeper is not observed here. The village gamer represents a unique rural internet user. Unlike others, who count only those they see in the physical world amongst their strong ties, the gamer forms a strong attachment bond to those they interact with solely in the virtual realm. Using this network of one village gamer overleaf as an example, one can see the subset of online friends to the left, each of which has no ties to the rest of the gamer's network, a mix of family and co-workers. These 11 ties were identified as the most significant in this online gamer's life. It is a network of relatively small size (this particular respondent does not have any connections to local community groups), and so online contacts form a significant portion of the respondent's social outlet. When asked to rate their level of closeness to

each tie on a scale of one to five (with five indicating the highest level of closeness), four members of immediate family received a four or a five, whilst everyone else (with the exception of one of the three online friends who was labelled a two) received a three, indicating no real distinction in the mind of the gamer between the level of closeness to the online friends and the rest of their network.

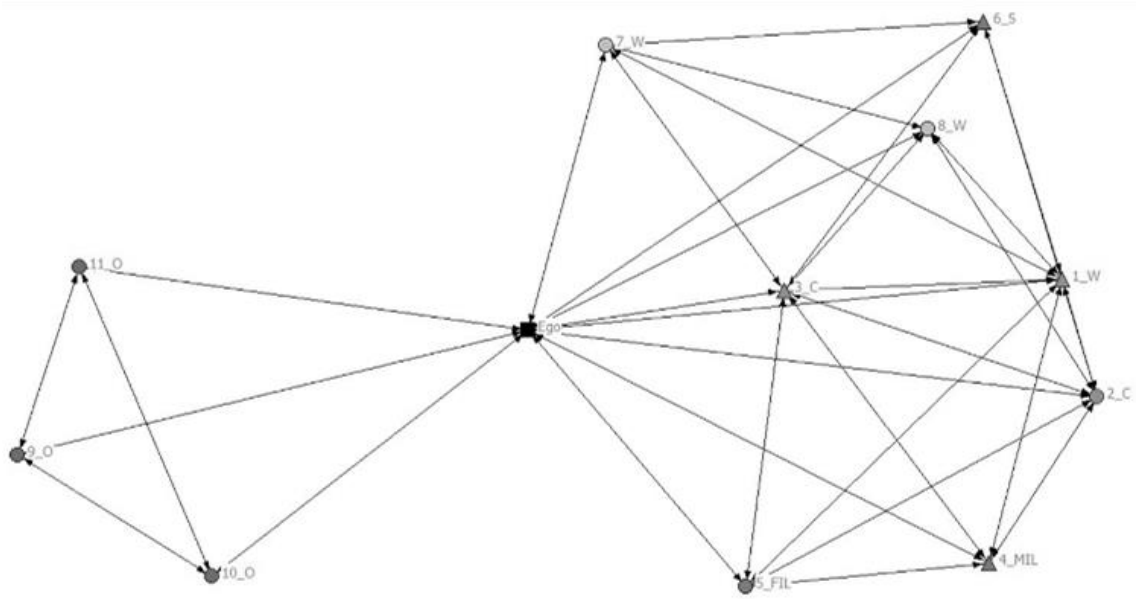


Figure 19: Ego Network of the Gamer

5.7 Summary

Overall, what emerged from the social network analysis research with 100 egos in St Breward was a picture of a village where the specificities of place, the way in which residents of that place operate socially, and the key players within it warrant special consideration when it comes to the deployment of any new technology to the locale. To overlook these special characteristics, which make the rural village different, and necessitate an alternate approach, would be an oversight, and indeed a missed opportunity with respect to the uptake and embracement of new technology.

Local networking remains prominent; in fact, the greatest share of networking is carried out with local people. Additionally, within the context of the rural village, results showed that neighbourliness prevails and is not lost to rural residents as it may well be to their urban counterparts.

Local social ties identified were not simply abundant in quantity, but also strong in quality. An examination of the attributes of social ties found them to be strong in terms of closeness; enduring in terms of the duration of social bonds; and frequent with respect to contact and exchanges.

The extent to which engagement with village gatekeepers can exert local influence is considerable. Social network analysis showed the characteristics of their ego networks – rich and dense with reciprocal interconnected ties. They also hold the key, literally, to village spaces, and provide the potential to connect with the wider village. This was true with respect to the research conducted in the village – engagement with gatekeepers by the researcher yielded opportunities of access and observation, which would not otherwise have been granted. And, as we will see later, a comparable approach with respect to technology deployment can potentially yield significant benefits.

Figure 20: St Breward General Stores Shopkeeper and Doctoral Researcher

CHAPTER 6: THE MEANING OF TECHNOLOGY IN THE RURAL VILLAGE

6.1 Internet Use in the Rural Village

In order to understand the desired approach to the deployment of new technology and any related digital inclusion activities within the context of a rural village, it was first necessary to get to grips with the way in which residents were already using existing technologies. 89% of those surveyed were at least 'occasional' internet users, with a further 3% having just started going online. 90% came from a home with internet access, all of which had fixed broadband connections. A considerable 59% of people had an internet-enabled mobile telephone or tablet. However, not as many as have the facility reported using it whilst on the move.

In terms of the level of village internet skills, as can be seen from Figure 21 overleaf, levels of confidence using the internet are directly comparable to feelings around the importance of internet. Respondents rated how important having access to the internet is to them personally, and also how confident they are in using the internet, with answers recorded along a ten-point scale in both instances. 79% of those surveyed rated the importance of internet access to them personally as at least a six, with ten being 'extremely important' and one 'not at all important', with 70% identifying as a six or more on the confidence scale. The mean internet importance score recorded for the sample was 7.68, with the mean confidence score recorded at 6.81. It should be noted that respondents would caveat that their reported confidence level was related to their confidence in carrying out what they already tended to do online, and what they wanted to do online, which, in some cases, may be somewhat minimal in terms of technical challenge, but they were confident they could meet their own personal online needs and desires in their own way. Overall, it can be said that villagers do value their internet access, though it is not the be all and end all for locals, and some did not rate it as being

that important to them personally. Observed confidence levels are reasonable overall in St Breward, but, equally, there is still much room for advancement in this respect.

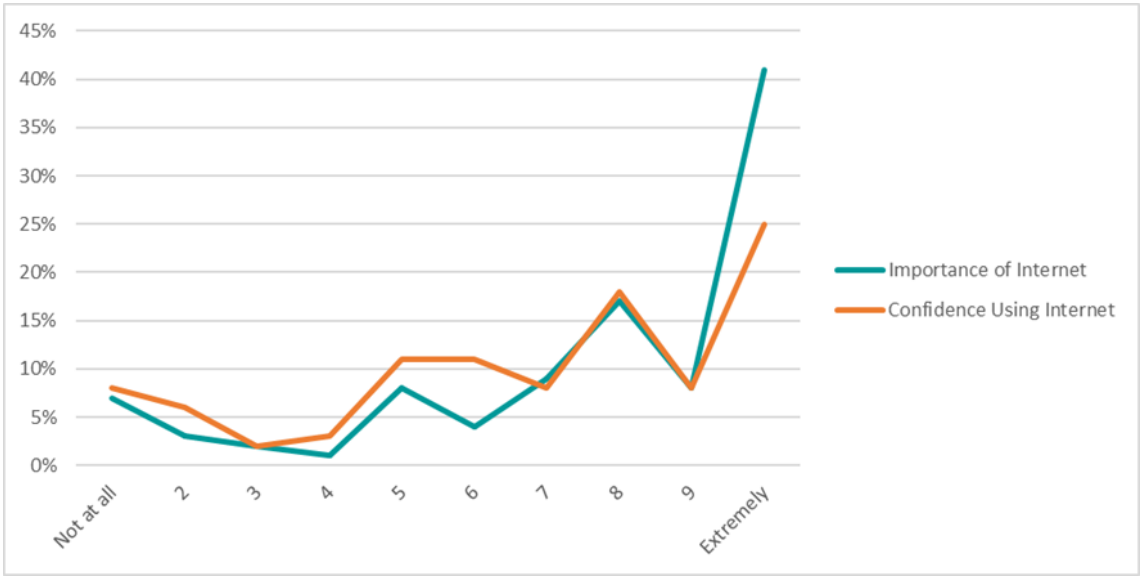


Figure 21: Importance of Internet Access and Confidence Using Internet

An examination of these two variables broken down by age shows us that more 60+ residents report a score of one for both questions than the other age groups. Interestingly, less young people reported internet access as 'extremely important' than any other age category; yet they were the most likely to report being 'extremely confident' on the confidence measure. However, it must be noted that sample sizes become small when drilling down to this level of detail, so any trends identified by age category may only be seen as potentially indicative of a pattern amongst rural villagers.

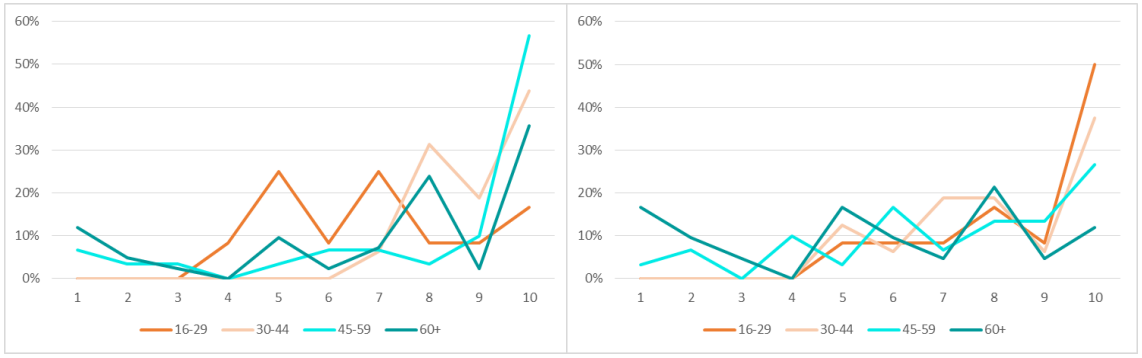


Figure 22: Importance of Access (L) and Confidence Using Internet (R) by Age Group

Respondents were also asked to rate how much the internet has helped them to do a number of things in their lives. The table below, which includes only those who use the internet at least occasionally (n=89), shows the results. It would appear a great deal of people do not find that the internet is helping them to connect with people from different backgrounds. 64% said it did not help them engage with people from different ethnic backgrounds, 55% people from different economic backgrounds, and 44% are not connecting with people of different age groups online.

Furthermore, in addition to low levels of internet utilisation in order to diversify one's network contacts, a considerable share of the internet-using sample indicated they do not use the internet at the local group level. As can be seen in Table 16 below, figures show that nearly 42% of village internet users reported they were not using the internet at all to make contact with local groups and organisations.

	A lot	Some	Only a little	Not at all	Don't know
Connecting with groups or organisations that are based in your local community	21.3%	23.6%	13.5%	41.6%	0.0%
Becoming more involved with groups or organisations you already belong to	25.8%	18.0%	12.4%	43.8%	0.0%
Finding people or groups who share your interests	15.7%	19.1%	24.7%	40.4%	0.0%
Finding people or groups who share your beliefs	3.4%	4.5%	11.2%	80.9%	0.0%
Connecting with people of different ages and generations	23.6%	11.2%	21.3%	43.8%	0.0%
Connecting with people from different racial or ethnic backgrounds	12.4%	10.1%	13.5%	64.0%	0.0%
Connecting with people from different economic backgrounds	13.5%	18.0%	12.4%	55.1%	1.1%

Table 16: What has the Internet Helped you to Do?

Connecting with people who share interests or beliefs was also not commonplace, with 40% and 81% of internet users respectively not doing this at all. Whilst there is a certain amount of activity ongoing which is enabling more diverse social networks, this does not

apply across the board, with many not realising this opportunity, either because they have chosen to keep it that way, for now, or because they do not have the necessary tools and know-how in order to make it happen. Results show how tools such as tailored and targeted community-wide online platforms warrant consideration to bring about greater rural digital inclusion. Indeed, only 40% of community members reported being registered with any online mailing list, list-serv or discussion forum for their neighbourhood. And this is something which varied considerably by age, with those under thirty vastly underrepresented. Just 8.3% of those aged 16-29 surveyed (albeit a small representative sample due to an older population in St Breward) reported subscribing to a neighbourhood email list/ list-serv/ discussion forum. This is contrasted with 42.9% of those aged sixty and beyond. Perhaps more can be done to include those younger people via digital means, strengthening their community links in an information age. Subscription to such a service was highest among the 30-44 year olds at 56.3%. Full results across this measure may be seen below in Table 17, aggregated by age category.

		16-29	30-44	45-59	60+	Total
Email list/ list-serv/ discussion forum subscription for neighbourhood	Yes	8.3%	56.3%	40.0%	42.9%	40.0%
	No	91.7%	43.8%	60.0%	57.1%	60.0%

Table 17: Subscription to Neighbourhood Email List/ List-Serv or Discussion Forum by Age Category

Appropriate community-wide online platforms would potentially allow for greater levels of online subscription across the community as a whole, bringing about a more digitally inclusive environment, enabling further cross-generational online exchanges with younger villagers, and the sharing of ideas and community issues online. It would be a

step further than the well-maintained and informative village community website, managed in-house by community gatekeepers, and a potential means by which to engage all cohorts of rural village society, thus contributing to a more sustainable future for the high levels of satisfaction and community interaction currently present in St Breward.

6.2 How Technology Infuses with Villagers' Personal Networks

Although, on the surface of it, this may seem like a technologically well-connected village, with at least occasional internet usage at 89% (a figure actually comparable to the wider UK as a whole where, using data for Q12017, 89% of adults are reported as having used the internet in the last three months (Office for National Statistics, 2017)), this research aimed to look beyond 'Who has access?' and 'Who reports using particular online services?' Instead, this research employs social network analysis to get to the heart of how ICTs are actually being used in reality in order to facilitate social interactions for St Breward's village residents. It seeks to understand to what extent the villagers are using the internet as a means of communication with the ties that lie within their own ego networks, whether those be local ties, or ties based further away geographically.

The preceding chapter described rural villagers' personal ego networks, amalgamating them together to look at the attributes of the 1,618 alters elicited, addressing how far afield villagers' ego networks reach, how strong their ties are, how longstanding they are, and the frequency with which egos actually interact with their identified alters. We have also seen, in the section above, the level of internet access present in the village, as well as the importance villagers place on having that personal access, and the degree to which they feel confident in their use of the services which that online coverage

grants them access to. Finally, we looked at how residents use that technology to connect with others in a general sense, and saw how there was some variation in subscription to online neighbourhood services across age group, with the youngest villagers seemingly underrepresented.

However, in order to address the ways in which villagers actually appropriate technology in real life, and not just examining their self-reported usage measures via survey methods of enquiry, it is necessary to link the ego network data presented in the previous chapter with some additional variables which explore villagers' use of technology in order to sustain their social ties. Whilst we have hitherto identified who and how often egos interact with, we have yet to explore the means by which these interactions occur. Whilst one can easily tick a box to say 'I have Skype', or 'I use Skype', this study opts to go beyond this oft used basic mode of interrogation and see, in reality, how villagers are using technology day-to-day across their social network to maintain their social relationships, whether those relationships are local or further afield.

6.3 Face-to-Face versus ICTs to Sustain Social Ties

Of the total 1,618 social relationships reported by 100 egos, email was used in just 27.3% of cases; a figure actually comparable to that of postal service use, which was reported in 26.3% of cases. Social networking and instant messaging were yet more infrequent at 14.8% and 6.4% respectively. As can be seen from Table 18 overleaf, the dominant modes of communication facilitating the social relationships of village egos, both locally and beyond, are face-to-face communication, present in most instances (99.3% of cases), and the more traditional mode of contact – the landline telephone, used in 74.5% of cases. Table 18 offers a summary showing real numbers, with the data also

represented in a graph of rounded percentages in Figure 23, both of which may be viewed below.

	N	Percent of Cases
Face-to-Face	1,607	99.3%
Landline	1,205	74.5%
Mobile Call	826	51.1%
Mobile Text	603	37.3%
Email	441	27.3%
Post	426	26.3%
Social Networking	239	14.8%
Skype/ VoIP	124	7.7%
Instant Messaging	103	6.4%

Table 18: Egos' Means of Contact with Alters

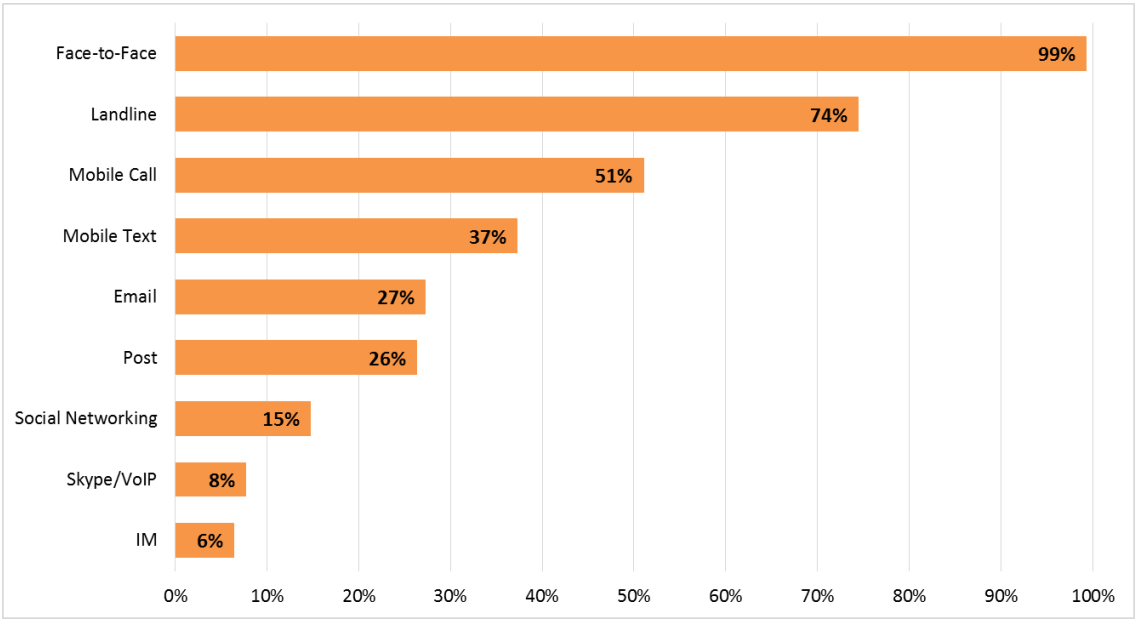


Figure 23: Egos' Means of Contact with Alters Graphic

The limited use of high-technology by village residents across their ego networks is striking, and really illustrates the extent to which more traditional modes of interaction have real sticking power within the context of the rural village. These earlier means of communication have served villagers well, and having been, until recently, accustomed to poor cellular coverage, and also a lack of adequate internet coverage, these

traditional modes continue to prevail as the interaction modes of choice for villagers in maintaining communication with their ego network social ties. With email use on a par with postal use, it can be said that the rural village is some way from being infiltrated by the use of high-technology, or from more modern online means of communication becoming the rural norm rather than the exception. The survey showed us that 44% of the sample say they 'use' Skype or other VoIP services. Yet the social network analysis showed us that a mere 7.7% (124 cases) of the total 1,618 social relationships actually employ Skype or other VoIP services in reality across their social network. These 124 cases of relationships using Skype were elicited from 28 people overall, implying that 28% of the sample demonstrated using Skype in reality in order to facilitate social contact. This is a sharp contrast to the proportion of people who purported to use services such as Skype in the survey – 28% of the social network analysis sample versus 44% of the survey sample. Whilst the number of people stating they use a particular information communication technology is certainly of interest, of greater interest is the real life confirmation of the use of said service. Results here would indicate that the numbers of people using services such as Skype in reality may indeed be over-represented through the use of self-reported survey measures. A considerably lower incidence of Skype use was found through the use of the social network analysis method, a method which allowed for the linking of social data with data relating to the use of technology in the real world social domain.

Results from the survey element of this research put Skype usage at 44% of the sample. This figure is comparable to those quoted in larger studies carried out by UK consultancies. For instance, a recent study by Flint (2018) shows UK Skype usage at 40% of the population. Data from this 2018 Social Media Demographics report using a self-reported usage measure could potentially be overstating real life use of such a service.

Results from investigations carried out in St Breward would certainly suggest that this is a possibility. A summary of Flint's results, which give an indication of generally accepted levels of ICT use, acquired via typical means of enquiry in the UK (through the use of an online panel survey) are illustrated below in Figure 24.

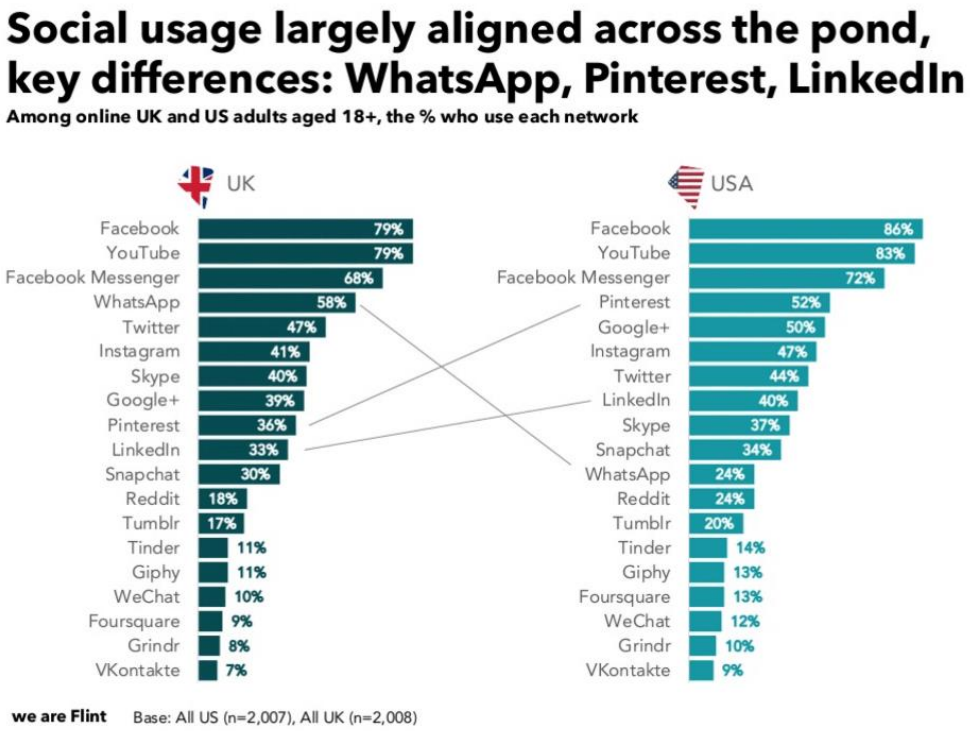


Figure 24: Social Media Usage Statistics from a Study by Flint (2018)

Throughout the course of this research, it became clear that whilst survey statistics are useful, the richness in data and depth of understanding which could be acquired through the application of alternate modes of enquiry in the rural setting was considerable. It truly allowed the research to go beyond faceless numbers, and to establish a more comprehensive and far-reaching understanding of how rural residents use technology in their day-to-day lives, something which is lacking in generally available data on the subject of interest.

Following their study of East Yorkers, Mok et al. stated that 'E-mail contact is insensitive to distance. It is as frequent at 500 miles as at 5 and 50 miles. When relationships are

very distant —transoceanic— e-mail is almost the only medium the East Yorkers use for contact, as Internet phone services such as Skype had not become widely known' (2010: 2778). The same cannot be said to apply in the rural village setting. In St Breward, email has not yet infiltrated villagers' social operations to this degree. The preference for face-to-face exchanges continues to prevail, with the landline telephone the substitute of choice. If we refer to Figure 25 below, it can be seen that there is indeed variation across the use of email depending on the location of the social tie. Email was found to be considerably more common among ties residing further afield, and much less frequent with locally based village ties. Whereas 47.1% of ego relationships with ties residing more than 100 miles away employ the use of email, only 16.2% of local ties do the same. This figure is 31.3% when we look at those alters who live beyond the village of St Breward, but within a 100 mile radius of the village. In fact, all online services examined – email, social networking, instant messaging and Skype-like services were found to increase in usage as the ties moved further away from the village locale, showing sensitivity to distance. Results for all modes of social interaction examined can be viewed below in Figure 25, with results aggregated by geographical location of alter.

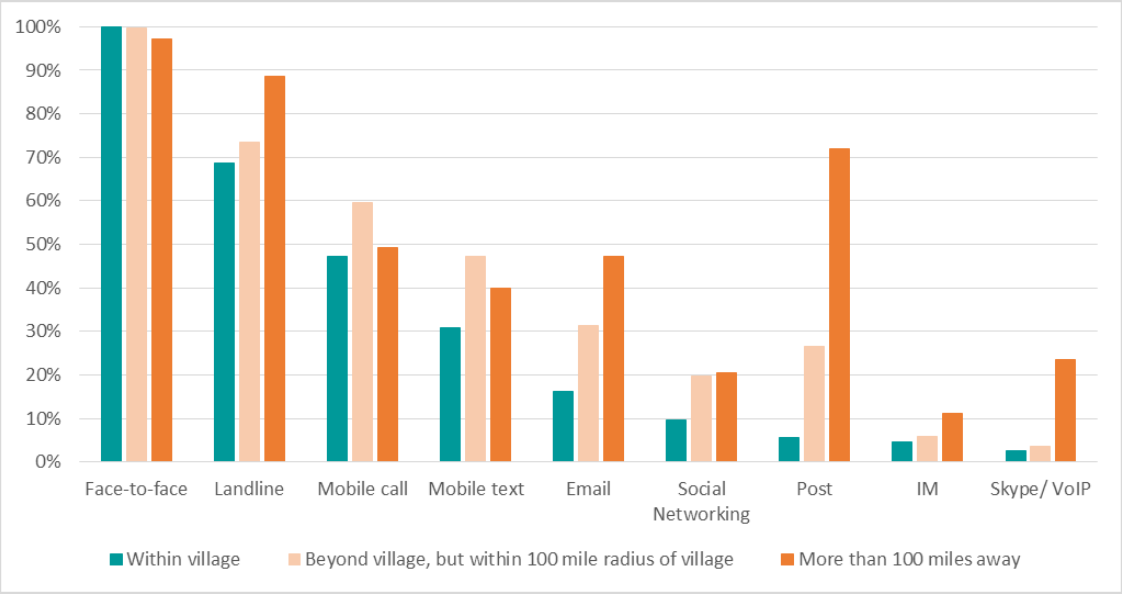


Figure 25: Egos' Means of Contact with Alters by Geographical Location

So here we have a picture of a village in which the landline telephone, and to a lesser extent the mobile telephone, are considerably more common means of communicating with one's social ties than email or any other modes of online contact. This is a rural locale where people are not relying on email or online social networking in order to sustain their social relationships; at least not to the same extent as is the case in locales not located in the geographical periphery. They are not depending, to any great degree, upon such means to contribute to, alongside other modes of contact, the sustenance of their social relationships. This, of course, poses the question as to how superfast broadband being introduced to the village will have a social impact, when such large proportions of the population are not already using relatively basic bandwidth dependent services in order to enhance their social contact with others.

Whilst 23% of the 1,618 alters identified by respondents reside either more than 100 miles away or abroad, just 7.7% of the 1,618 relationships employ Skype or other VoIP services in order to facilitate their contact. This is perhaps a lack of digital awareness or digital skill; or maybe simply a preference for more traditional means of communication. In either case, it highlights how low engagement with these services truly is. So, whilst superfast broadband may now enhance the Skype experience for those who acquire it, there is a need for some intervention or encouragement to ensure those who are not currently using such services – the vast majority – are first and foremost made aware of said services, but also in a position to acquire knowledge on how to use them in order to potentially enhance, or at least broaden, their social contact options.

Variation can also be seen in the adoption of means of online communication when we consider the strength of social ties. Recalling what Haythornthwaite (2005: 127) found – 'particular differences evident between the use of media by those strongly versus

weakly tied', we do see that online services are more strongly represented amongst villagers' very strongest ties (threes and fours on a five-point scale). Although the same can be said of all other technologies, too, such as the landline and, most notably, the mobile telephone. The mobile telephone exchanges are most often reserved for those strongest ties, something which was touched on by one interview respondent who claimed 'I tend to use the landline. I don't give many people my mobile number, because it saves you having these phone calls when you're, you know, everywhere.' Results for this measure, showing the proportion of each relationship tie-strength category using each technology type in order to communicate may be seen below in Figure 26.

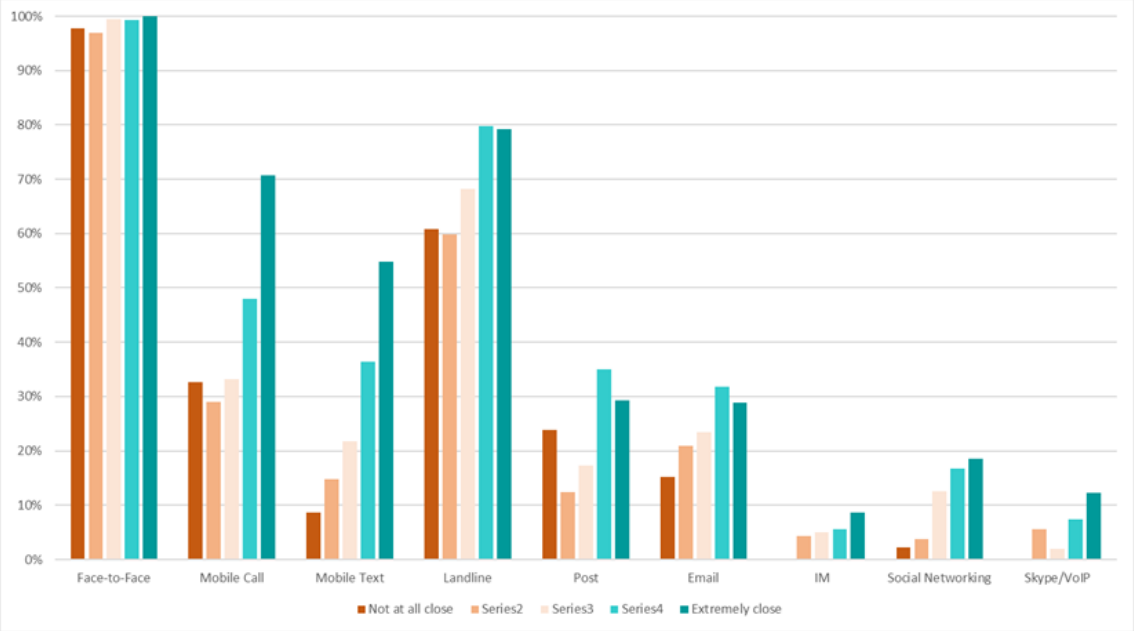


Figure 26: Egos' Means of Contact with Alters by Tie Strength

In terms of the number of modes of communication employed in the sustenance of individual ego-alter relationships, as asserted by Haythornthwaite (2005), strong ties maintain their ties through several media. Investigations in St Breward have shown that this assertion does indeed hold true. Data presented in Figure 27 overleaf shows that as a social ties becomes stronger, so too does the likelihood of the presence of multiple modes of communication in the facilitation of that social relationship. Using three

modes of technology to communicate with an individual tie was found to be the most common scenario, with 25.8% of the ego-alter ties employing this many.

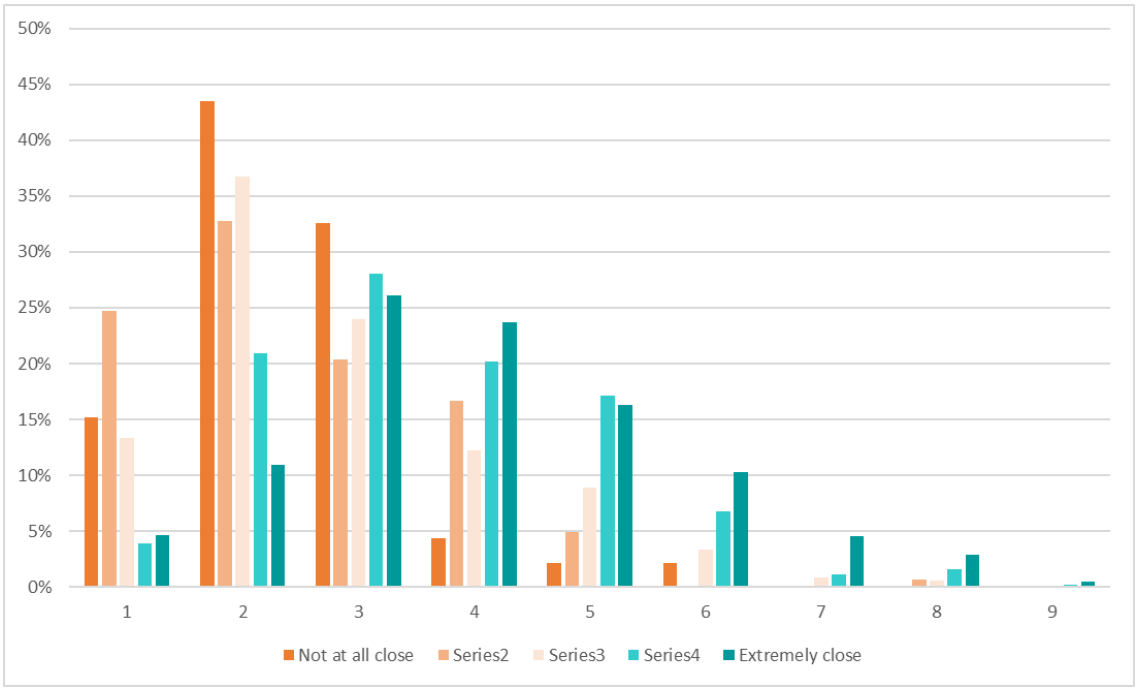


Figure 27: Number of Modes of Communication Employed by Tie Strength

6.4 How Rural Villagers Imagine Technology

Residents of St Breward share a sense of collective identity by virtue of their location within the geographical bounds of St Breward. In addition to the place attachment experienced by locals, they also feel connected to others residing within the village – the community – united in a shared sense of community purpose, and getting involved in pursuit of the community vision to a degree with which they are comfortable. Asked whether or not they believe the internet is something which helps people feel more socially connected and involved, 59% of respondents agreed or agreed strongly that it is. 29% disagreed, however, with the remainder undecided either way. One participant was keen to add a caveat to her response, cautioning:

> *But not socially connected in a good way. I'd much rather pick up the phone, you see. With internet and email, you don't get the inflections in the voice, you can't*

read people; it's impersonal. The young will have a lack of social skills in the future.

Clearly not everybody in St Breward views the internet as something which could potentially be utilised as a means to acquire heightened levels of social connectivity and social involvement, and for those that do, this is not necessarily a desirable social outcome. There was a sense over the course of the research that the social affordances of the internet had not yet been fully realised within the context of the rural Cornish village, something which greater exposure to the potentials of technology, together with tailored community interventions, could seek to overcome.

66% of the sample believed the internet is something which can help to counteract feelings of geographical isolation, whilst 27% disagreed, feeling it was unable to help people overcome geographical barriers to participation. Whilst this 66% that believe the internet can be used to counteract potential negatives associated with residing in the geographical periphery represents a greater share than believe the internet can counteract feelings of social isolation, as with the social isolation measure, there remains more than a quarter of residents who believe it is not a tool which can be successfully used for this purpose.

Overall, we see that the majority of people appeared to recognise the internet as something which can be a force for social good, believing it does help people feel more socially connected and less geographically isolated, with 7% more of the sample agreeing that it can counteract geographic isolation than it can counteract social isolation. However, there is not mass consensus on this. A considerable 29% and 27% of respondents respectively disagreed with these two statements which posit the internet

as a force for good with respect to social involvement and geographical isolation, and some of those who do agree with the statements do so with a caveat attached.

General attitudes towards the internet in the village are largely positive. 81% of those surveyed either agreed or agreed strongly that the internet is something which helps people to get ahead in life. Many of the interviewees conveyed a positive impression of the internet, what it does for them, and how they would not like to be without it now.

> *You're always connected, wherever you are. I wouldn't be without if for my banking, and it keeps me in touch with friends … If I'm going out somewhere, you can look up first of all where you're going to, where to go and things like that. Most of them have a website. I look on the website and see if it looks good to go … If you're going shopping, you can look at different stores to see where what you want is cheapest, to save traipsing around all the shops … Everything is available.*
>
> *I think the main benefits of technology and internet are still to be discovered. I think it's interesting to see just how family recreation has changed … It allows you to take interests and develop them much more than you ever could before. If you're interested in music or photography or books, it just gives you a vehichle.*
>
> *If the internet was taken away and I had to go back to a dongle, I'd be up a creek without a paddle, because our reception down here is minimal, so if I had to go back to before we had broadband, it would be an absolute nightmare, because we do use it to communicate.*

When asked if they felt they were missing out by not using the internet more than they do currently, however, just 23% felt that they were (and only 8% agreed *strongly* with this), indicating a majority sense of satisfaction with the status quo, and a lack of belief in the view that they could be doing more, or could potentially be missing opportunities to operate at a higher and more sophisticated level of technology. Again, this could be said to stem from either a personal preference to remain at a certain level and continue with life in a way which is familiar and comfortable, or, indeed, given rise to by a lack of exposure to the possibilities which high-technology can potentially afford people. Table 19 overleaf offers a summary of results across this survey measure, showing the large

proportion (39%) who *strongly* disagree that they are missing out by not using the internet and email more. A very considerable 76% overall disagreed with this notion that they were missing out by not engaging more with the online world, which could be said to be indicative, perhaps, of a lack of technological ambition present amongst rural villagers of St Breward. The sense that the current status quo was enough, and that people were content with their existing modus operandi, prevailed when exploring the idea of stepping up levels of technological interaction.

	Frequency	Valid Percent	Cumulative Percent
Strongly agree	8	8	8
Inclined to agree	15	15	23
Neither	1	1	24
Inclined to disagree	37	37	61
Strongly disagree	39	39	100
Total	100	100	

Table 19: I'm Missing Out by not Using the Internet and Email More

Village residents were largely united in agreement that they don't feel left out when their friends talk about the internet. People were either happy that they were on a level with their peers, nonplussed at not being on a par with them, or it simply didn't feature as a point of discussion for them in their social lives. A considerable 84% disagreed with the notion that they ever felt left out when their friends talk about the internet, with just 14% agreeing that this is sometimes the case for them – feeling somewhat left out when it comes to discussion around the internet amongst their peers. As with the previous measure addressing whether or not villagers felt they were missing out, this exploration of villagers' tendency or not to feel left out when discussions of the internet take place among friends indicates that the vast majority are content as they are, and are generally not subject to conversations around technology which inspire them to any such degree that they feel left out by virtue of not doing the same, or not having a

comparable skill set in order to enact similar practices. Results for this survey measure are presented below in Table 20.

	Frequency	Valid Percent	Cumulative Percent
Strongly agree	5	5	5
Inclined to agree	9	9	14
Neither	2	2	16
Inclined to disagree	19	19	35
Strongly disagree	65	65	100
Total	100	100	

Table 20: I Sometimes Feel Left Out when my Friends Talk about the Internet

Alongside some positive attitudes identified towards technology, and expressions that the majority are content with things as they currently are, there remains a considerable climate of fear around the internet for some, with a number of villagers highlighting what they felt were the negative, and even dangerous, aspects of internet use. A wide selection of viewpoints is included here, in order to reflect just how pervasive the worries that people hold on to in the rural village setting are, and the kinds of opinions being put forward over the course of the interviews.

> *You can't believe a word of what people say, or the information. You know, people present themselves in a certain way, don't they? So you're only seeing sort of the tip of the iceberg. And, you know, when you're looking up information, you don't know who's put it there to know how truthful it is and whatever. And the same for newspapers as well. You know, they've got much more to fill up on the internet, so they put in a lot more rubbish then they would have done in printed form … I don't think people realise that once you put photos or whatever on the internet, it's out of your hands. They're open to abuse by people you don't know in all sorts of ways.*

> *I think it's the most dangerous piece of equipment that was ever invented! There's so much fraud. I think online banking is a disaster waiting to happen. And you get all this bad mail, and it's just an intrusion into your life. And, well it's the same with the telephone. You don't have a phone for people to ring you up to sell you insurance or whatever. No, I just think it's very invasive. I mean, it's very dangerous. I think Facebook should be got rid of because it just all causes too much trouble. Because I think it's a very dangerous piece of equipment and people don't realise what they're doing with it. You know, people live their lives*

on Facebook, and then so many people can get access to all that information, and it's ridiculous … Employers now, when they're looking to recruit people, they look them up on Facebook, see what sort of things they put on there … Don't you see, that is where it's dangerous, because, if somebody wants to, they'll go in there, find things out about you, and character assassination is so easy … Kids being groomed and all that stuff, and the financial side of things, and I'm sure it's not good for your eyes! People sitting there; they're on there for hours and hours and hours, staring at a screen, and that can't be good for you.

I actually think that it will ruin communities, because you'll get to the stage where there won't be anything left because everything's done online. I had a chap one day say to me 'I don't need to step outside my front door. I can do everything I want to on my computer. I can get all my shopping, I can do this, I can do that.' And I just said to him 'What a sad ol' git you'll be when you never speak to anybody; when you don't, you know, intermix.' So, you know, you can become very isolated if you use it too much. If you were housebound, it would probably be very good, you know, there are people who can't get out and about that use it a lot, and that's fair enough. And I think really that's how it should be. But if you can still do things, I think you should do everything you can, while you can, and make the most of your life … Home deliveries, they'll kill businesses, yeah … You know, you should keep your independence and you shouldn't become a slave to the computer … And I think it's a big time waster; a big, big time waster.

We're still very vary on handing out our card details and that. Normally my brother in law does it through his and we pay him … They try to encourage us. The only thing that stops us, I think, is, and it's silly really, but it stops us because of the card details and whatever. But if there come a time that X couldn't drive or anything, we'd probably rely on that to get to do our lottery, you know.

Lack of exercise. Siting at the computer becoming triangular in shape … It's too easy to sit there and not move around … Dangers with young children with grooming and easy access to porn sites … The bullying that can take place on Facebook … The dangers of getting corruption on your computer.

You have to be careful if you're sending emails; careful about your wording, because I think it's too easy to type something up and click quick send and think 'Oh my god, I shouldn't have said that', because people, I think, if you do something hastily, you can regret it, whereas if you write something on a piece of paper you might have time to think about it before you run down the road and put it in the post box. That could be a danger or a disadvantage. Because once it's sent, it's gone; you can't get it back.

If people grow up with the time to be able to post on Facebook that they've, you know, I don't know, jammed their finger in the door and it really hurts, then they should have the time to be able to check their internet banking, or stuff that sort of matters.

All of these attitudes towards technology uncovered by the research conducted in St Breward, and all of the fears held on to by locals which it has revealed, could inform digital inclusion measures and interventions in rural communities such as this one under investigation, in order to assist in allaying fears and scepticism, and in challenging resistance to the online realm, as well as fostering a desire amongst locals to engage with technology, and encouraging upskilling so that that engagement is both more effective and more sustainable. Counteracting security fears, as well as exposing the potential benefits of online services, and showcasing ways in which the internet can be integrated into the collective community mission, appear to need to be primary considerations within this type of setting.

Residents were also found to have an opinion on the degree to which using the internet impacts upon one's social interactions. Whilst acknowledging it does 'create a connection to other people', 'adds variety to your life', and allows for 'speed of communication', there was concern amongst some that it was a potential cause of people retreating from their much-valued face-to-face interactions.

> *I think it can deter you sometimes from being an outgoing person. My neighbour next door - he sits all day every day at his computer … Some people will just become addicted to it.*
>
> *You could lead a much more sort of hermit life because you can get everything so easily … The ease with which you get stuff is really, really good but, again, it's the lack of interaction with people … It's very faceless … Although the shops are moving that way as well. You can go in and out with these sort of online checkouts. You can go in and out of a shop without even speaking to anyone, which is not an awful lot different to online shopping really.*

Another younger respondent was pleased to be able to use social networking to interact with old friends and see what they were doing, enjoying staying in contact with 'a few people that mean something to you', but did admit that it can make one inclined to 'not

interact so much with some people on your doorstep … because I can still communicate with X from 15 years ago.' They reflected that whilst pre-internet they may have gotten a Christmas card from them, nowadays, they can 'talk to them on a daily basis, and because of that you're less likely to interact with people around you.'

Similarly, another younger respondent considered this issue, finding pros and cons to the modern arrangement of online-based social interactions, and highlighting how they employ online social networking as social organising tool in their lives.

> *I interact with them a lot more. Like I said, I'll sit on the laptop for an afternoon and not even think about it, and then I'll look at the clock and think 'What on earth has happened?' So it stops me, I'd say, seeing people face-to-face quite so much because I can talk to them online. But then, at the same time, I sort of contradict myself, I'd say I see them more because I can arrange things with them, so I wouldn't, like, stroll up to my friend's every day to see him, but I'd talk to him on the computer, and I may see him two or three times a day sort of thing. So, it depends, yeah, it definitely makes it easier to get in contact with people and arrange meeting up with people, but at the same time, it stops me actually going to their house directly and seeing them.*

This respondent further noted, with respect to places beyond the village, that '…arguably, actually, I would visit them more, because I can check the times when things close, and sort of quickly nip there if I need to. Whereas before, if I wasn't sure, I wouldn't go and then save it for the next day.'

Others don't worry about this phenomenon, saying people still like to meet, 'even if they're meeting on the street with the dogs', or feeling that their online contact merely supplements their usual means of exchange. 'I think it adds to it for me; I'm probably as likely to send them an email *and* talk to them.' One respondent, a home-worker who relocated to the village from a more populated area, made clear that there were benefits to new ways of communicating and carrying out activities from one's home, without the need to venture out.

> *It's a different type of social interaction. I don't think anyone really understands its impact yet. I think it's a very interesting thing. I think that actually we haven't really reached the limits of it yet. We're just exploring … I don't have a reason really to go into a town centre anymore … Most of my interactions, I'm happy to do them online, and I don't feel that I'm losing anything. If anything, I'm getting time back.*

However, time saved carrying out tasks online was perhaps counteracted by the overwhelming extent to which technology infiltrates one's private time, with the same respondent describing how there is a 'massive cultural issue of being available too much.'

> *I can get work emails 24/7. And there's almost a culture of being expected to answer them 24/7 as well. It just becomes too pervasive. And, you know, you do want to be able to just turn off things. Come five o' clock or six o' clock, you want to turn it off and not have to deal with it, I think. But it's coming in through all the social channels. It's kind of blurring the working hours thing quite horribly.*

Some respondents acknowledged how email does allow them more frequent contact with certain people, but lamented the more traditional means of communication such as letter-writing, with letters now few and far between.

> *I miss getting letters. I love getting letters. I still write letters occasionally to people. It's really nice for somebody when they get a letter, and they say it's so much nice than an email. So, yes, I do use emails but I still write letters sometimes, but not as often as I used to.*

One respondent maintained 'You know, you can't always have everything for nothing', describing how people's tendency nowadays to find the cheapest price online 'almost boils down to greed', and that we shouldn't have the best deal as the primary focus, particularly not if it's to the detriment of the survival of physical shops. Not buying online, even if it means paying more, was important to this particular interviewee.

Others were more willing to go along with the increasingly online way of life, though not without contemplating the downsides and the risks. Talking about preferring to buy the physical DVD rather than downloading the film, one respondent noted 'You're buying nothing, sort of, it's strange.' This respondent has, however, now moved across to downloading music, but commented that 'It is scary.'

A husband (H) and wife (W) team defended the benefits of the offline husband's alternative face-to-face offering to others, acknowledging the value of real-life communication skills, and how he had his own uses, despite being offline.

> **W:** *I think he's good at relating to people anyway. He reckons he doesn't need all that technology. He can relate to people; he can speak to people about anything. That's his biggest asset.*
>
> **H:** *People can come to me and talk to me about anything, whether it's private or whatever. And I would sit and listen to them and answer them as best I can. I suppose I have my own uses really, you know.*
>
> **W:** *He's like Dear Deidre sometimes, because he's listening to everybody's problems.*
>
> **H:** *She joins in the modern world a bit, where I tend to just go without it a bit, I suppose.*
>
> **W:** *It's just the way he is, and you can't persuade him to do it if he doesn't want to do it.*
>
> **H:** *We was one of the first of the older clan to get one* [a computer]. *Like I say, our clan is a set clan really, you know. We was born in the forties, and we're sort of staid in our ways.*

Research conducted in St Breward has highlighted the way in which a village community is comprised of many different types of internet user; each type with their own distinct orientation towards technology, but all types collectively and harmoniously operating side-by-side regardless, generally aware of, and sympathetic towards, one another's IT abilities or lack thereof. What these typologies show is that many groups suffer from a

lack of exposure to technology, a lack of guidance on how to use it and, most certainly, a lack of awareness of what it could potentially do for them if incorporated into their community and, hence, their own lives. This lack of exposure is something which will be heightened in the remote, rural setting, and if activities and services which call for heavy bandwidth are to take off beyond the urban centres, there is a need for something additional in place to enlighten and inspire rural communities. The following sections look at some of the emergent user types in more detail, in order to give a flavour of the kinds of stories encountered through the course of the research, and to illustrate where efforts could be directed in such a way that would benefit the varying types of rural technology user presented.

6.4.1 The Frustrated Non-Users

As more and more facilities and activities are moved into the online domain, some rural people are being left behind, and becoming increasingly frustrated at the fact. One St Breward resident, an older respondent, expressed their frustration at the way in which companies no longer offer a contact telephone number, as so much business is now conducted solely via the internet. Unable to order their favourite bread flour over the telephone anymore, this resident felt in a position where they had no choice but to get on board with broadband (during the course of this research they made considerable progress on a local IT course). This same respondent, an author, kept a two-week diary of their technological and social interactions. Resultant data illustrated their heavy reliance on the landline telephone, a tool they used, at great length, in a bid to circumnavigate the need for internet services:

Wednesday

> *Rang my friend, X, to ask her to email my publisher re: launch date, and my purchase of 100 more books. No reply as yet.*

Thursday

> *X rang and read the return email from the publisher. I really can't understand why the publisher can't ring me direct. It would be a lot quicker. Everybody seems so tied hand and foot to their computers!*

This respondent remarked, having completed their diary that they were now acutely aware of how much they depend on the telephone, and how they really do *need* email. They said they were hoping to find a laptop in the New Year sales. The prospect of ordering online from the supermarket if ever housebound also appealed to this respondent. There are likely many more people in Cornwall's aged population that find themselves in a similar situation; people who want to get on board with broadband technology but simply don't know how to go about it. Their progress towards their goals can be so piecemeal in nature, that without external intervention they never really get going.

6.4.2 The Late Adopters

Another respondent expressed their dismay, stating they were beginning to feel they were being left out. They recalled their limited prior encounters with the internet, carried out via other people, with marvel:

> *It was amazing really. My daughter looked for a dress for me. I watched her. I didn't touch the computer. She could scroll through the dresses and put all the ones I liked in the basket.*
>
> *Myself and X went to the post office to look up pictures of Ikebana flower arrangements online. X knew how to do it.*
>
> *I went to Bodmin library once with my husband to look at pictures of my daughter's house. The man in the library did it for us.*

These three examples illustrate the key roles played by both places outside the home offering public internet access, and also other social actors in facilitating online experiences, exposing those not accustomed to what they could be doing online to the

affordances of the internet. Be it the home of a family member, a public access point in a post office, or a learning environment such as a library, without it, this respondent may never have had such experiences. This village resident, as with the previous respondent, later went on to do an IT course provided locally in St Breward and is now considering signing up for superfast broadband and looking forward to their online future. Again, however, this respondent signals one of those who would likely be lost to the online realm were it not for the intervention of external inclusive measures.

For many, the adoption of new technology is a novelty, and one which requires some intervention, inspiration and guidance in order to set them on that path, but also one which can bring a considerable deal of joy and satisfaction when successful. By way of an example, one respondent's account of their Spotify journey, logged in their interaction diary, is detailed below.

Wednesday December 11th:

Downloaded Spotify on mobile!
On returning home, more Spotify and downloading music

Thursday December 12th:

More Spotify
Home – quiet evening – Spotify again!

Friday December 13th:

X called in 16:30 for half hour before X went to work. Just chat (tell him about Spotify!). Spurred on to download a few more tunes

Saturday December 14th:

Watched TV later in evening. More downloading on Spotify (getting boring, I know – still a novelty to me).

Monday December 16th:

14:30-15:00 – Spotify again!

Tuesday December 17th:

18:15 – Spotify whilst having shower

Wednesday December 18th:

Downloaded more Spotify

Whilst a simple journey, it does illustrate how one interest, in this case music, and being introduced to a particular application, can set someone on a path which brings something positive and fresh into their life. Described by this respondent as a novelty to them, it was their hook to engaging more with technology than they had done up to that point. This same respondent was also embarking on a new journey with Twitter. They were keen to try things out, but perhaps benefitting from some guidance. When they forgot how to send a personal message on Twitter, they abandoned it for the day.

6.4.3 The Digitally Resistant

Many were adamant that broadband was not for them – some through lack of interest, some through distaste for it in general, and others because they felt it simply was not relevant to them in any way, shape or form. Several wished to make clear this was a personal choice not to engage with technology, and not through fear or a potential lack of ability. Some quotes from the digitally resistant respondents identified in St Breward are listed below, illustrating that a level of technophobism was indeed picked up upon in St Breward.

> *Everything's out in the open, with others listening in and watching. It's so poisonous.*
>
> *I use the ordinary telephone, the landline, a lot. I think a mobile phone is something you should only use for emergencies. I don't think it needs to be an extension, a connecting piece between your hand and your ear … I think they're an invasion on your privacy … They were never meant to be used the way they are, I'm sure … I don't have very much time to sit and mess about with things like that. I'm not like my lifelong friend who engages all technology with gusto. I'm not a SatNav type of person, or gadgets … I wouldn't say I was excluded, I choose not to use it … I have no interest at all in it … It's there, you can use it if you want to, but I don't … If I wanted to do it, I'm sure I would, but I just have no interest. I think it's a big time waster.*
>
> *I've no interest. What you don't know, you don't worry about.*

Other than 'having' to use it, I have a total lack of interest. It's a necessary evil for me. The need is for my business – buying and selling. Most of my friends actually admire me for having no interest in it, or for not having a mobile phone. I was complimented on it yesterday.

The technology for me is the cooker and the washing machine.

Discussing their internet-connected television, one respondent noted that 'If you knew your way around it, you probably would use it more, but you need quite a lot of time to do that, and I really can't be bothered.' For the digitally resistant, they do not have the inclination to spend time getting on board with technology, and they are clear that this is a conscious choice, born out of preference rather than circumstance.

Also in this category lie those who use online services via another person – those who do not bother with online activity themselves as they have somebody else in their life who is willing to carry out functions online on their behalf. In essence, they employ 'surrogate users' to meet their online needs (Selwyn, 2006: 288). The identification of the proxied internet user is in line with Selwyn's finding that ''non-use' of computers certainly does not equate with non-contact with computers. Very few of our non-using interviewees and survey respondents could be said to be totally excluded from computers. Many had computer-using friends, co-workers and family members who were often used as vicarious sources of computer contact' (2006: 288). In St Breward, the phrase 'My wife does that for me' was heard frequently over the course of the research, and some were also found to be operating via their partner's email address. One active community member would be alerted to emails directed at them, and have the emails opened for them on the laptop so they could read them. This same respondent was no stranger to technology, operating the most advanced of television sets in the presence of the researcher, and well able to record their favourite shows, but

with the absence of a *need* to operate a computer on their own, they consequently hadn't gotten around to learning how, and said they were unlikely to do so in the future.

> *My wife's quite good with the computer and that, but I wouldn't know how to turn it on. And that's by choice more than anything … I suppose I'm living in the past a bit. You know, as long as I can get through, I think that will do me like. As long as I can muddle through … It's quite useful. Although I don't use it, it's quite useful on my behalf. My wife does all that for me … I'm happy with the way I am, I think … Most people, we just rely on the wife to do it.*
>
> *I wouldn't now, but I wish I had if you know what I mean. Years ago, I wish I'd done a lot of things years ago perhaps … There is that about it. Perhaps I would have learned, but I think now I'm getting older or whatever, I don't need to … Tis my fault, isn't it, because the chances were there, and they're still there if you wanted to do it. But I don't feel the need to need it. If I'd have wanted it bad enough, I'd have learned it. Perhaps if I didn't have my wife, I might have, I don't know … But you only really need one* [online]*, don't you?*

Use of the internet via another proxy user was uncovered with some respondents, and together with the late adopters and the frustrated non-users, these digitally resistant residents make up a share of the rural village population who may need certain encouragement, exposure and assistance in order to avail of the opportunities afforded by superfast broadband.

From another standpoint of the digitally resistant mind-set, the fear that modern technology will supplant, rather than supplement, our communications with others was articulated by one St Breward respondent:

> *I had a prophecy in the 1960s: Once we get computers, the communication between here and abroad will be instantaneous, but the communication between two people will be miles apart. I like to see the expressions of what somebody actually thinks of my idea. When communication goes out, it's so wrong. Just because we use email, doesn't mean we should ignore politeness and lose the niceties.*

This same villager favours more traditional means of information-seeking, and spoke fondly about the process of thumbing through their dictionary or their encyclopaedia if they need to know something; a practice they feel is being lost in the modern age. This was echoed by another respondent who described how 'We were doing the crossword and we had the dictionary out; well people don't even use the dictionary now!' This was an attitude shared by many others, and further asserted the preference by some for traditional modes of communication, such as face-to-face interaction and the use of the landline telephone.

Talking about one of their friends whom they said never touches a computer, one respondent stated 'She might not know she likes it, because she hasn't tried it', highlighting that oftentimes, it is a lack of experience and exposure, along with, on occasion, engrained preconceptions about the internet and what it could mean for you, which are the greatest barriers to the access and utilisation of online services. Similarly, a younger interview respondent remarked that 'The elderly people, the OAPs, the retired … they've never known it so they don't feel that they need it. Whereas if we didn't have it now, it would be, like, alien to us.'

6.4.4 The Digital Non-Movers (Happy as I am)

Alongside those who resist technology, and also those who are late turning to technology, stand those for whom technological advancement is of no interest. These people are satisfied they have reached a level which is appropriate for their needs, and have no desire to move beyond that point. They are happy as they are.

> *I like things to be basic. I don't get into all these extra facilities on a lot of things … For example, if I have a mobile phone, I want the most basic one … All I want to do is text and get a phone call. I don't really want to go on the internet with it. I've got a laptop … I have my certain things that I look at, but I don't delve into lots of other things … Some people know all the gadgets and new things that are*

coming out … Same with the television really; I just want a television that I can watch.

No, I think I'm quite happy at this stage. I mean, if my daughter says 'Oh you can do this', and I think it's a good idea, then I'll do it, but I think sometimes there are some things on there that you think – well, what's the point?

6.4.5 The Technologically Advanced and Those with Niche Interests

Of course, in amongst these users facing barriers to getting on board with the online world were also those for whom there was no apparent struggle. For instance, someone working from home, in a domain which was heavily dependent on IT services, readily embraced the superfast broadband upgrade without hesitation, knowing it would enhance working life and provide greater ease of communication with both colleagues and clients further afield.

Another respondent, one of the younger diary participants, found logging their technological interactions overwhelming and felt unable to continue with their diary, illustrating just how heavy their technology use was, and the extent to which it had already interwoven into their everyday life. This respondent, on reflection, felt surprised at their dependence on technology and the internet, and gave the following explanation:

Unfortunately, I have decided that I am unable to continue with my diary. I feel that my interaction logging is becoming increasingly vague, and I worry that I am missing interactions that will provide you with incorrect findings. I have found keeping this diary much more difficult than I had anticipated. I had no idea just how reliant I am on technology and the internet. It is certainly interesting, but very hard to keep up with. Juggling a full-time job, as well as a long-distance relationship that relies mostly on texting is difficult to log. I hope my 6/ 7 days' worth of logging will provide you with at least some information to help you with your studies.

This same respondent had requested that their parent remove photographs of them from Facebook as they were thought to be unflattering, prompting the parent to remark in their diary that 'Facebook is about presenting an image you want others to see.'

A family, immersed in technology, were found to seamlessly employ online technology of an evening on the sofa to communicate with one another when separated, writing in their interaction diaries from one particular evening:

> *Messaging on Facebook to and from son about up and coming exams*
>
> *Instant messaging on Facebook to and from daughter about EastEnders soap*

One respondent remarked the following after documenting their technological interactions in the interaction diary:

> *I thought I lived like a hermit as I work from home, but after logging my interactions, I realise I interact with someone almost every hour of the day in one form or another. Many face-to-face interactions are connected to an interaction by a technological method (i.e. delivery of groceries following online ordering; greeting guests following online booking).*

These are people for which social contact needs, business needs, and the presence of youth, mean signing up for superfast broadband is a near certainty. They already have their hook to the online world, and will move forward with their online use organically, without the need for any external interventions.

Alongside those users for whom technology had already become part of the everyday were people who had a niche interest; one which was heavily dependent upon reliable bandwidth. This niche interest was found to be an identifiable route into technology, and something which prompted them to seek out superfast broadband once it became available, in order to enhance their existing online experience. An example of this is the online gamer – one who engages in gaming in the online realm, interacting with other players in an online multiplayer environment. Figure 28 overleaf depicts one such respondent in St Breward. This particular respondent had a passion for ‘online sim racing’ (simulated racing), an activity carried out in his converted shed depicted below,

complete with an advanced race simulator setup for virtual racing. He described his own online sim racing community as:

> *… about a hundred odd drivers from all over the world who … they don't all race together, but if it's a certain type of race, then they'll join and you might get thirty odd turn up and race, and then, you know, the next night it might be a different race with a different car and a different track, and a different twenty odd will turn up and race then.*

When the passion for an online-based activity is present, the adoption of high-technology to enhance one's online experience is a given, with those already participating in advanced level online activities keen to make a step-change, and a guaranteed customer for superfast services. They, unlike so many others, already have their online 'hook', which sees them readily engage when the opportunity for greater bandwidth presents itself.

Figure 28: Example of Online Gamer in St Breward

6.5 Attitudes towards Superfast Broadband

With the arrival of superfast broadband in the village of St Breward, there was, inevitably, discussion about it amongst the locals. Commenting on recent interactions, one respondent noted that 'Computers do come up quite often, and I think it's probably being talked about more than it has been, because of the superfast.' This research wished to uncover how residents felt about the rollout of superfast broadband, and how they might be affected by its arrival in their village. Results showed that attitudes towards superfast broadband in the village of St Breward are mixed. Some business owners are feeling the benefit:

> *You'd have to get up in the morning to do the order because if you tried doing it in the evening, the system would be too slow or you'd get thrown off and have to keep going back in. So now, it's much quicker; you can do it any time of the day!*
>
> *It was only running about 2.5/ 3 Mbps connection, and we had some guests who wanted to live stream a Leeds United football match, and we just couldn't do it, and it was a real struggle, so we sort of took the decision with more and more people turning up with laptops and smartphones and all sorts that we'd get a connection there … I suddenly realised 'Oh heck it's here, let's get moving' … A quicker connection can only help. One of the key things is the size of files now that you need to download. They just get bigger and bigger and bigger.*
>
> *A good internet connection will help me to make contact with clients/ venues without a big phone bill. I will be able to order online and find information cheaply and easily. So much easier than before. I think I can manage to restart work. Or at least try it!*

These particular respondents were feeling the benefit in their working life, with superfast services allowing greater efficiency, ease of operations, and a degree of flexibility in terms of when certain tasks could be carried out.

Others are reaping the benefits in their personal lives, and were happy to outline how it has improved their online interactions when contacted for a survey follow-up by email:

> *I think that we probably spend more time on the computer now as it's quicker to access sites and we don't get timed out. Skyping is a bit easier, too. As a result, I*

get cross as I feel I've wasted too much time sitting at the desk instead of doing other things! … X now spends more time happily watching cycling events on YouTube as there's no stopping and starting of the video any more so, for X, that's a plus.

Since we have had superfast, we tend to shop a lot more online. I have purchased several software programs as downloads (which I probably wouldn't have bothered with if I had to wait for a mail order DVD). X and X also have a laptop each for their A Level studies. The children stream videos (educational as well as for amusement) from YouTube. We now have the BT Vision TV service and a recording box, which makes it much more convenient to watch programmes that are on while we are at work. To take full advantage, we are soon to be replacing our ageing XP computer with a new one. All in - a very positive situation.

We are now on superfast in St Breward. The reason was my sons wanted the fastest speeds as they game a lot online. So it's made the boys happier with speed. The side effect is less buffering on iPlayer if watching a programme on this, and the ability to view in HD. The change for me is watching more iPlayer content, and downloading items off the internet that are high definition, as the time to download is quicker now.

Superfast has been a big asset, as it's allowed various combinations of our devices to use the internet simultaneously without any degradation in performance. We have acquired a Google Chromecast, which works well due to having superfast. I guess to summarise, yes, pleased we have it; no complaints so far.

Husband can download his online games etc. much faster. We are able to watch iPlayer much easier. There is less lagging when watching the programmes. We are able to watch several different downloadable programmes on different laptops/ TV at the same time. Doing this is becoming a more common event as we do not have Sky, and the quality of the programmes on TV seem very poor these days. We seem to be using the internet as an alternative.

We have noticed that since having the superfast broadband, we watch a lot more TV on demand, rather than when it is actually broadcasted. We have also subscribed to Netflix, and watch films and TV programmes through the TV, and on our iPad and iPhones. This means we can be flexible with when we watch things, and know we can catch up on a programme if we aren't in the mood to watch it or if we're busy. Additionally, we now watch a whole series of something in one go, rather than wait and watch episodes weekly when they're on TV. Finally, on demand TV allows me to catch up on the soaps when I'm cooking and X is watching the rugby on BT Sport on his phone!

We did sign up for BT Infinity, and we are pleased we got it. It is faster and it doesn't 'drop out' like the other one used to, causing much frustration and wasted time … Another good thing is that we have been able to order loads of stuff online for ourselves and our home. We had been worried about this before we moved here … We have really enjoyed being able to stream Netflix. We were

a bit worried about entertainment when we moved here, having being used to the many events in X.

Yes, we got it here. Mainly as my son kept pestering, because his online gaming kept being disrupted. It is very good, and so browsing is easy, and online shopping is great. My husband relies heavily on the internet for his business as well, so all round we made the right decision.

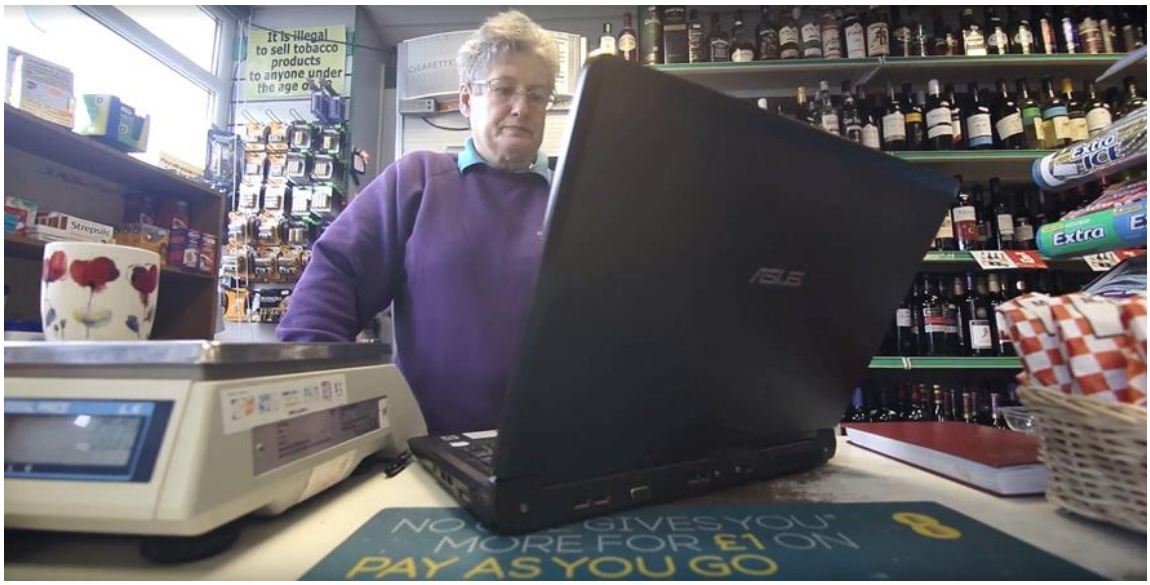


Figure 29: Co-Owner of St Breward Village Shop Conducting Work Online

Others that spoke positively about superfast broadband focused on what it meant for St Breward, acknowledging the positives of its arrival for the village.

I think most people are relieved it's coming because our broadband access - you were lucky to get 2Mbps. Watching YouTube … it's infuriating, because it stops/ starts, stops/ starts all the time, so it will be a great relief to get it … If you hear anybody talking about broadband speed, it's always because they're moaning because it's so slow … Anything from half past five onwards, it's virtually unusable. Because everybody comes home from work and gets straight on to check their emails and the rest of it. And it's just so slow; it's awful. So if you want to use it, it has to be late at night or during the daytime.

I think that when you live in Cornwall, everything is the end of the line; you can't go much further before you fall off the end of the country, and I think that for somewhere like Cornwall to get superfast broadband ahead of other places in the country; to be the first rather than the last is actually quite good for people here … There's got to be benefits; otherwise it wouldn't be there, would it? But I just think it should be used properly; it shouldn't take over people's lives. It is faster, and yeah, I think it'll have improved it, and I think it's good that it came to our village, you know, because we miss out on a lot of things like that … It was very slow here before. Time something else came along.

Others took this sentiment yet further, articulating how they hope it will rescue villages:

> *I think what it will do for St Breward and St Teath, and other villages around Cornwall; it gives them a chance of surviving. With things like the post offices shutting, so many pubs shutting and whatever, villages were dying. I just think it gives villages a chance, because you can run businesses from them rather than having to rely on towns and cities.*
>
> *We are retired, as you know, so we do not need it for work but we can see that it would be a great help to rural people working from home. I feel that it must be creating opportunities for individuals and companies to work from rural locations in our area … I think this must be re-opening the countryside to incomers. I hope it rebuilds small, rural villages. I would hate St Breward to die*

Reasons to sign up for superfast broadband included the desire for a faster, more reliable connection; pressure from younger people in the household; for the benefit of the children; to help run a business; the availability of a good deal; the sense that it was the 'thing to do'; to keep up with the times; because you may as well have the best going; and even just to put an end to sales calls regarding the availability of service!

> *They badgered me. I had so many calls. I was sick of the calls. I was told it was going to be the norm.*
>
> *Really, if they hadn't have offered it to us, to be honest, I probably wouldn't have said anything myself about it, but it was offered to us so we took it and I'm glad we did, you know.*

Two respondents in particular noted a distinct benefit of signing up being that they would be able to access certain sport content via BT if they did, be that football matches via a BT Sport package, or access to exclusive rugby screenings via BT.

Reasons to resist signing up centred on cost; hearsay that it wasn't really all that different; it being a hassle; and not wanting to change email address. Many thought it was more applicable on the business side of things than the recreational side of life, and consequently not applicable to their lives. A prominent explanation offered by

respondents was the feeling that it simply wasn't relevant to their needs, and that their current setup was, in fact, satisfactory for their individual online requirements.

> *We're still on the basic, and for our usage, there's no need for us to go to superfast broadband … I think people will be fooled in the village and will sign up for the superfast broadband when actually they don't need it. Like us - we use it for communication; we don't use it for streaming or downloading. So, therefore, there's no actual need for us to have superpower coming in to the house. And I think a lot of people in the village think they need it. But, actually, if you looked at their usage, they don't really.*
>
> *I think it will be good for people that download lots of stuff, but I don't necessarily think it's that good.*
>
> *I think the majority of people will be quite happy with what they've got. I think it's just a little extra to keep people happy, but personally, for what I use, it's not going to make the blind bit of difference if I had it or if I didn't have it.*
>
> *I think the majority would stay with what they have. As I say, the businesses, no, I think they've been gagging for it for a while, and they will sign up as soon as it's available. But for the likes of me who use it mainly for their own use and not too much else, I don't think they'll change. Obviously the youngsters, and there's a lot of youngsters and teenagers and that in the village, and they're going to want it … basically because it's the next step.*
>
> *It was explained that everything would be coming up so much faster so I thought 'oh, well that could be good', but now I understand that unless you want to listen to certain things it doesn't make a lot of difference.*
>
> *I don't think people see the need for it. You know, there's a lot of older people, and they're probably happy with what they've got … There's a few people that work from home, and I'm sure, for them, they'll be really pleased with it, if they sign up for it … I mean, if you're only using the internet for, say, social things, then … you know, if it's important for your work, it's probably really good, but not for, you know; if it doesn't matter, it doesn't matter.*
>
> *A lot of people (a) don't realise they could have something quicker and (b) might not be bothered anyway because they're not working at such a pace … if they had it they'd say 'Oh, that's marvellous' but now it's 'what do I need it for?'*
>
> *I think, again, it will be just on different levels. There'll be some people who'll be like 'At last!', and a few will be like 'Why isn't it even quicker?', and a few people won't even know about it … But those that don't know about it, or couldn't care less about it, won't be affected by it because it's an invisible thing. It's not like a wind farm going up where that might benefit some people and not benefit others. Because it's invisible, those who don't want to use it, it won't matter to them really.*

We have heard from a friend in the village that, although connected and of course paying a higher fee, superfast has made very little difference to their usage and speed of connection.

BT were the only supplier offering either free or highly discounted deals to sign up. My current supplier was not allowed to discount and competitively compete on equal terms … I do hope to convert to superfast soon, as my current ISP now has competitive packages to offer, but I will say the connection reliability and speed on standard broadband supply has dramatically improved over the past 18 months or so. Other locals who have signed up say they have not noticed a vast improvement in speed of internet access, as the claimed increased speed figures would suggest, and I suspect this may be down to computer technology not able to cope. As not regular users of catch-up TV/ online video watching and games, we have not yet found a problem with normal old broadband speeds! Maybe when we eventually upgrade to a smart TV, we will find the need for superfast essential.

Results from analysis of the interviews have also shown how many villagers were unclear on what superfast broadband was and how to go about accessing it. A selection of quotes illustrating the confusion which was oftentimes present, and the way in which word of mouth and visual cues are frequently relied upon for information, alongside local radio and local press, are included below:

I don't know how many people have signed up to superfast broadband. I think, like me, not a lot of them know what it all entails; how to get on it; what you have to do. I've asked some of the Openreach guys when they're working on the box across the road and they just said 'Nothing to do with us, we don't know', so you don't get that information. In the past month, I've had four different emails from BT all offering exclusive different packages but they're totally confusing … I think to work out what package, I need a spreadsheet.

There's been a distinct lack of good information about how people can connect up to superfast broadband in St Breward and nobody really knows what stage it's at. There wasn't a fanfare … A lot of the older people will not go online and look up that information. There's one guy – he's quite housebound, and he's always on the internet … And he had obviously been online months ago and said 'They're promising this, they're promising that, why hasn't it happened?' So he was obviously accessing the websites that were giving you the superfast broadband information, but he would have been in the minority; most of us would wait for somebody to tell us that it's there and I'd be the same – just wait it out, and as I said, X's email said that he had signed up and he was dead chuffed.

But a lot of people don't realise that you have to subscribe to it. They just think that you get it. There's been so much hype about it, they don't realise that you actually have to subscribe. They just think you get it automatically; well, you don't. You got to pay for it, like everything. They just thought that because it was here, everything would be automatically upgraded.

When we saw the digging up going on, it sort of reminded us that it might be happening, so we looked it up on the internet and we found more information then.

I think everyone's aware of it. I don't think necessarily everyone knows what it means.

So I think that people are aware of it. They know, because a lot of people kept asking when it was happening.

On the whole, there was a sense that people felt unsure as to how superfast broadband would impact their lives. And, furthermore, lacked any real source of inspiration as to its possibilities; due, in part, to a lack of exposure to its existing potential. This alone points towards a low level of digital readiness in the rural village; a village not yet poised to make the most effective use of their new service. As one respondent summarised, 'I suppose if they don't want to, then that's fine. But yeah, if they don't know what they're missing, then that's a pity as well really. So a bit of education mightn't hurt.'

One woman highlighted how local internet users are often reliant on the expertise of others, and how they tend to do better when they have some technical and social support:

Most people are happy to have internet as long as there is somebody who can fix it. A lot of people use the same person to fix their computers. We call him 'Saint X.' X comes and says 'That's kaput' or 'We'll do this', and I trust him.

These actors, which Bakardjieva (2005) would term 'warm experts', were found to be an important feature of the journeys of those with poor IT skills in getting online, providing the necessary knowledge and skills in order to support their development. In a similar

vein, and again highlighting a fondness for the support and guidance of others when carrying out online functions, other respondents spoke positively about the local internet café and the support they could receive there - it was something they could fall back on if they needed a helping hand.

> *They're good at finding different websites for you. Quite knowledgeable down there. If I sit on the computer down there, hopefully X is somewhere around … Where I can say 'How do I get out of this? I've gotten into something I'm not sure of.' X is very good. X has helped me booking hotels … Or getting cheaper deals.*

Young people were repeatedly identified as the archetypal 'warm expert', with one respondent commenting:

> *When I first got that phone, I took it down to X & X, and got one of their daughters to set it up for me. They're so quick; you can't see what they're doing, because they do it automatically; they're brought up with it … I need someone to sort my telly out. Another teenager, I think. I've done something and I can't pause my live TV. My friend said 'You need a child!' They're brought up with it; they know what they're doing.*
>
> *If I had children here, or if this sort of stuff was commonplace more, I'd pick it up more.*

Overall, results showed a certain level of resistance to new technology, both in practice and in attitude. This may be seen as a consequence of place, and simply the way in which rural village communities have, hitherto, constructed their lives and their operations within rural place. What is clear from the research is that there is a complex trichotomy of place, social norms and visions of technology at play; one which needs to be decoded in order to bring about the desired state of digital readiness within the rural realm. Whilst there will always be those who get along with technology, and readily and willingly make good use of the most up to date technology in order to enhance their lives in whatever particular ways appeal to them (this research has identified such

people and showcased their views and their technology use), alongside those people lies a mix of rural villagers of varying levels of engagement with technology, many of whom are confused, sceptical, uncertain, unskilled, uninspired, or lacking in technological exposure. All these individual types, together, form part of the rural village habitat, and many of them will require heightened levels of information provision and intervention if they are to travel, alongside those more advanced, towards a new level of sustainable digital operations within the rural place. Without such changes, the gap between those who already have their digital hook, and those who do not will only continue to widen, and at an ever-accelerating pace. Additionally, those services which promised so much, like superfast broadband, will continue to fail to be optimally seized and realised.

During this research, some respondents expressed their frustration at being unable to receive an adequate broadband service at their homes, typically due to their moorland location.

> *Unfortunately, it is still not available to us at X, so it has had no impact at all. Other than frustration at it being available less than half a mile away. But that's life, I suppose.*
>
> *Although St Breward now has superfast broadband in the village, our lane at X has not. Accordingly, we have no access to this facility.*

These people are what Superfast Cornwall would call 'the final 5%', due to be covered by alternative technologies in due course. Although, it must be noted, at the time of research, these people did not really have any clear idea as to what their internet futures held. One such family (a family with a school-going child) were experiencing difficulty with their son's homework assignments. With incredibly poor and unreliable broadband, online coursework was not always possible to complete. This boy's mother was adamant

that her son would not receive detention or be discriminated against in any way as a result of his difficulties in accessing online materials. This boy, walking out on to the moor with an internet enabled telephone in the hopes of accessing a signal so that he could complete his homework (his mother forced to explain to the school that it was not always possible for the child to complete assignments which required internet research) lies in contrast with the son of the work-from-home dad, who connects to the internet via his games console to play games online with his friends. This was a stark reminder that whilst we look towards an education system which seamlessly integrates digital learning, not everyone is privy to adequate internet service in the home. It highlights, once again, the value of public access points in a village setting where students and adults alike can benefit from IT services. Indeed, this young boy's farmer father was himself perplexed that he now had to register his cattle's movements using an online system – yet another frequent battle to be had with their unreliable moorland internet connection, and perhaps yet another candidate for a public access zone or a 'community broadband hub.'

6.6 Superfast Broadband and Education

St Breward is home to one community primary school, which accommodates a total of 44 pupils. This school is twinned with the primary school in the nearby village of St Teath, with one Head Teacher splitting their time between both schools. The school's IT setup is as follows, as described by a staff member: 'The school has a wireless network. We've got fibre to the cabinet in school. We have a suite of laptops that the children access wirelessly. We've only got three classrooms. Each of them has an interactive whiteboard, with a wireless network point and a couple of PCs in each class as well. And at the moment, that's about it.' When superfast broadband came to the village of St Breward, the local primary school received an automatic upgrade, putting them

amongst the many other schools across Cornwall now equipped with the latest high-end broadband technology. Phippen (2014) has commented on Cornish schools and their efforts to effectively integrate digital learning into the curriculum. He asserts that:

> …schools that facilitate this kind of learning are currently the exception, not the norm. While there are clearly pockets of excellence in Cornwall, there are also many schools struggling with the technology they have at their disposal and frequently having a belief that the mere presence of technology in a classroom means that learning opportunities will somehow miraculously appear!

An interview with a member of St Breward community primary school's staff indicated that despite having the technology in place, they may, as Phippen has outlined, not yet be making best use of it. Commenting on the difference made to the school since the upgrade went in, the respondent noted:

> *I don't think the school is big enough; or we certainly don't use them in a business sense; we use them essentially for children to access learning resources and carry out research, and for staff to conduct their business in terms of planning, their own research, emails back and forth; but I just don't think we're big enough really to have noticed the difference.*

The sense that superfast broadband is more applicable to bandwidth-greedy businesses has seeped into the realm of education in the rural school environment, with no real impact of heightened connectivity yet identified by the school. The feeling that the school was not operating at a level where increased bandwidth would make a difference may be indicative of a missed opportunity to implement more sophisticated learning opportunities, which depend upon that bandwidth in order to function optimally. Inspiration from an external source concerning how to seize upon this newly acquired service, and how to make it a real asset for students, could perhaps go some way towards modernising and elevating the learning experience for students at the school. Successfully integrating digital learning into the curriculum of rural schools, and

changing their modus operandi, is not something which will happen overnight merely via the introduction of kit; it will necessitate a shift in mind-set of those delivering education, as well as some best practice guidance on how this can be best achieved.

Interestingly, both St Breward and the nearby school with which it is twinned, St Teath, have a near identical IT setup; the only difference being St Breward has superfast broadband and St Teath (at the time of fieldwork) does not. The respondent could not identify any noticeable difference between the two schools with respect to technology, highlighting again that, perhaps, superfast broadband is not being used to the optimum in education delivery, with online delivery not integrated into the learning curriculum to any significant degree that would allow the extra bandwidth to have a discernible impact.

Plans for IT investment at the school are modest. As conveyed by the respondent, money is tight and they are heavily dependent on fundraising. 'It always is about our eternal issue in small schools – funding. If something was free as part of our contract, we'd take it, and we'd want to know how to make best use of it and take advantage of it.' This is especially so following the recent loss of deprivation funding for the school. 'Each time we buy 2/3 laptops, it's actually a major investment for the school because there's so little cash … the next lot of purchases are likely to be tablets or iPads or something of that nature to complement the laptops that we've already got.' But it seems the optimal, effective use of all this equipment, and the fibre optic network to which it connects, will depend heavily on clear, coherent policies and instruction from higher authorities. Speaking on future plans, the respondent stated the following:

> *I think when we start looking at developing the IT side of things, when the new national curriculum comes in in September, and we're into the children doing more programming themselves and things like that; I presume the download*

speed and the upload speed that they'll be using and practicing on when they're doing their own programming will be supported.

A local, IT savvy, home-working parent told me of their young child, already au fait with all manner of technology in the home and, at the time, linking with friends from far afield to play Wizard 101 online, as well as making plans to link up with other children in the village to play Minecraft. Ideally, this eager young child's IT skills would be fostered both in the home *and* in the local school which the child attends. As expressed by Phippen (2014), what we need is an education system that 'realises that digital learning is about knowledge and skills, not kit.' Rural Cornish schools which have, hitherto, not had stable, reliable broadband available to them as a learning resource will be in need of some instruction on how to optimise their use of it, lest they just carry on as before with no real change or progression with respect to the way in which they deliver a modern education to today's young people. The children deserve a curriculum which will engage them, and expose them to the many possibilities afforded by advanced technology. And whilst the kit might be in place, and, in some cases, the motivation to use it also in place, the know-how and knowledge on how to make best use of it are not necessarily established, highlighting a need for some direction, either in terms of curriculum or in terms of innovation and how to make technology worthwhile and interesting for primary school students within the context of the rural village school. As one Cornish Head Teacher put it, 'It is a medium for learning that they respond to, and we would be foolish to ignore its potential.'

A selection of quotes from Cornish primary school Head Teachers contacted during the course of this research has been included in this section, just to give a flavour of some of the problems these primary schools are facing as technology moves on, and as expectations of education delivery in primary schools are heightened in this information

age. Feedback from the schools that responded to questions sent to them was mixed, but many fell in line with the experience identified at the school of the case study village. Some schools felt they were managing well with adequate digital training in place for staff. Others were frustrated at a lack of curriculum guidance on how best to integrate digital learning. Whilst some schools felt they were realising the benefits of superfast broadband and working in new and more efficient ways, others felt the upgrade had not granted them the improvement they had been hoping for. Issues around funding and a lack of investment in training came up with a number of the schools, as did worries around a work force that was not yet fully equipped to deliver learning in a digital context. Many expressed that they would welcome more training and input from external bodies in order to enhance the student experience at their schools. It seems the motivation and the desire is there, but the know-how and the resourcing is not always at the required level, leading to some major frustrations for those involved in education delivery.

> *We live a digital world but the investment in IT equipment, training and support for schools is very poor, especially small schools with limited financial resources, and for older members of staff whose teaching skills may be good but whose IT skills are not so good.*
>
> *The pressure to keep improving as the bar gets raised higher and higher is almost impossible. I've been a very happy Head Teacher for many years and I'm retiring early this summer. I've had enough.*
>
> *Some of my staff are very IT savvy, others are not (mainly, although not exclusively, the more mature members of staff). It's a constant training issue.*
>
> *It is an on-going process of development. Teachers are keen and willing to learn; other staff in school have limited skills.*
>
> *Rural communities are isolated and depend on the internet even more proportionally, and we are really disapointed that the Objective1 money for Cornwall has not resulted in an improvement for our school.*

Any help to further develop the CPD of our staff is always welcome. This is an accepted way of supporting pupils in their learning and tends to engage pupils more fully. Support to use new platforms to aid teaching would be helpful.

We have bought in a new programme to support the new curriculum, but information is not really adequate to support all areas of digital learning.

It is a concern that this area of the curriculum is constantly moving forward, and the issue is ensuring that enough budget is identified each year to be able to keep equipment etc. up to date with changing technology.

The curriculum seems to be very limited to coding at the moment, and it assumes skills from children that are not always there. To use digital learning it needs to be incorporated across all subjects and that is an issue with staff and pupil skills, equipment and curriculum time, which is very squeezed.

The government should not make assumptions that all children have the skills and access to be competent at the basics. They don't, and in some parts of the world, poverty and lack of IT facilities hamper this basic knowledge. We are still teaching mouse skills and keyboard skills on entry, and until those are in place the rest can't happen.

Figure 30: An Education Professional from St Breward Community Primary School

6.7 Summary

This chapter began with an exploration of the meaning of technology in the rural village, addressing how rural residents utilise and imagine technology. The distinct preference for face-to-face communication was evident at every juncture, with the landline telephone the traditional go-to device of choice as a communication supplement to real life exchanges. What really shone through over the course of the research was the prevailing sense that many people were happy with the status quo; their existing modus operandi was seen to be adequate, with few aspirations for yet more beyond that articulated. Research uncovered a mix of technophobes and technophiles, as referenced in the review of existing literature. There were those who saw the good in online connectivity, and the potential it could unlock, but there were also many people who conveyed their fears about using technology, and articulated their worries about what it would mean for the future of community life. On the whole, the use of high-technology across ego networks was at a relatively low level. There was also room for expansion in terms of employing the internet to intermix with more diverse groups, if desired. Young people were found to be engaging minimally with subscriptions to local email lists/ list-servs/ discussion forums, yet they were described as conduits for IT knowledge by much of the village demographic, or what Correa and Pavez have termed 'technology socialization agents' (2006: 259). Contrary to assertions in the literature, the use of technology was found to be sensitive to distance. Additionally, results suggest that survey measures may be overstating the use of technology in rural locales. Taking Skype as an example, we saw how 44% said they use Skype via the survey; yet only 28% demonstrated the use of Skype in reality across their ego networks via the social network analysis means of enquiry.

Mobile phones are more likely to be used with those closest (in terms of tie strength) to the ego, and the closer the tie (again, in terms of tie strength), the higher the likelihood that multiple modes of technology will be employed in order to sustain the connection. With a preference for local networking, and a tendency to use technology more so with those in their inner circle than those outside of it, one could say villagers would perhaps be more open to high-technology which serviced those preferences. Could it be that the route into increased technological activity in the context of the rural village is via platforms which serve local networking, and enhance the maintenance of relationships with existing strong ties? Haythornthwaite asserts that 'The power of the Internet lies in the way it forges connections between people where none existed, and thus in how it builds new weak tie networks' (2005: 140). However, this assertion may be one which does not hold initial appeal for members of a rural village community. Whilst yes, making links with new people in faraway places may be a distinct advantage afforded by the internet, in the case of the rural village, where local networking and face-to-face communication take precedence, and where ICTs are employed minimally by so many, perhaps the selling point of the internet needs to be turned on its head, and posited in such a way that it can be used to reinforce strong, already present links, and local ties, by making the internet local and more applicable to the rural village population. In focussing on the reinforcement of these ties, rather than the creation of anonymous and distant ties, it may be possible to give more rural villagers their 'hook' to the online world. Like the online gamer who has their sim racing, the villager who has their own local tendencies and preferences can have their equivalent, whether that be via the establishment of a community network, or the weaving of high-technology into existing community networks and group structures, making it applicable to the lives of rural villagers, and seeking to enhance their existing and preferred experiences, as opposed

to creating them anew. Rather than focussing on the death of distance, the rural village calls for a revival of the local, and the use of mediated networks to enhance and sustain what they already do so well – community.

Results revealed a variety of internet user types – those who are frustrated by their non-use; those who are embarking on a journey of internet adoption later in life; those who resist engagement with the internet; those who use the internet via a proxied user; and those who are content as they are, with no desire to step up their current internet usage to a higher level of operation. Alongside all of these user types, sit those who are already operating at a high level of online technology, typically those with niche interests or work requirements driving their desire to advance with respect to technology and the online realm. This colourful blend of internet users all contribute in their own way to the makeup of the village internet population, and their stories and the ways in which they imagine and utilise technology are what should inform how new high-technology is delivered to them. Alongside the kit must come an understanding of who the kit is being targeted at, where it is to be used, and how the intended audience can understand it and come to terms with utilising it in a meaningful and sustainable way.

In terms of superfast broadband specifically, results showed how some residents were an easy win and quickly got on board with the new technology. However, many others struggled to see its applicability to their own ways of living. There was a level of confusion present with regards to what it all meant, what it could offer, and how to use it. This was something which strongly called into question the state of digital readiness of the village. It was clear there was a need for information, perhaps to be delivered via means which are better suited to the communication preferences of the locals. The knowledge needs of the community with respect to superfast services need addressing,

and the most effective means of informing the community may be via face-to-face contact, where possible, or, alternatively, via the key social actors identified over the course of this research. The same could be said of the local school, with information, guidance and inspiration likely to be welcomed if made accessible and expected to contribute to the optimisation of their use of the technological facilities now at their disposal. Tookey et al. (2006) highlighted issues around local advertising ceasing at the point of availability being achieved, and it was clear in St Breward that this was also an issue. Confusion remained beyond the point of access and switch on. Extending campaign durations, alongside other measures, would likely lead to increased uptake over time.

The validity of many of the assertions in the literature was confirmed in St Breward, and found to be applicable to its rural population – the need to consider the specific local needs of places (Salemink et al., 2017); the need to think about the specific characteristics of the place and the population, and to be mindful of their fears of the foreign and new situations (Correa and Pavez, 2016); the need to contemplate the barriers to adoption present (Huggins and Izushi, 2002); the need to consider the life course of residents (Baker et al., 2017); and the need to be mindful of the history and context of the place (Whitacre, 2010). All of these points were found to be applicable to the rural village condition when considering matters of digital inclusion, and the creation of a sustainable digital neighbourhood – a neighbourhood in which the technology becomes more embedded, and the community appreciation for, and use of, technology is something which can be sustained – the meaningful and sustainable use of technology in the community setting, in a way which is both relevant and appropriate for the community, and works for the community in the longer term.

Knowing the wide variety of different internet users that make up the whole within the context of the rural village, we also see that the technologically advanced are the exception rather than the rule. Much of the rural village population revealed a dependence on youth, or, sometimes, even a spouse to fulfil their online requirements. The different social actors described in the literature were all identified in amongst the rural village population – the surrogate users (Selwyn, 2006); the warm experts (Bakardjieva, 2005); and the digital champions (Ashmore et al. 2017). All of these actors form part of the digital village eco-system, and engagement with some of them may be key in advancing the digital agenda under the rural village condition.

CHAPTER 7: RURAL VILLAGE SPACES AND TECHNOLOGY

7.1 Introduction

The previous two core results chapters have delved into the composition and structure of villagers' social networks, and deciphered how they employ technology in order to maintain their relationships. Rural villagers' communication preferences, and their imaginings of technology and what it means to them, were uncovered. The research in St Breward points strongly towards the need to consider the specific preferences, requirements and characteristics of rural place; to factor in the unique set of technological needs of rural place; and also to be mindful of the barriers therein. It also highlights the need for a considered approach to information dissemination, and the potential benefits of interventions in order to assist those user groups who require tailored support. Adhering to these guidelines will contribute towards ensuring that the village community as a whole makes a technological step-change, and not just the technical infrastructure of the village. This current chapter moves to describe some of the measures being put in place in St Breward in order to aid this mission. It addresses the digital inclusion efforts spearheaded by a local village gatekeeper; the establishment of a community hub in the village; the ways in which locals are appropriating technology in order to meet their own social, community and technological needs; and reflections on how all of this could potentially be enhanced and made more sustainable in the longer term. In essence, this chapter is intended as a means to showcase some of the case study's early digital inclusion efforts, and to address the symbiosis of factors which led to their emergence. This exploration is framed within the understanding, having conducted the fieldwork, that '…the opportunities provided by the Internet have to become valuable in their everyday lives to deserve the amount of effort it requires to overcome the individual and contextual barriers' (Correa and Pavez, 2016: 259).

7.2 Digital Inclusion Efforts in St Breward

The village of St Breward operates a community website (http://www.stbreward.net/), as well as a community mailing list run by a local volunteer. Additionally, a parish magazine covering St Breward, Helland and Blisland with Temple offers more personal and local items such as think pieces, jokes and 'much more.' This is in contrast to the village website, which acts more so as an information resource, offering details of local news and events. This in itself is an interesting finding, that some less informative and more light-hearted material is reserved for the analogue format of the parish magazine, a source which will be distributed more locally, and not subject to the wide dissemination reach afforded by the internet website. Additionally, some village groups have their own websites. Whilst online technology (primarily email) does play a role in the facilitation and organisation of village community networks, it is certainly not deemed critical to their functioning. Face-to-face interaction, word-of-mouth, and telephone conversations still play a crucial role for many villagers; though the number of parish council members requiring a hard copy of meeting minutes delivered by hand due to the lack of an email account has diminished, making organising such dissemination somewhat easier for the parish council members responsible.

As superfast broadband has been rolled out across the county of Cornwall, some villages have been taking steps to introduce the high-tech service to their community spaces. St Breward is one of those villages and, in 2013, their local Institute and War Memorial Hall re-opened having undergone a re-vamp, receiving the very best of technology – wireless superfast broadband, a SMART Board, speakers, a visualiser, a PA, and a hearing loop system. The internet connection in the hall, as with many things in the rural village, came about through the efforts of motivated and driven village gatekeepers. They sought

funding which was duly granted, and the hall went superfast. Prior to acquiring funding, one village gatekeeper articulated their intentions:

> *We are seeking funding to provide an internet connection to the hall. We haven't got a dedicated phone line, so we're starting from scratch. We cannot provide it out of our income so we need a grant to do it, and we need to have a five year project because we can't guarantee we'll have the income to do it. I'm confident if we get the money that I'll be able to open the hall one morning a week for people in the village who don't have the internet access, and perhaps don't want the internet access, but may need to use the internet, or someone to help them use the internet. For instance, if they need to contact the council. A lot of things are only online now. People need to look things up. People need to report things. We would ensure there was somebody in the hall to help the person to use the computer to gain internet access; to help the person use the internet. An honest, reliable, trustworthy person there to help, who would respect the person who was using it, and what they were looking at. You try reporting a pothole over the phone; it's much easier online!*

With the new fibre optic broadband service in place, one enthusiastic village gatekeeper set about making it an asset for the community of St Breward. The idea was born to run a five week course on 'Using the Internet Safely and with Confidence.' With support from Superfast Cornwall, Citizens Online, Cornwall Rural Community Council, the Co-operative and the University of Plymouth, and through the steely determination of St Breward's digital champion, this approach was put into action and sustained within the community. With a mass of local knowledge, and a considerable degree of local influence, this particular gatekeeper knew in advance which people in the village were eager to learn and get online, as well as who would benefit from doing so, and before too long the five week course was fully subscribed.

Reactions to the IT Course were overwhelmingly positive. One participant described their experience in their diary: 'I feel far more confident. X is going to set up a 'drop-in' session each Wednesday next year, so I will be able to sort out difficulties. Y also advised me on what to buy.' Another was eager to carry on after their experience: 'I'd like to do

that course all over again. When you haven't done it before, trying to remember it all!' One respondent was considering signing up to superfast broadband at home: 'I'll see how the course goes. It is fun; we're having fun. But I've had three machines so far, all different. It's very confusing. I might sign up after the course.' It was clear that many of these people, were it not for intervention in the form of a course, may never have fulfilled their ambitions of getting online, or at the very least would have approached their goals more slowly, and certainly would not be contemplating superfast broadband installation in the home any time soon.

With a successful initial five week run, IT courses were re-commissioned many times over, this time with a concurrent 'IT Drop-In' taking place in an additional space within the hall. Writing on the offering, one gatekeeper outlined the following:

> *Since the Autumn of 2013, we have been running various 'Computer' Classes/ Sessions in the Hall. The aim is to have a community in which everyone, whatever their age, income or education, can use the internet safely and with confidence. We consider it very important that people become familiar with the use of computers, not necessarily in great depth, but to be able to access services…*

The village gatekeeper/ digital champion, was focussed on the needs of the local population, and their preference for communal, local learning in a familiar environment.

> *We have a lot of demand for this type of training from the local population, so it's a fantastic opportunity to be able to provide courses on people's doorsteps, meaning that they don't have to travel far, and can learn together in a venue that they are familiar with.*

Computer Courses- January to Easter 2016

Sign up for Computer Classes in the St Breward Institute & War Memorial Hall. All sessions except 'Drop Ins' must be pre booked as there are limited spaces available. Cost £5 per session except 'Drop In' sessions which are £3 We may be running an Introductory Course *'Using the Internet Safely & with Confidence'* so if you know anyone who might be interested do ask them to get in touch

Jan 13th – Getting to Grips with Tablets,

Jan 20th & 27th – Getting to Grips with I Pads

Feb 3rd & 10th – Buying & Selling on E Bay, course full, waiting list open

Feb 17, 24 & 2 March – Editing photos, using PhotoScape (free download programme)

March 9 & 16 – 'Drop In' sessions

Figure 31: Example of Computer Course Offering in St Breward

Figure 32: Community Member and Citizens Online Signing Up Residents to IT Courses outside the Village Shop

Figure 33: IT Course run by Citizens Online at the Institute and War Memorial Hall

Interaction with local villagers did indeed highlight an appetite for learning amongst some residents. Many were happy to acknowledge that the internet was 'a good instrument for learning', and one respondent joked that them being online would be good from other people's point of view as well as their own – the poetry group would no longer have to telephone them with updates. Many lamented missed opportunities, and had come to terms with the fact that they had been, in a sense, left behind, with educational intervention now needed to get them started with technology in the modern era. It is people like this for whom the learning being delivered in the village Institute and War Memorial Hall presents an opportunity.

> *Three years ago, I should think, when everybody first started to get computers, I thought, 'Oh well, I don't think I need bother about that', but I think it's all developed so amazingly quickly that if you haven't got one, you are at a loss now.*

This same respondent receives support from family and neighbours in looking things up online for them, but craves independence from that setup, wanting to be able to carry out activities independently.

> *Somehow you don't want to have to go and do that. It's much quicker to do what you want yourself. For, everlastingly, sort of landing on their doorstep and saying, 'Please will you look up?', you know, and that sort of thing.*

However, some were sceptical about the willingness of some of the older generation to learn, again highlighting one of the perceived barriers to access present in the rural village community:

> *We're certainly still behind the rest of the country. As much as we might have the technology coming into our village with regards to the internet; still people are very much, you know, I don't know … My Grandpa that lived in X, when he couldn't walk enough, I taught him how to use the internet and do a shop online for Sainsbury's. Whereas, I think people are quite stubborn in St Breward. They'd still get the bus – the Sainsbury's bus or the Asda bus – every week, and still do their shop rather than learn how to. They'd be scared to put their bank details on*

to the internet. Certainly for the older generation, I don't think they want to learn. They're quite set in there ways. They're not educated with regards to technology.

The mind-set of those accustomed to getting by without the internet remains a considerable barrier to access for some particular cohorts, but they are to be encouraged and not dismissed and written off. In a similar vein, another respondent described how they had shown their parents in law Google Earth: 'They think it's absolutely fantastic, but they would probably shy away from trying to get set up themselves, because they just feel it's too technologically ahead of them to even bother.' This same respondent, who was very IT-savvy, commented on how you can easily slip behind with things moving so quickly, and acknowledged the fear of the unknown and of getting it wrong that people feel, stating that, 'Once you've overcome that, and you know what you're doing, then it doesn't matter.' IT courses amongst like-minded people in a safe space, where those who know the local population (the gatekeepers) can facilitate getting people there, provide a vehicle for tackling such barriers, and St Breward's efforts in that regard have demonstrated just how successful such work can be.

7.3 The Community Hub

The community spaces within a village are where the village truly comes to life. It is through the meetings, the activities, the group sessions, and the socialising carried out within public and semi-public village spaces that we begin to see key aspects of village life unfurl. As asserted by Day and Harris, a community resource centre needs to be 'A non-threatening, community-managed public place' (1997: 16), and St Breward's Institute and War Memorial Hall is just that. One community gatekeeper articulated why they felt an internet-enabled community hub was very much required in the village of St Breward, a sentiment which really captures the feeling on the ground amonsgt rural

village residents, and one which can also be said to apply to other rural locales further afield.

> [It is for] *People who do not have the internet at home. This is not an affluent area and the cost of having the Internet at home is considered by many to be prohibitive. People need to access services and cannot get to the Cornwall Council 'One Stop Shops' located in town. St Breward, like many other rural villages, has no public transport, plus the high cost of fuel restricts the use of a car for a journey to a 'One Stop Shop.' Cornwall Council are encouraging people to access services online without giving people the means to do so. Job Seekers need to access the internet to search for employment. More and more jobs are only advertised online, or need to be applied for online. The government are working towards benefits being applied for online. The provision of superfast broadband needs to be backed up with the opportunity to learn and use the internet for daily life.*

This same respondent also described the social element of such an arrangement, highlighting how being amongst those with whom they are familiar, and in a space in which they feel secure, are both important considerations in the implementation of rural village interventions.

> *The community of St Breward need somewhere locally that they can use a computer and the internet to access services, look for and apply for jobs, and, in time, to apply for benefits. The community are not all computer users. They need a 'real person' to help them use the computer and the internet to gain access to services etc., and to help them gain confidence. Many of the people using this hub would appreciate being able to meet up with friends to deal with these matters together. They need to do this in a secure location that they feel comfortable using. People are unlikely to admit that they feel lonely or isolated. Being together to access services and a chat could make quite a difference to their lives.*

This quote also reiterates the importance of the 'warm expert', and villagers' dependence on that person who can impart technical knowledge and save them when they fall down. Some villagers felt they had such a setup in the internet café located at the post office (now closed down). One respondent described the service as follows:

> *If my computer is broken, I have to go down and use their computer. I've done that a few times. It's always there. It's always an option. It's important, yeah, because being out here in the villages and that … without the computer, because*

> *all my banking and everything is on it. You're not on the high street with all the banks and the shops and everything. You can't just call in. A lot of the children in the village use the computer for schoolwork down there.*

Similarly, another respondent described how:

> *A lot of people had internet but didn't have a printer, so actually the setup – loads of people would come and print out tickets for holidays. Loads of people would come and print out research stuff for homework. A lot of the locals would go on the computer to print stuff. Holidaymakers used to use the WiFi in the café.*

Use of the internet café in the village illustrated a need and justification for such a place where people could go, whether it be for support and guidance, as a backup when things go wrong with IT at home, for homework, or simply as a venue to print. With that service now no longer available, the rise of the community hub in the Institute and War Memorial Hall is to be welcomed. The availability of such services under a community hub model is something which other Cornish villages hope to emulate. A representative from Stoke Climsland who completed an interview as part of this research journey described how they, too, 'hope to be getting superfast broadband in our community centre, but the wheels of decision making are grinding slow at the moment. We've got lots of ideas of how it could be used, so it can't come too soon!'

Conditions in St Breward were aligned well in order to facilitate their success with the community hub, and the harnessing of superfast broadband. A space valued and developed by the community, technical infrastructure, the use of technology championed by a local gatekeeper, and a community gathered and guided by that same gatekeeper came together under the right conditions in order to effect change. To become a vehicle for social change, access and infrastructure need to align with a suitable space, and be facilitated by the relevant social actors – both the social

organisers in the village with local knowledge, and those who can impart technical knowledge.

Figure 34: St Breward Institute and War Memorial Hall

Discussions were soon underway for a selection of additional programmes of activity in St Breward's community hub. One driving force behind the movement suggested she would '…do a big launch and use St Breward as a 'hub,' drawing in our adjoining and adjacent parishes to maximize the service we will be offering.' The creation of a broadband equipped community hub will indeed be an asset for the community. With the closure of St Breward's only public access point equipped with a PC (the post office café), it will provide a service which some villagers expressed a keenness for throughout the course of this research. But those in charge are cautious; not wishing to invest too heavily in something which they worry will not take off. The key will be to design the service in such a way that it is relevant to the community which it serves. 'A community

access site is rarely just a place for access. Activities, services, and programs are in support of community activities; access is obtained in a context of broader social or economic goals or activities, which are communal and not just individual, and the site is designed, staffed, and equipped specifically with these goals in mind' (Gurstein in Blanton, 2014).

Community Cafe now open in St Breward

Posted on 05/06/2018 by Veronica Stansfield

— All ready for the opening of the Cafe L-R Sue Brown, Sheila Nottle, Tracey Haynes with first customer Eileen Marriott

The Community Cafe in St Breward Memorial Hall opened on Monday afternoon 4 June and will be open on the first and third Monday afternoon of the month between 2-4pm

Figure 35: St Breward Community Cafe Announcement

7.4 Community Appropriation of Technology

Further digital inclusion efforts saw St Breward link up with other villages (St Dennis and Pendeen) as part of a 'Digital Halls Community Network Event', the intention being to showcase benefits of supporting other locales and sharing initiatives.

Figure 36: Digital Community Halls Network Event in St Breward Institute and War Memorial Hall

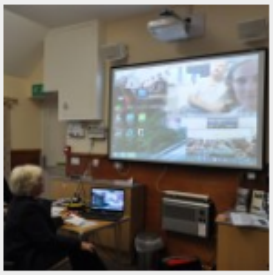
This initiative also served as an opportunity to witness the power of technology amongst friends in a familiar setting. Response to the event was positive, with locals enthusiastic to get on board with the venture. St Breward History Group received the opportunity to share with others how they had used the internet and IT facilities in the Memorial Hall to aid research for their book, *Memories of St Breward – Village Life Recalled*. The event provided the opportunity for the village of St Breward to take control of the technology at their disposal, and also to showcase how they were appropriating technology for their own means, to serve their community groups and enhance the member experience.

Digital Halls Community Network Event on Sat 14 Nov

Thanks to everyone (especially those who travelled from Liskerrett, Stoke Climsland and Otterham), who turned out on a wet and miserable Saturday afternoon to see us 'connected' to the Training & Work Centre (TAWC) in St Dennis and The Centre of Pendeen (a community centre in West Cornwall; an interesting experience and one that we hope to build on in the future.

The event was part of an exciting venture involving the Economic & Social Research Council (ESRC), Cornwall Rural Community Charity (CRCC), Cornwall Council and the Universities of Falmouth and Plymouth.

People at St Dennis spoke about computer courses helping people learn new skills in the search for employment, the Pendeen Patchwork Group told us about skills being passed on through working together – they also link up with patchwork groups in South Africa, America and Australia. St Breward History Group told everyone how using the Internet and IT facilities in the Memorial Hall had helped with research for their book *'Memories of St Breward – Village Life Recalled'* to be launched in the Hall on Sunday afternoon 22 November



— Val Hill from the History Group talking to people in St Dennis and Pendeen

Figure 37: Community Website Reflections on the Digital Halls Community Network Event

Again, this event illustrated community willingness to engage and try out new approaches to technology. Bringing the social aspect of community gatherings, facilitated by a gatekeeper, together with the local community space and the technological affordances of superfast broadband yielded inspiring and novel results.

A further example of the community appropriation of technology in the community hub may be seen in the establishment of the Moorland Cinema. As can be seen below in Figure 38, films are regularly screened for villagers to enjoy, using the technology they went to such lengths to have installed in their local hall, a testament to their community vision and commitment.

I Daniel Blake (2015) PG

Our next film is on **Saturday 3 February,** we will be showing '*I Daniel Blake*' (2016) PG Directed by Ken Loach Starring Dave, Johns Hayley Squires, Sharon Percy, Kate Rutter and Kema Sikazwe

'Daniel Blake a 59-year-old widowed carpenter is relying on welfare after a recent heart attack leaves him unable to work. Despite his doctor's diagnosis, the authorities deny him benefits and tell him to return to his job. As Daniel navigates his way through an agonizing appeal process, he begins to develop a strong bond with a destitute, single mother who's struggling to take care of her two children'

Films are shown in the War Memorial Room which has been professionally equipped with a 10 foot screen amd surround sound. Follow the link to Moorland Community Cinema to see the 2018 Film Programme. Annual Membership £2 Admission donations Members £3 Visitors £4

This entry was posted in **Moorland Community Cinema**, **Uncategorized** by **Veronica Stansfield**. Bookmark the **permalink**.

Figure 38: St Breward Moorland Community Cinema Advertisement

7.5 Sustaining the Digital Neighbourhood

The community of St Breward has taken great strides in making the internet applicable to their local rural setting, and in seizing technology and making it work for them as a community. Their results came about through a distinct and optimal symbiosis of social, spatial and technological factors. The key social actors and social organising forces; the communal village space; and the appropriate technical conditions all aligned to allow their aspirations come to fruition. Efforts in this modest and unassuming community have yielded a community hub which serves all people, but also serves to expose the wider community to technological opportunities. It provides a base from which learning can occur, alongside the everyday social capital and community building that is the bread and butter of St Breward's existence. 'Systems and applications that enhance social capital will have greater long-term usability for the members of the community; those that diminish the social capital of organizations are less usable' (Carroll, 2001: 312). Systems in place in St Breward contribute to the bonding social capital present in St Breward and, in time, other forms of social capital may be acquired through increased online connectivity. The model in St Breward brings people together for village network communication, but also opens up the possibility for wider communication for so many who choose to avail of it. 'If these new technologies can increase communication with network members or can increase the size or diversity of social networks then computer-mediated communication has the potential to reverse the decline in social capital that Putnam (2000) reports as having taken place over the last quarter century' (Hampton, 2001: 32). Through making the internet applicable to the local rural setting, and allowing it to align with everyday practices and the minutiae of everyday life in village spaces, blending it seamlessly with community groups and delivering training amongst peers in familiar spaces, a sustainable shift in digital readiness can be observed.

As one local resident put it, ‘We’re not going to go backwards. We can’t say, ‘It’s bad for this, it’s bad for that.’ If it’s there, we’ve got to make it right for us. We can’t say, ‘Oh life was better without it.’’ It could be said that St Breward is making it right for them, and attempting to close, in some small way, the digital divide both amongst its own rural population, and between itself as a rural village and its urban counterparts.

Through heightened social capital locally, and the strengthening of local ties, coupled with linking with places and people further afield, St Breward can potentially accelerate towards a degree of glocalization, described by Hampton as ‘the growth of social capital, locally and with ties at a distance, as a result of computer-mediated communication (2001: 6). But with results showing how this village operates, and its characteristic local preferences, perhaps more important is sustaining the local digital practices, and making modern digital affordances applicable locally in the first instance. A sustainable digital neighbourhood under the rural condition need not be global at the outset; it can be a local affair, serving inter-community links of those who reside there.

Key to the sustenance of such practices is the role of the village gatekeeper. ‘What is important in creating effective e-gateways is not simply a set of activities but rather the social relations that sustain them. These social networks may not be consciously sought after or deliberately created but they would not function effectively without considerable effort by key individuals’ (Liff and Steward, 2001: 341). Without the social organising, space governance, and motivation of the gatekeeper, such initiatives would scarcely get off the ground. The degree to which they can foster social and digital inclusion is not to be underestimated. The capacity building and strategic added value they bring to village operations is immeasurable, and their continued presence through the generational shifts is key.

We recall how Simpson describes that 'Fostering sustainable community development is thus dependent on understanding how social capital is created, and on an awareness of how social capital can underpin sustainable community informatics initiatives in rural communities' (2005: 112). The gatekeeper in the rural village is acutely tuned in to this fact, and carries out such practices by default, through their knowledge of local social dynamics. In the review of the literature, Day asserted that '…a central goal should be to develop shared understandings of ways in which ICT contribute to building and sustaining active and healthy communities' (Ibid). Again, St Breward has been seen to employ technology in a way which benefited the community at large.

Correa and Pavez (2016: 259) have put forward some suggestions with regards to digital inclusion interventions in rural locales. They suggest that:

> These should start with an assessment of their needs (economically and otherwise) so the new tools are presented as relevant for their particular context. Training that focuses on these needs, rather than on technology per se, is desirable. For example, one might include computer or Internet training as part of a course on how to apply to public programs for rural start-ups rather than presenting the course as a computer class. The latter would only increase the level of unease and decrease self-efficacy. We would also suggest that any initiative—public or private—should work closer to local authorities and relevant actors from the communities to provide information about the programs, and to be available to attend inhabitants' concerns—such as health issues related the presence of the antenna—and suggestions for particular kinds of training.

As St Breward expands its offering and progresses its community hub model, the aforementioned suggestions will bear more relevance, and could potentially enhance their offering. Whilst the community are largely acutely aware of their own requirements, the addition of training which caters to particular needs could yield benefits, funding permitting. And, as Correa and Pavez (2016) have alluded to, those intending to deliver content in areas such as St Breward ought to recognize that working

with relevant actors from the community is vital. The gatekeepers hold the key to the people of the community, and the key, literally, to the spaces within the village. Their local influence in allowing initiatives to gain traction is not to be underestimated.

We earlier alluded to Simpson (2005: 109) who had some suggestions for the kinds of 'soft technologies' ('those 'technologies' that enable individuals to learn about and use hard technologies (such as ICTs) or to manage CI initiatives (such as awareness raising, education and training, and building leadership)) that ought to be implemented in order to develop individual capacity. These include:

- Formal programs and informal activities that increase awareness of the potential and benefits of ICTs.
- Formal and informal education and training programs that equip community members with the skills and knowledge required to become competent users of ICTs.
- Building leadership across community groups and organisations where individuals become the 'local champions' encouraging others to engage with ICTs, or managing the CI initiative.
- Building technical expertise for supporting and maintaining information and communication technologies.

Again, such suggestions could guide the future path of the St Breward offering. To not only raise awareness of what technology can do for people (tackling the mind-set before the skillset), and equip the community members to make use of it, but to also build leadership and foster the emergence of local champions, as well as building local technical expertise, can only serve to enhance the community agenda in a way which is more sustainable. Creating the digital neighbourhood, even if it is a more 'local' digital neighbourhood, is one thing, but sustaining it in the longer term, and embedding those practices and the knowledge gained, is another. There is much value in the capacity building ongoing in St Breward, and Simpson's guidelines may go some way to preserving it for the future.

Figure 39: Community Members with Representative from Citizens Online in the Institute and War Memorial Hall

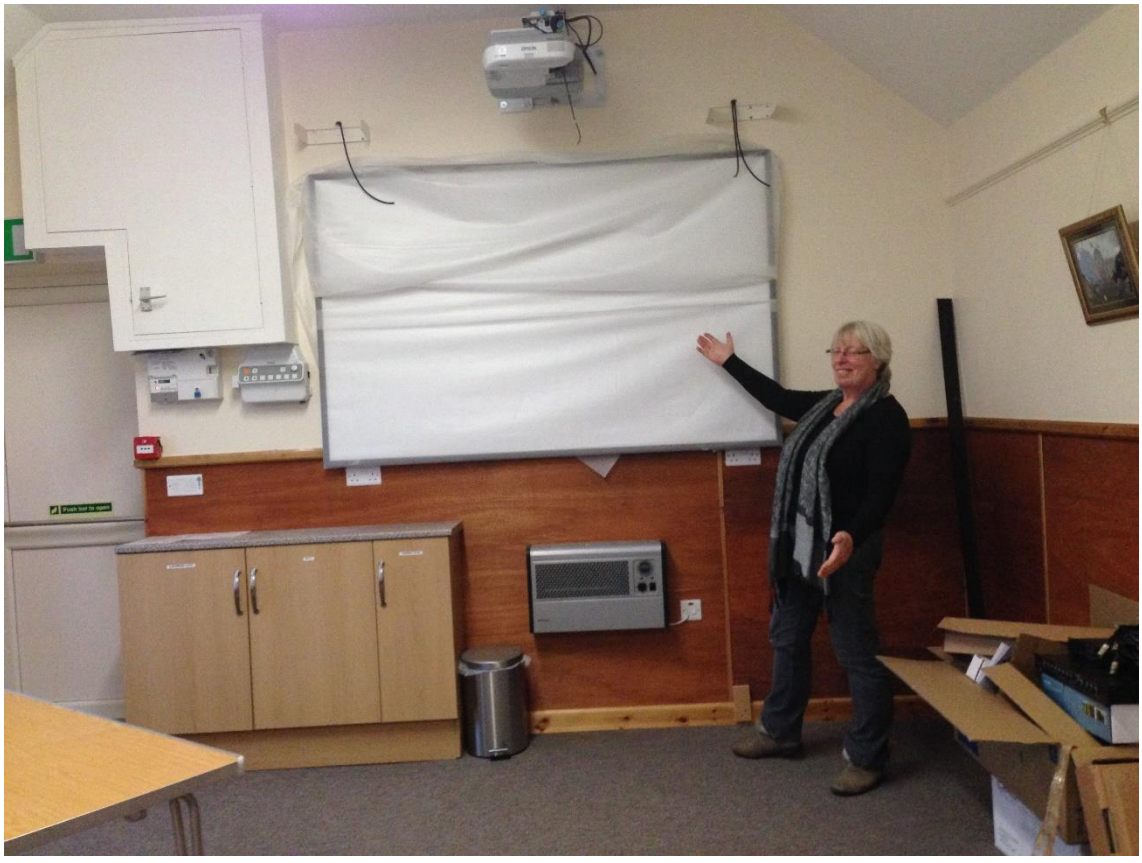


Figure 40: Community Member Showcases the Institute and War Memorial Hall Whiteboard

CHAPTER 8: CONCLUSION

8.1 The Specificities of Place, People and Technology Use

Government ambitions are now set on reaching 97% of the population with superfast broadband by 2020, but with policy so firmly anchored in this idea of access and coverage, knowledge about how our nation's cities, towns and villages will actually respond once access is duly granted has been lacking. Ensuring residents efficiently and responsibly seize these so-called opportunities they now have equal access to becomes the more pressing issue once broadband networks have been financed and deployed, and, ideally, should have been a greater consideration at the outset. The 'build it and they will come' broadband deployment mentality that has dominated is not one which precipitates widespread meaningful, sustainable use of high-technology, and findings presented here have highlighted potential issues with this approach. Gurstein (2003) summarised this standpoint, which was discussed more in depth earlier in this thesis:

> The difficulty with 'access' as the primary concern for those looking to ensure socially equitable use of ICTs are the questions identified by Clement and Shade — 'access for what', 'access for what purposes', 'access for whom' and 'access to what.' Without attention being paid to these issues, 'access' as most commonly presented within the context of the digital divide discussion is simply a matter of ensuring opportunities to 'consume' Internet enabled services and Internet supplied goods or information by passive consumers.

And with the focus not just on the UK's many urban centres, but also now on its most isolated and rural corners, too, this thesis addressed what the difference in approach might need to be within these rural locales. Results uncovered in St Breward support the view that, in order to optimise rural outcomes, there is a need to ensure any technology deployed is made relevant to the community in which it is to be rooted. And, furthermore, there is a need for policies of best practice to enable communities to make efficient use of the technological services they have/ will soon have at their disposal.

It has often been conjectured that access to broadband technology brings with it an equalizing effect, linking everyone to the same information flows, regardless of location or social status. However, we cannot take for granted that increased access to technological infrastructure brings about a comparable increase in the adoption and use of such technology, nor leads to long-term and meaningful participation in the online realm. In reviewing the literature, we uncovered the proposition that in order to foster meaningful usage in communities, locals must feel motivated, possess the necessary skills, and believe it to be worth their time and effort. Results in St Breward support this view and indicate, through investigation, that those motivating factors, skills needs, and the way in which internet services could be made to appear worthwhile and applicable, are potentially different in rural place to other locales. St Breward, a rural village case study, proved to be a locale where place affiliation is important, local social relations and face-to-face communication are paramount, and technology utilisation is minimal. Fostering the use of online services, and conveying to locals how they may be made applicable and relevant to their lives, require an alternate approach in the rural village; an approach which considers the specificities of people, place and technology uncovered by this research.

With the ever-present policy focus on advancing the broadband agenda in all corners of the UK, be they urban or rural, this thesis sought to examine the implications of this for rural locales more closely. It looked not just at technology, but at people, place and technology together, the specificities of which come to relevance when seeking to effect change within a rural community. This thesis set out to uncover how a rural village community appropriates technology, and how it might be affected by the rollout of superfast broadband in its locale (research question 1). We now know, following the presentation of results, that technology is employed at a minimum level across rural

villagers' social networks, and that there exists some fear around its usage, as well as a lack of clarity and inspiration around its potential. Results have shown that, without some intervention, the effects of superfast broadband on the wider population of a rural locale could be needlessly minimised. However, results have also shown that in focussing on, and being mindful of, the specific needs of rural place; the specific preferences of rural people; and the applicability of technology to the rural community domain, opportunities for both community benefits and industry advantage could potentially be boosted. Through making the internet applicable to the local rural setting; allowing it to align with everyday practices and the minutiae of everyday life in village spaces; blending it seamlessly with community groups; and delivering training amongst peers in familiar spaces, a sustainable shift in digital readiness can be observed, leading to a more recognizable impact on the rural village with respect to superfast broadband. Having demonstrated how this village operates socially, and in seeing its characteristic local and face-to-face preferences, perhaps more important is advancing the *local* digital agenda, and making modern digital affordances applicable and utilised locally in the first instance. Again, the sustainable digital neighbourhood under the rural village condition need not be global at the outset; it can be a local affair, serving, first and foremost, the inter-community links of those who reside within it.

Results have described the particulars of people, place and technology, painting a picture of how a community is structured, how it operates (both socially and spatially), and how technology infuses with this. The reliance of a rural community on the 'local', and upon more traditional means of communication, has been evident at every juncture, initially posing an interesting question as to how superfast broadband can be made applicable in the local rural setting, harnessed as a community asset and, hence, used constructively. The distinct preference for face-to-face communication was clear,

with the landline telephone the traditional backup device to supplement real life exchanges, and the prevailing sense that many people were happy with the status quo, and content with their existing modus operandi, shone through. Additionally, the lighter and less informative content such as the jokes, think pieces and local commentaries were kept for the preserve of analogue media forms such as the local parish magazine, and not introduced into the online realm via the community website. How this might change as technology becomes more embedded in village life remains to be seen. Few expressed aspirations for yet more beyond their current operations. Research uncovered a mix of technophobes and technophiles, as referenced in the review of existing literature, as well as a variety of internet user types, gatekeepers and technology socialisation agents.

St Breward proved to be a place where local networking and neighbourliness matter, and where place affiliation is strong. It is a place where local ties are not just abundant, but high quality ties, too, in terms of closeness; enduring in terms of the duration of social bonds; and frequent with respect to contact and exchanges. St Breward showed us a community within which certain key players were enthusiastic regarding the benefits superfast broadband technology could afford. However, as revealed by the research, the lion's share of the community are not currently operating at high levels of digital dependency when it comes to their social interactions. The traditional modes of communication, such as the landline telephone and face-to-face interactions remain heavily prominent and have not, as yet, been supplanted, or even notably supplemented, by online modes of contact. The extent to which engagement with village gatekeepers can exert local influence is considerable. Social network analysis showed the characteristics of their ego networks – rich and dense with reciprocal

interconnected ties. They also hold the key, literally, to village spaces, and provide the potential to connect with the wider village.

To overlook these special characteristics of people, place and technology – features which make the rural village different, and necessitate an alternate approach – would be an oversight, and indeed a missed opportunity with respect to the uptake and embracing of new technology in the rural domain. As Weiser (1991) has stated, 'The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.' The challenge for St Breward is to continue to weave the effective use of fibre optic broadband services into the fabric of rural village life. For rural villages in Cornwall and beyond, without some digital championing, coupled with guidance and policies of best practice on how to harness superfast broadband and make it applicable locally, it could indeed be what Weiser termed 'a technology that disappears', not because it has been woven into the fabric of village life but, rather, because it has not been seized as a community asset, and has gone unnoticed by the majority. Results have indicated how avoiding this may be best achieved by linking technology with public village spaces; integrating technology into programmes of education delivery; making it an efficient tool for community groups; fostering industry engagement with key community social actors; and seizing opportunities to expose all generations of a village to its potential. It could, and should, become an integral part of how a community operates; not just to connect the rural village to spaces and places further afield, but to support and sustain connections within the local neighbourhood, too – the sustainable digital neighbourhood.

8.2 Designing for Rural Life

Time spent in St Breward has demonstrated that the key to designing for rural life may lie in making the technology being introduced to the community relevant to the actual needs of that community, ensuring the technology is applicable to the context and the culture of the rural place in which it is being deployed. What requires clarity at the outset is what the desired technological outcomes for a rural village actually are. As described by Gilbert et al., and supported following investigations in the case study village, 'To design for rurality, we must consider not only differences among people but also what our ideals for these spaces and lifestyles might be and how technology might transform them' (2010: 1384). This thesis calls for a more enlightened policy framework in order to meet the needs of rural communities; one which considers the social operating system present in the village, including the key social actors therein, as well as the village's technological needs and aspirations. In choosing to examine the ways in which technology can be woven into the minutiae of everyday life and, in fact, become a support for local community networking structures, one can more effectively and efficiently design for rural life, and ensure more sustainable results are fostered.

To get people other than those for whom technology already plays a considerable role interested in, and actively using, technology, this thesis has shown how allowing it to emerge from the private realm and enter public spaces provides an opportunity for those non-users to be exposed to technology, and enlightened as to it potential uses. This is a potential means by which they will be given the chance to use it effectively and efficiently and then, in turn, make it part of their home and everyday lives. We see the benefits when, with the support of key neighbourhood gatekeepers (an essential component), public space and high-technology come together. In the case of St Breward, those who had been wanting to get online; those who were curious; and those

who lacked exposure came out of the woodwork when technology went public and became social. Many of these people then began to see broadband in the home as something that might be a worthwhile adventure. It is that adage of tackling the mind-set before one tackles the skillset, allowing the digital to permeate the village more effectively, and letting residents arrive at a point where broadband becomes more applicable to their existing modes of living, and they feel motivated to learn and develop skills. To effectively design rural interventions, one must identify the needs and desires of residents – their online 'hooks' – whether that be the couple who are curious about doing their lottery online, so that they will be notified if they win, or those who want to explore shopping online, so they can access the same bargains they see others around them acquiring.

It is not just about introducing practices and ways of doing things in the rural village, but also about considering the social actors in the village which will be in a position to sustain them in the longer term. Results in St Breward demonstrated how the gatekeeper is crucial for social organising, capacity building, space governance, and exerting motivational force in a community setting. Their local influence in allowing initiatives to gain traction is not to be underestimated, and they play a crucial role in exposing the wider community to technological practices. Engaging with them in the deployment of rural technology has much to offer to the process of designing for rural life.

In designing for rural life, an understanding of rural needs at the outset is paramount. Only through understanding these can one move towards making broadband part of rural life, and mobilising the community to make effective use of it. Results showed that the makeup of the internet using and non-internet using population needs consideration, as does the history and context of the place, as well as the social and

technological preferences of the community therein. Alongside the installation of kit in the village must come an understanding of who the kit is being targeted at, where it is to be used, and how the intended audience can understand it and come to terms with utilising it in a meaningful and sustainable way. Considering the digital village eco-system as a whole, and engaging with it appropriately, may be key in designing for rural life and advancing the digital agenda under the rural village condition.

This thesis posed the question - What are the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation? The answer to this question revealed that a distinctive symbiosis of social, spatial and technical factors are key to a community leveraging superfast broadband, and there are a number of contributing factors that play into its ability to become an enabler for positive transformation, some of which are external factors, which, with some tailoring, could potentially enhance this experience quite readily. As articulated by Carroll, 'Although people never did and never will need technology to create, experience, and sustain community, technology can play a role in facilitating community' (2012: 215). And exposing rural villagers to this possibility could unlock much potential. People need to be motivated and aware of how such practices can meet their needs in order to take steps and overcome barriers of adoption. Progress made in St Breward with regards to leveraging superfast broadband as an enabler for positive transformation would not have been possible had the social, spatial and technological factors not aligned, and given rise to the opportunity for collective community learning. The community itself operates perfectly well without the need for technology, but one can see, though this model of the 'Community Broadband Hub', with the efforts of the gatekeeper accelerating progress, how the potential is there to link up with those who wish to learn and use the space; to share knowledge; and to connect with other villages and parishes

further afield. Through these processes, with the spatial, technological and social structures in place, communities can find their own ways of integrating technology into their village life, be it through community groups, collective learning, gaming, or whatever caters to the specificities of the village in question. This is all dependent upon sufficient knowledge, expertise and inspiration being delivered through proper channels, but provides the optimum conditions for a rural village community leveraging superfast broadband as an enabler for positive transformation. As described earlier, such positive transformation can take on many guises, but the key element is that the transformation be relevant to the actual needs and desires of the community. This thesis looked at positive transformation as something which brings about transition and progress which is relevant to the community and their needs, citing examples such as the potential to enhance both local and more distant connections by digital means; the possibility for the community to operate on a higher digital level than previously via exposure to digital, and by embedding digital in everyday local community practice; the linking of people, place and technology; the opening up of new possibilities for life, work and play that are appropriate to community needs; upskilling and the shifting of mind-sets in relation to the digital world; and the potential to unlock and foster further social capital within the village community population. Elements of each of these could be observed in St Breward, and with people, place and technology operating in harmony together, a degree of sustainability in such practices should be observed.

8.3 A Symbiotic Approach to the Deployment of Technology

Within the rural village context, technological step-change and an accompanying upsurge in connectivity does not need to erode the perceived physical, topographical boundaries of the village, or diminish residents' sense of connection with place; nor does it need to impede upon one's face-to-face social networking. Deployed and promoted

sensitively and appropriately, it can be harnessed as a tool to strengthen local networks, whilst simultaneously granting the potential to enhance links with locales based further afield. With results showing the unique nature of social operations within a rural village; the vital roles and space governance carried out by gatekeepers operating within that rural place; and the different ways in which residents embrace technology, this thesis suggests an approach which considers the symbiosis of these elements within the rural ecosystem prior to any technological intervention. Figure 41 below illustrates the way in which these elements interlock, with the gatekeepers and their dense local networks exerting influence at the community core – a hive of face-to-face networking and word of mouth knowledge transfer; the spatial infrastructure of local village spaces to which local influencers hold the key; the underpinning technical infrastructure and superfast broadband network all around; and the geographical boundary which contains it all, each element of which is interdependent and uniquely linked under the rural village condition. Simply focussing on the infrastructure will see one only ever chip away at the surface, never reaching the community core.

The onus now lies with policymakers and telecommunications providers, should they wish to enhance local communities and foster digital inclusion, whilst simultaneously boosting opportunities for increased take-up, to adopt a symbiotic approach to deployment, considering the specificities of rural place, as well as being sensitive to how rural communities are socially organized, and the ways in which they use and imagine technology. Industry policies of best practice which enable communities to make efficient use of the technological services they have, or will soon have, at their disposal are required. However, not only is this a social responsibility, but also an opportunity, and a means by which to influence and boost the adoption of technology within rural deployment zones. To adopt such an approach, where the social and community needs

direct the way in which this technological step-change is enacted, is potentially mutually advantageous. By first identifying the needs and preferences of rural locales, and subsequently designing technological step-change aimed at meeting these needs and catering to these preferences, telecommunications providers will ensure usage that is more meaningful, embedded and long-lasting than any quick-fix measures or 'one cap fits all' deployment approach can afford, whilst simultaneously accelerating uptake, and reaching those who would otherwise fail to engage. What this thesis is advocating, based on an advanced understanding of rurality acquired in St Breward, and the successes observed within St Breward, is an approach that considers the specificities of rural people and place; the key functions of the spaces within rural places and the advantages of them being connected to the fibre network; and the local influencers who reside at the core of these rural communities.

To become a vehicle for social change, and to enable technological shifts amongst community members, access and infrastructure are best aligned with a suitable space, ideally facilitated by the relevant social actors – both the social organisers in the village with local knowledge, and those who can impart technical knowledge. Progress in St Breward came about through a distinctive and optimal symbiosis of social, spatial and technological factors, and the same can be replicated and expanded upon elsewhere. As Whyte has said, 'I think every man owes it to society to see how society lives' (1994: 39). Uncovering how rural society lives, and what its needs and preferences are, and tailoring technological interventions accordingly, will provide the optimum conditions for a community to realise the effects of superfast broadband, enabling them to harness it as a community asset, and bring about positive community transformation.

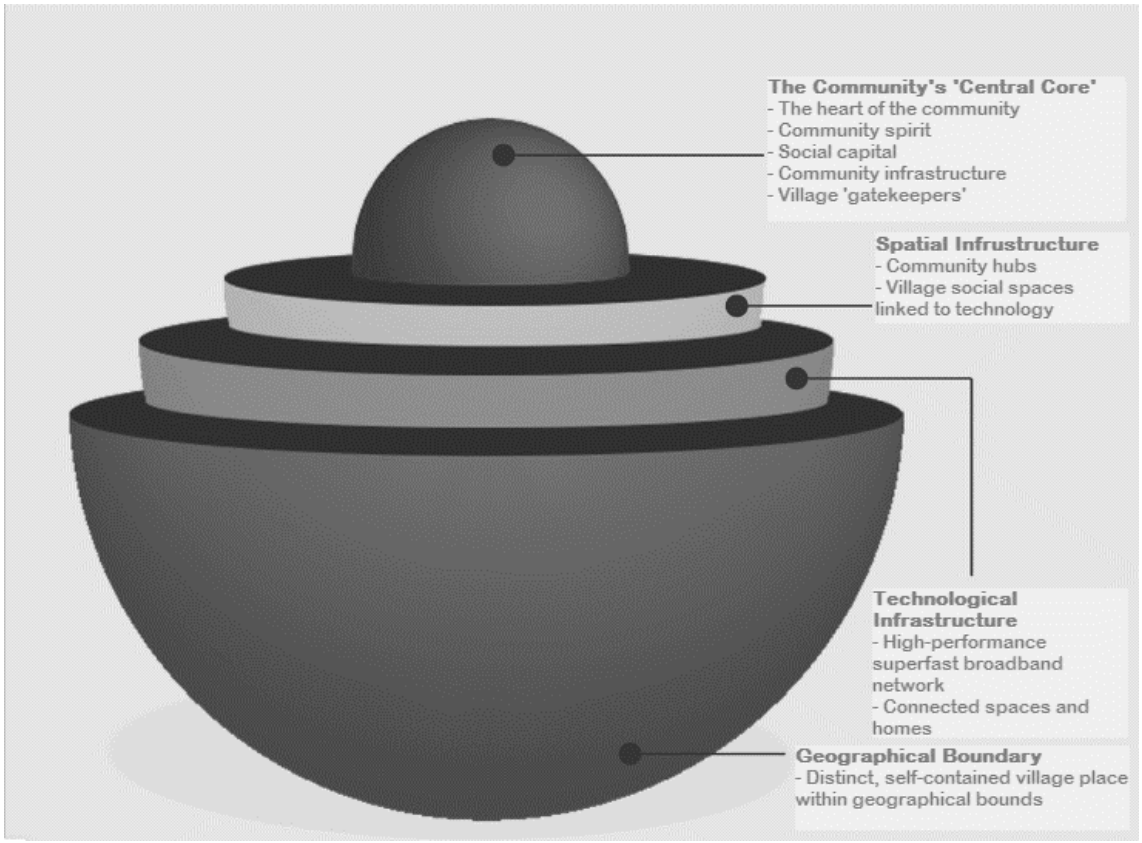


Figure 41: The Rural Village Condition

8.4 Policy Implications

Technological step-change via an upsurge in superfast broadband connectivity is an ongoing national priority. However, as we have seen throughout this thesis, the extent to which those involved with its deployment are being sensitive to the specificities of place, and focusing on broadband access being meaningful, is indeed questionable. As coverage and access problems are being resolved across rural zones, the time has surely come to shift the policy focus from one of rural broadband diffusion to a new focus on rural broadband development, with the associated enhancement of more rural appropriate policy solutions. BT Openreach has described 'the challenges and costs of delivering fibre broadband networks to isolated communities that remain unconnected to high-speed broadband' as 'considerable' (2018: 4). In order to ensure an optimum return on that investment, both financially and in social and community development

terms, a recalibration of rural broadband policy is desirable. As efforts to reach the final (typically rural) 5% with fibre optic broadband services continue, the distinctive symbiosis of social, spatial and technological factors at play within rural zones warrants attention. Research presented here contributes to the knowledge gap on how to design for rural life, advocating an approach in which those implementing policy consider the nature of place when doing so, being sensitive to how rural communities are socially organized, and the ways in which they use and imagine technology, potentially leading to a wealth of both community and industry benefits.

In moving from policies centred on access to policies centred on adoption and effective use, policymakers and industry stakeholders have an opportunity to take on a greater degree of social responsibility, seeking instead to embed high-technology into normative rural practices, all the while being sensitive to the needs of rural place, and focussing on what desirable outcomes in rural place look like, both from a policy point of view, and from the standpoint of the rural population. Resultant policies would be more enlightened, and tailored to rural needs, representing a move away from a 'one size fits all' policy approach to broadband deployment. In taking on a greater degree of social responsibility, policymakers may tap into a distinct opportunity to unlock a degree of social capital, and also foster the development of yet further social capital, a valuable resource which makes a contribution to the wellbeing, resilience and sustainability of a rural community in the longer-term.

The need for a focus on digital skills has emerged clearly from this research, and the current policy framework should reflect the same. Whilst policy documents such as the Digital Skills Crisis Report from the House of Commons Science and Technology Committee (2016a) highlight the need for greater digital skills levels, because a lack of

such skills impedes productivity and profit amongst small to medium enterprises (SMEs), this same focus needs to trickle down to the community level, where the average lay person resides, and where new SMEs could potentially emerge, given the right conditions. Policies which foster technology understanding and appreciation, as well as a desire to learn, are appropriate in this instance, and these are policies which will also inevitably lead to heightened broadband adoption in rural zones.

In the challenge to keep pace with technological advancements, one must not lose sight of the people on the ground – the rural dwellers far removed from city lights. 'The Government recognises the economic and social value of successful, significant participation in the digital economy for individuals, businesses, and wider society and recognises that this must be achieved through the acquisition of appropriate digital skills (House of Commons Science and Technology Committee, 2016b: 1). Let that realisation extend to the rural dwellers who may not be successfully engaged with technology, and let it not be a one size fits all deployment of digital skills training; may it be one which is tailored according to the people and the place in which it is to be deployed. Community engagement and consultation is key in this instance, and a more collaborative approach to rural policy is desirable. We saw in St Breward how key social actors allow rural projects to gain traction, and their involvement in broadband policies which affect their community is to be welcomed. Such practices will inform policies so that they may indeed reflect the needs and aspirations of the rural community, and also result in polices which assist in making the internet more applicable to the wider rural village community and its particular preferences. What this thesis calls for is more inclusive governance practices, and a focus on investing in people, in community, and in capacity building, and not just on infrastructure and kit. More socially desirable policies which champion local engagement, but also bring about the implementation of soft

technologies – making tools available for successful learning and capacity building – are needed, and would bring about more sustainable ICT outcomes for rural locales in the longer term. Closer attention needs to be paid to the spaces and the key social actors within rural village places in order for ICT policy objectives to be met. But not only that, the need for new means of information dissemination and community engagement to get people on board are noteworthy. As is recognition that, for local rural folk to engage optimally, ensuring interventions are applicable to them, and lead to them to appropriating new technology in a way which is relevant to them, is vital. 'As we move into an era of third generation corporate social responsibility, corporations and governments can increase their collaboration to drive large-scale changes which produce win-win outcomes' (Curley, 2005:157). Let us add community into that equation, and make it about corporations, governments and communities, all working together seamlessly to produce socially desirable outcomes for rural places.

8.5 Implications for Those Deploying Technology

Results from this thesis have suggested that, rather than focussing on the death of distance, and the global, far-reaching affordances of broadband technology, an alternative way in which to promote internet technology to rural locales may be in focussing on a revival of the local, the strengthening of local social networks, and the use of mediated networks in order to enhance and sustain existing community practices. Given this rural village's tendency towards local networking, and inclination to use high-technology more so with those most highly regarded, servicing and enhancing those connections could potentially be more attractive to them than the creation of new ties with people further afield. Platforms which serve local networking, and enrich the maintenance of relationships with existing strong ties, offer a potential route towards increased technological activity. This potential bears relevance when considering those

responsible for the deployment and uptake of superfast broadband technology. It suggests that there is the potential to turn the selling point of the internet on its head, positing it in such a way that it can be used to reinforce strong, already present links and local ties, and in doing so, making the internet local and more applicable to residents of a rural village place. This could potentially give rural residents their hook to the online realm, knowing they will be afforded the opportunity to enhance community life and take part in local networks. Findings suggest that the establishment of a community network, or the weaving of high-technology into existing community networks and group structures, may be a more attractive proposition to the rural resident than the creation of anonymous and distant ties; enhancing their existing and preferred experiences, as opposed to creating them anew. In the development of a rural broadband promotion strategy, this possibility is a worthy consideration when seeking to reach all potential users and bring about widespread take-up. Many report a view that superfast broadband is not something which relates to their ways of living, and not necessary to their functioning, so making broadband more applicable and relatable by presenting it, additionally, as a local tool, is something which could lead to an industry gain.

Results from this thesis illustrated a high level of confusion and misunderstanding with respect to superfast broadband technology. Many struggled to see its applicability to their own lives, but also did not really understand what it could offer or how to use it. This calls two things into question – the digital readiness of the village under investigation, and the advertising processes of those who are deploying technology. Information dissemination is key in order to bring about the optimal level of take-up, and results suggest there was a further need to inform in order to reach all residents with the appropriate information. The means of that information dissemination needs

consideration, and should bear in mind the communication preferences articulated by respondents. Understanding the knowledge needs of the community at large, and employing the most effective means of informing the community, such as face-to-face contact, where possible, or, alternatively, via the key social actors identified over the course of this research. Information, guidance and inspiration delivered via appropriate means in the community will likely yield additional industry benefits, and also ensure that the superfast broadband technology now at villagers' disposal is optimally seized. Furthermore, extending this advertising and information dissemination beyond the point of access being granted is to be welcomed, as it would offer an opportunity for people to catch up before an opportunity to engage is missed. It is when the mind-set has caught up, and the skillset begins to develop, that the information will then be required.

Results have also shown that key social actors in the village carry out vital roles. These people are often digital champions, and engaging with them effectively is recommended for telecommunications providers in order to efficiently access the wider village population. The gatekeepers are the key to the community, and hold a vast amount of local influence. They also act as governors of key village social spaces, and installation of a broadband connection in these will expose many residents who would not ordinarily be reached to the power of technology. In acknowledging the social operating system of the village, and the importance of the community village hubs, industry stakeholders may unlock further potential for wider broadband adoption in the village, but also fulfil a degree of social responsibility, ensuring connectivity is for the many and not the few.

8.6 Limitations

Whilst conducting a case study allows for a level of closeness and near-proximity to both the site of study and the residents therein, it is but a single unit of analysis. However, St Breward is also a rural village which may be considered typical of villages in other parts of the United Kingdom and beyond. The rural conditions and the associated benefits and problems it presents are common amongst rural dwellers, regardless of geographical location. As such, many of the conclusions drawn from this research transcend space, and may be widely applicable to rural locales more generally, regardless of the particular space within the rural periphery which they occupy.

This research was conducted at a timely and opportune point in the broadband dissemination cycle. It captured happenings at a time when a village was undergoing a technological transition. Of great interest, would be an examination of changes effected in St Breward over a longer period of time; the longitudinal element of which is beyond the scope and time restrictions of the study presented here.

8.7 Future Research

This thesis and its implications open up a number of potential avenues for further research. For instance, one could explore additional applications of the particular social network analysis method employed in this study, in order to enhance the depth of understanding of the ways in which rural social networking play out. The use of the method in this context was novel, not least because of the decision to omit limits on the number of alters an ego could list for their own personal ego network. This is a method which could be used further in order to explore alternative phenomena.

Also of interest would be further research which tracks any changes in the shape and geographical reach of egos' networks over time. Changes to the structure and

composition of rural dwellers' networks present an interesting avenue of study, as does any shift in the extent to which high-technology is employed across those networks, as the presence of technology in people's lives continues to develop.

Further research into the role of the village gatekeeper could provide additional insight into the social organising forces present in a rural village. This may be particularly pertinent if we consider what happens when the current generation of gatekeepers are no longer present and active. The means by which the digital champion baton is handed on to the next generation is of sociological interest, particularly if we consider the sustenance of communities and the preservation of their community spirit in the longer term. And especially so if we consider that engaging youth in the community mission needs further attention. Additional research could also explore just how far the capacity building championed by the village gatekeeper in a rural community can grow, given the right conditions.

As alluded to in the limitations, longitudinal work in the rural village setting, designed to further track progress, and the extent to which ICT services grow and their use is sustainable, is an interesting proposition going forward. The novel ways in which communities appropriate technology for their own uses, and the degree to which these efforts have longevity, warrant further study, in a way which captures change over time. To what extent can non-engagers be brought on board with increased exposure to, and interaction with, technology? Can digital champions sustain their efforts? And what is the viability of a community broadband hub in the longer term? To be able to track the extent to which technology begins to infuse through networks, and visualise how that changes over time is also of considerable sociological interest.

Further research into the benefits of a more joined-up approach to technology deployment, and the adoption of a symbiotic approach like that presented in this study, could provide great insight. Trialling such a model in a test bed village would enable the measurement of impact on that community, and examination of the rates of broadband take-up it precipitated. Further research with broadband stakeholders to discuss the model of deployment presented would be welcomed, in order to inform the approach, but also to explore the feasibility of such an approach. Stakeholders may also wish to explore the effects of longer-term advertising and information dissemination efforts in rural locales.

Preston et al. have summed up the need to enable and stimulate rural communities in order to drive the broadband agenda:

> In rural areas that currently have broadband access, certain socio-economic groups (e.g. the elderly) will remain resistant to broadband until they have compelling reasons to adopt it. The primary drivers in this respect will be the availability of applications, services and content that are relevant and add qualitative benefits to their lives. Providing access is only one side of the rural broadband challenge. Enabling and stimulating rural communities to beneficially engage with broadband is another challenge, and one that has been relatively neglected across the EU-25 in the rush to provide access (2007: 399).

Further research in this area is warranted, in order to uncover what the compelling reasons are. What applications, services and content are relevant and work in the rural context as a 'hook' to engage the hitherto unengaged? How effective are these in the longer-term? And what could be the extent of the benefits of an approach such as this, where there is some small initial investment in education and community development at the outset, for both communities and telecommunications providers? We know that '…policy makers must be flexible and imaginative in taking account of local conditions…', and that '…broadband technologies must be considered in a way that is appropriate to

and matches local socio-economic conditions and coherent developmental strategies' (Ibid), but the challenge lies in identifying what that 'appropriate' solution looks like. This thesis goes some way towards identifying what is applicable under the rural village condition, but further enquiry is necessary in order to fully understand best practice in this regard.

Whilst we may be in the age of ubiquitous broadband and, now, even ubiquitous *rural* broadband, we are a far cry from being in a state where high-level, sophisticated use of that broadband is universal and uniform across the urban/ rural divide. The challenge going forward lies in the creation of appropriate rural promotion strategies and toolkits; the implementation of suitable soft technologies; and the application in rural locales of good practice activity which fosters learning and engagement across all user and non-user cohorts. The optimum design of such interventions would benefit from further research; research which engages with, and consults with, the communities they will inevitably affect.

8.8 Summary of Contribution to Knowledge

8.8.1 Methodological Innovation

This study of people, place and technology under the rural village condition employed the novel use of innovative methodology. Looking at technology through the lens of community and social networks is in itself a unique means of exploration, and one which contributes to the body of knowledge on how to examine a community; how a community functions; and how a community employs technology. But the application of a personal ego-centric network approach, and unbounded, limitless ego-centric networks at that, is original, and makes a direct methodological contribution to the

study of rural social networks; their various characteristics; their geographical reach; and rural egos' use of technology across them.

8.8.2 Research Field

Results from this research make a direct contribution to knowledge in the field of rural sociology. They provide insight into the composition and characteristics of rural villagers' personal ego networks; how far they reach geographically; and how they utilise technology in order to sustain social ties. Furthermore, the key social actors present within a rural village place were clearly identified, with the characteristics of their dense networks of reciprocal ties illustrated.

With research regarding how rural villagers make use of and appropriate technology lacking, this research adds to the body of knowledge on the means by which they do so. Through the application of social network analysis, we can see exactly how rural villagers utilise technology in their social lives – another direct contribution to the field of rural sociology. Supplementary research provided true insight into rural imaginings of technology; what it means to them; and what their technological aspirations are.

In essence, this research has developed an advanced understanding of the interplay between people, place and technology under the rural village condition, through the application of novel modes of enquiry and a focus on social networks. It has shown how the optimum interlocking of social, spatial and technical factors can yield results, and can foster the creation of a sustainable digital neighbourhood – a neighbourhood in which the technology becomes more embedded, and the community appreciation for, and use of, technology is something which can be sustained – the meaningful and sustainable use of technology in the community setting, in a way which is both relevant and appropriate for the community, and works for the community in the longer term.

8.8.3 Policy

The policy implications of results from this case study investigation are manifold, and have been referenced throughout the thesis. Firstly, it is clear there needs to be a policy shift from a focus on access to one of adoption and effective use – a move from broadband diffusion to broadband development. Policymakers ought to take on a greater degree of social responsibility in their approach to ICT deployment, developing policies which strive for the effective use of technology, and the embedding of technology into everyday practices; policies which are sensitive to the social and community needs of a rural place, whilst also enabling social and community objectives; policies which align with the rural place agenda; policies which can contribute to the heightening of rural community social capital; and also policies which foster an environment where the appreciation of technology and the subsequent willing adoption of technology are readily realised.

This research calls for a new and meaningful policy focus on the social dimension of village places, and upon the needs and desires of those rural places, as well as a more thorough examination of the preferred sustainable outcomes for rural place more widely. Furthermore, the need to engage the community in all stages of the development process has been highlighted, and this needs to be implicit in more consultative community development policy going forward. Policies which foster the establishment of soft technologies in a rural locale, in order to enable capacity building; social capital acquisition; cross-generational working; and more sustainable ICT outcomes are to be championed.

8.8.4 Industry

Many of the policy implications are also directly applicable to those working in industry, and seeking to advance the broadband agenda. The adoption of a greater degree of social responsibility, and a heightened focus on adoption and effective use alongside that of access, are also desirable outcomes with respect to this group of stakeholders. As is the need to engage further with communities; in particular, with the key social actors (gatekeepers/ digital champions) within communities which can assist in advancing the rural broadband agenda in a way that is both desirable for rural communities, and advantageous for stakeholders. An appreciation of these actors, and also of the power of key village community spaces, will inevitably lead to more desirable outcomes for rural society, as well as potential gains for industry stakeholders. The gatekeepers have the local knowledge, and the knowhow to access the community and the key community village spaces, with the potential to drive the broadband agenda in a way which is both applicable and mutually beneficial. The presence of a broadband connection in a key village space is the means by which the wider community may be exposed to its uses, and also a means by which the community may learn how to embed online practices into their everyday community activities in a way that works for them.

The lack of clarity in the rural village regarding superfast broadband and its affordances was emphasised by this research, and highlighted a need for industry professionals to reconsider their rural promotion strategy. Recommendations to industry stakeholders would include the need to extend the dissemination of information and the presence of advertising beyond the point of access being achieved, in order to enhance rural broadband adoption potential. Given the oft-described epidemic model, 'which builds on the premise that what limits the speed of usage is the lack of information available

about the new technology' (Geroski, 2000: 603), problems regarding information dissemination are certainly worthy of investigation and improvement. Furthermore, the way in which this information is conveyed is vitally important, and needs to take into account the preferences for word of mouth and face-to-face engagement present in the rural village community.

Finally, the degree to which any rural broadband strategy makes the internet applicable to local practices is of great importance. In a village where local networking takes precedence, and ICTs are employed minimally, promoting the internet as something which can enhance local practices, and make a community contribution, is potentially a valuable selling point, and one which could unlock great advantage. To reiterate, the sustainable digital neighbourhood under the rural village condition need not be global at the outset; it can be a local affair, serving, first and foremost, the inter-community links of those who reside within it.

APPENDICES

Appendix 1: Survey Questionnaire

SDN Questionnaire: Demographics

1. ID number

2. Date

3. Village

4. Postcode

5. Name

6. Contact number

7. Email

8. Duration as resident

9. What is your gender?

- Female
- Male

10. What is your age?

- Age 16 to 17
- Age 18 to 19
- Age 20 to 24
- Age 25 to 29
- Age 30 to 44
- Age 45 to 59
- Age 60 to 64
- Age 65 to 74
- Age 75 to 84
- Age 85 to 89
- Age 90 and Over

Q11a. Can you tell me the highest educational or school qualification you have obtained?
FROM 1 = HIGHEST TO 17 = LOWEST; CIRCLE ONE ONLY

1 University Higher Degree (e.g. MSc, PhD)
2 First degree level qualification including foundation degrees, graduate membership of a professional Institute, PGCE
3 Diploma in higher education
4 Teaching qualification (excluding PGCE)
5 Nursing or other medical qualification not yet mentioned
6 A Level
7 Irish Leaving Certificate
8 Welsh Baccalaureate
9 International Baccalaureate
10 AS Level
11 Higher Grade/Advanced Higher (Scotland)
12 Certificate of sixth year studies
13 GCSE/O Level
14 Irish Junior Certificate
15 CSE
16 Standard/Ordinary (O) Grade / Lower (Scotland)
17 Other school (including school leaving exam certificate or matriculation)
18 None of the above
19 Don't know
20 Refused

Q11b. Was the education stated in 'Q11a.' obtained in the UK?

Yes ☐ No ☐ In _____

Q12. And which of the following vocational or other qualifications do you have, if any?
CIRCLE ALL THAT APPLY

1 Youth training certificate
2 Key Skills
3 Basic skills
4 Entry level qualifications (Wales)
5 Modern apprenticeship/trade apprenticeship
6 RSA/OCR/Clerical and commercial qualifications (e.g. typing/shorthand/book-keeping/commerce)
7 City and Guilds Certificate
8 GNVQ/GSVQ
9 NVQ/SVQ - Level 1 - 2
10 NVQ/SVQ - Level 3 - 5
11 HNC/HND
12 ONC/OND
13 BTEC/BEC/TEC/EdExcel/LQL
14 SCOTVEC, SCOTEC or SCOTBEC
15 Other vocational, technical or professional qualification
16 None of the above
17 Don't know
18 Refused

Q13. How many adults are there living in your home who are age 18 or older, INCLUDING YOURSELF?

- One ☐
- Two ☐
- Three or more ☐
- Don't know ☐
- Refused ☐

Q14. And how many children are now living in your home who are under age 18?

- One ☐
- Two ☐
- Three or more ☐
- None ☐
- Don't know ☐
- Refused ☐

Q15. Are you currently…?

- Single (that is never married or never in a registered civil partnership) ☐
- Married ☐
- A civil partner in a legally-recognised civil partnership ☐
- Married or a civil partner, but currently separated ☐
- Divorced or formerly a civil partner ☐
- Widowed or a surviving civil partner ☐

Q16. What best describes where you live? Do you own it, rent it, or live there for free? [Tick 'Own' *and* 'Rent' for shared ownership]

		Own	Rent	Free
Detached house	☐	☐	☐	☐
Townhouse/semi-detached/terraced	☐	☐	☐	☐
Flat/apartment/maisonette	☐	☐	☐	☐
Caravan/park home/mobile home	☐	☐	☐	☐
Something else	☐	☐	☐	☐
Don't know	☐	☐	☐	☐
Refused	☐	☐	☐	☐

Q17. What is your current employment status?

Employed full-time (paid)	☐	+study	☐
Employed part-time (paid)	☐	+study	☐
Full-time (unpaid)	☐	+study	☐
Part-time (unpaid)	☐	+study	☐
Self-employed	☐	+study	☐
Full-time student	☐		
Retired from paid work	☐	+study	☐
Homemaker	☐	+study	☐
Carer	☐	+study	☐
On training scheme	☐	+study	☐
Unemployed (disabled)	☐	+study	☐
Unemployed (looking for work)	☐	+study	☐
Other	☐	+study	☐
Don't know	☐		
Refused	☐		

Q18. What is/was your job/line of work?
FREETEXT, CODE LATER INTO OCCUPATION AND SECTOR

_____

Q19. Occupation of chief/other wage earner?

_____

Q20. Which of these people do you know socially?

Select **all** the people **who you know**

- ☐ Secretary
- ☐ Nurse
- ☐ Teacher
- ☐ Cleaner
- ☐ University lecturer
- ☐ Artist
- ☐ Electrician
- ☐ Office manager
- ☐ Solicitor
- ☐ Farm worker
- ☐ Chief executive
- ☐ Software designer
- ☐ Call centre worker
- ☐ Postal worker
- ☐ Scientist
- ☐ Lorry driver
- ☐ Accountant
- ☐ Shop assistant

Q21. Which of these cultural activities do you take part in?

Select all of the activities you do **sometimes or often**

- ☐ Go to stately homes
- ☐ Go to the opera
- ☐ Listen to jazz
- ☐ Listen to rock/indie
- ☐ Go to gigs
- ☐ Play video games
- ☐ Watch sports
- ☐ Go to the theatre
- ☐ Exercise/go to gym
- ☐ Use Facebook/Twitter
- ☐ Socialise at home
- ☐ Go to museums/galleries
- ☐ Listen to classical music
- ☐ Do arts and crafts
- ☐ Watch dance or ballet
- ☐ Listen to hip-hop/rap

Q22. Do you use the internet, at least occasionally? [If yes, go to Q24]

- Yes ☐
- No ☐
- Don't know ☐
- Refused ☐

Q23. [If not] **Why?** [Do not prompt]
TICK ALL THAT APPLY

- Lack of interest/don't want to ☐
- Lack of necessary skills ☐
- Lack of necessary equipment ☐
- Lack of confidence ☐
- Lack of time ☐
- Not relevant to my needs ☐
- Feel too old ☐
- Too expensive ☐
- I have privacy worries ☐
- I have safety worries ☐
- Don't know how to go about it ☐
- Never considered it ☐
- Other _____ ☐
- Other _____ ☐
- Don't know ☐
- Refused ☐

Q24. Do you use have access to the internet in your own home? [If yes, go to Q26]

- Yes ☐
- No ☐
- Don't know ☐
- Refused ☐

Q25. [If not] **Do you intend to connect at home?** [If internet user, go to Q28 next; If non-user, skip to Q31]

- Yes, definitely ☐
- Yes, maybe ☐
- No, probably not ☐
- No, definitely not ☐
- Don't know ☐
- Refused ☐

Q26. [If at home] **And which of the following connections do you have at home?** [If fixed is ticked, ask Q27]
TICK ALL THAT APPLY

- A fixed line broadband internet connection using a modem ☐
- Telephone dial-up using a modem (narrowband) ☐
- Mobile broadband using your mobile phone ☐
- Mobile broadband using a dongle ☐
- Other ☐
- Don't know ☐
- Refused ☐

Q27. [If fixed] **Thinking about your fixed line broadband internet connection at home, what type do you currently have?**

- ADSL broadband using your telephone line ☐
- High speed fibre broadband (FTTH/Superfast) ☐
- Cable modem ☐
- Other wireless connection ☐
- Satellite broadband ☐
- Don't know ☐
- Refused ☐

Q28. **Which of the following places do you at least occasionally connect to the internet?**

1. At home ☐
2. At work ☐
3. On mobile phone or tablet outside of home & work ☐
4. At a friend or relative's house ☐
5. At a public place using their facilities ☐
6. Don't know ☐
7. Refused ☐

Q29. **About how often do you use the internet from…?**

	Several times a day	About once a day	3-5 days p/w	1-2 days p/w	Less often	Never	D/K	Refused
1 above	☐	☐	☐	☐	☐	☐	☐	☐
2 above	☐	☐	☐	☐	☐	☐	☐	☐
3 above	☐	☐	☐	☐	☐	☐	☐	☐
4 above	☐	☐	☐	☐	☐	☐	☐	☐
5 above	☐	☐	☐	☐	☐	☐	☐	☐

Q30. How long have you been using the internet for?

Less than 6 months ☐

6 months to less than a year ☐

1-2 years ☐

3-4 years ☐

5-10 years ☐

More than 10 years ☐

Don't know ☐

Refused ☐

Q31. Are you aware of any public/semi-public places in your village which offer internet access, either for free or with a charge?

Yes _____ ☐

_____

_____

No ☐

Don't know ☐

Refused ☐

Q32. Are you aware of any local or community projects/initiatives to help people in your area gain access to the internet?

Yes _____ ☐

_____

_____

No ☐

Don't know ☐

Refused ☐

Q33. [If yes] **Have you participated in any of these?**

Yes _____ ☐

_____

_____

No ☐

Don't know ☐

Refused ☐

Q34. What could be done to help you get online/get online more?

_____

_____

Q35. On a scale of 1 to 10, with 10 implying 'extremely important' and 1 implying 'not at all important', how important is having access to the internet for you personally?

1 2 3 4 5 6 7 8 9 10

Not at all Extremely

Q36. On a scale of 1 to 10, with 10 implying 'extremely confident' and 1 implying 'not at all confident', how confident are you personally in using the internet?

1 2 3 4 5 6 7 8 9 10

Not at all Extremely

Q37. How much do you agree or disagree that...
I'm missing out by not using the internet and email more

- Strongly agree ☐
- Inclined to agree ☐
- Neither ☐
- Inclined to disagree ☐
- Strongly disagree ☐
- Don't know ☐
- Refused ☐

Q38. How much do you agree or disagree that...
The internet helps people get ahead in life

- Strongly agree ☐
- Inclined to agree ☐
- Neither ☐
- Inclined to disagree ☐
- Strongly disagree ☐
- Don't know ☐
- Refused ☐

Q39. How much do you agree or disagree that...
I sometimes feel left out when my friends talk about the internet

- Strongly agree ☐
- Inclined to agree ☐
- Neither ☐
- Inclined to disagree ☐
- Strongly disagree ☐
- Don't know ☐
- Refused ☐

Q40. Tell me if you use the internet to do any of the following things:

	Reg	Occas	Rare	Never
Email	☐	☐	☐	☐
Browse to pass time	☐	☐	☐	☐
Information seeking (searching etc)	☐	☐	☐	☐
Social networking (FB, G+, MyS, LIn)	☐	☐	☐	☐
Twitter	☐	☐	☐	☐
Instant messaging	☐	☐	☐	☐
News	☐	☐	☐	☐
Weather	☐	☐	☐	☐
Banking/finance	☐	☐	☐	☐
Bill payment	☐	☐	☐	☐
Blogging	☐	☐	☐	☐
Learning/education	☐	☐	☐	☐
Shopping	☐	☐	☐	☐
eHealth	☐	☐	☐	☐
Travel bookings	☐	☐	☐	☐
Leisure information	☐	☐	☐	☐
Sports results	☐	☐	☐	☐
Civic engagement	☐	☐	☐	☐
eGovernment	☐	☐	☐	☐
Online common interest communities	☐	☐	☐	☐
Music (download songs, stream, etc)	☐	☐	☐	☐
Gaming	☐	☐	☐	☐
Photo uploading/sharing	☐	☐	☐	☐
Video streaming/IPTV	☐	☐	☐	☐
Skype/other VoIP	☐	☐	☐	☐
Maps/directions	☐	☐	☐	☐
Dating	☐	☐	☐	☐
Selling	☐	☐	☐	☐
File downloading/sharing	☐	☐	☐	☐
Family history	☐	☐	☐	☐
Business management	☐	☐	☐	☐
Career related activities (job search etc)	☐	☐	☐	☐
Create/work on my own website	☐	☐	☐	☐
Other _____	☐	☐	☐	☐

Q41. Do you belong to an email list, list-serv or discussion forum for your neighbourhood?

Yes ☐
No ☐
Don't know ☐
Refused ☐

Q42. Were you aware of a program to bring superfast broadband to Cornwall?

Yes, fully aware ☐
Somewhat aware ☐
No, unaware ☐
Don't know ☐
Refused ☐

Q43. Do you intend to sign up for superfast broadband when it becomes available?

Yes, definitely ☐
Yes, maybe ☐
Undecided ☐
No, probably not ☐
No, definitely not ☐
I already have ☐
Don't know ☐
Refused ☐

Q44. What are the main reasons you would give for wanting to sign up to superfast broadband?

_____
_____
_____
_____

Q45. What are the main reasons you would give for not wanting to sign up to superfast broadband?

_____
_____
_____
_____

Q46. Overall, how satisfied or dissatisfied are you with the way things are going in your life today?

- Very satisfied ☐
- Satisfied ☐
- Neither ☐
- Dissatisfied ☐
- Very dissatisfied ☐
- Don't know ☐
- Refused ☐

Q47. And how satisfied or dissatisfied are you with your life in [insert village]?

- Very satisfied ☐
- Satisfied ☐
- Neither ☐
- Dissatisfied ☐
- Very dissatisfied ☐
- Don't know ☐
- Refused ☐

Q48. How would you rate the level of community spirit in [insert village], relative to other villages in Cornwall?

- Very high ☐
- Above average ☐
- Average ☐
- Below Average ☐
- Very low ☐
- Don't know ☐
- Refused ☐

Q49. How would you rate the level of affluence in [insert village], relative to other villages in Cornwall?

- Very high ☐
- Above average ☐
- Average ☐
- Below Average ☐
- Very low ☐
- Don't know ☐
- Refused ☐

Q50. In the past 6 months, how often have you felt socially isolated?

- Always ☐
- Usually ☐
- About half the time ☐
- Rarely ☐
- Never ☐
- Don't know ☐
- Refused ☐

Q51. In the past 6 months, how often have you felt geographically isolated?

- Always ☐
- Usually ☐
- About half the time ☐
- Rarely ☐
- Never ☐
- Don't know ☐
- Refused ☐

Q52. To what extent do you agree with the following statement: 'The internet makes me feel more socially connected and involved'?

- Strongly agree ☐
- Inclined to agree ☐
- Neither ☐
- Inclined to disagree ☐
- Strongly disagree ☐
- Don't know ☐
- Refused ☐

Q53. To what extent do you agree with the following statement: 'The internet helps to counteract feelings of geographical isolation'?

- Strongly agree ☐
- Inclined to agree ☐
- Neither ☐
- Inclined to disagree ☐
- Strongly disagree ☐
- Don't know ☐
- Refused ☐

Q54. Please tell me how much, if at all, the internet has helped you do each of the following things:

	A lot	Some	Only a little	Not at all	D/K	Refused
Becoming more involved with groups & org's you already belong to	☐	☐	☐	☐	☐	☐
Finding people or groups who share your interests	☐	☐	☐	☐	☐	☐
Finding people or groups who share your beliefs	☐	☐	☐	☐	☐	☐
Connecting with people of different ages and generations	☐	☐	☐	☐	☐	☐
Connecting with people from different racial or ethnic backgrounds	☐	☐	☐	☐	☐	☐
Connecting with people from different economic backgrounds	☐	☐	☐	☐	☐	☐
Connecting with groups or organisations that are based in your local community	☐	☐	☐	☐	☐	☐

Q55. How frequently do you go outside of [insert village]?

- Every day ☐
- Most days ☐
- Few times a week ☐
- Weekly ☐
- Every two weeks ☐
- Monthly ☐
- Less than monthly ☐
- Don't know ☐
- Refused ☐

Q56a. Which other towns and villages do you visit most often? [List them]	**Q56b. For what purpose/s do you visit them?**
1._____	**1.**_____
2._____	**2.**_____
3._____	**3.**_____
4._____	**4.**_____
5._____	**5.**_____

Q57. Do you know most of the neighbours who live close to you?

- Yes, know all of them ☐
- Yes, know most of them ☐
- Yes, know only some of them ☐
- No, do not know any ☐
- Do not have neighbours close by ☐
- Don't know ☐
- Refused ☐

Q58. Now thinking about the neighbours you know by name… How often would you say [insert in order] over the last six months?

	You had a face-to-face conversation with one of your neighbours	You talked with one of your neighbours over the phone	You sent or received an email from one of your neighbours
Every day	☐	☐	☐
Most days	☐	☐	☐
Few times a week	☐	☐	☐
Weekly	☐	☐	☐
Every two weeks	☐	☐	☐
Monthly	☐	☐	☐
Less than monthly	☐	☐	☐
Never	☐	☐	☐
Don't know	☐	☐	☐
Refused	☐	☐	☐

Q59a. In the past 6 months, have you helped any of your neighbours in the following ways?

	Yes	No	D/K	Refused
a. Listened to their problems	☐	☐	☐	☐
b. Helped them with household chores, shopping, repairs, house-sat, or lent them tools or supplies	☐	☐	☐	☐
c. Cared for them or a member of their family, either a child or an adult	☐	☐	☐	☐
d. Lent them money	☐	☐	☐	☐

Q59b. In the past 6 months, have any of your neighbours helped you in any of the following ways?

	Yes	No	D/K	Refused
a. Listened to your problems	☐	☐	☐	☐
b. Helped you with household chores, shopping, repairs, house-sat, or lent you tools or supplies	☐	☐	☐	☐
c. Cared for you or a member of your family, either a child or an adult	☐	☐	☐	☐
d. Lent you money	☐	☐	☐	☐

Q60a. Are you involved with, or a member of, any community organisations, groups or clubs *in [insert village]*? [List them]

Q60b. How frequently do you meet with this organisation / group / club? [Tick relevant box for each organisation / group / club]

Organisation / group / club	Daily	Most days	Few times/wk	Weekly	Every 2 wks	Monthly	Quarterly	Yearly
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐
________	☐	☐	☐	☐	☐	☐	☐	☐

Q61a. Are you involved with, or a member of, any organisations, groups or clubs *which operate outside of your village*? [List them]

____

____

____

____

____

____

____

Q61b. How frequently do you meet with this organisation / group / club? [Tick relevant box for each organisation / group / club]

Daily	Most days	Few times/wk	Weekly	Every 2 wks	Monthly	Quarterly	Yearly
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

Q62. How do you keep up-to-date with news and updates from these organisations / groups / clubs? [Tick all that apply]

- I'm on the organisation/group/club mailing list ☐
- I look at the organisation/group/club website ☐
- I look at the village website ☐
- I check the organisation/group/club Facebook/Twitter/other social media ☐
- Via emails from other members ☐
- Via telephone calls with other members ☐
- Via text messages from other members ☐
- Via social media messages from other members ☐
- By post ☐
- I check the noticeboard ☐
- I read the parish magazine/newsletter ☐
- By word of mouth ☐

Q63a. Within your neighbourhood, what do you personally consider to be the most important places outside of your home (both public and semi-public places)? [List all; Explain 'public' & 'semi-public']

Q63b. Do you feel wireless internet access would enhance these places? [If already present, does it enhance?]

	Yes	No	Maybe	D/K	Refused
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

Q64a. In the past month, how many times did you go to any of the following places and stay for more than 15 minutes?

	1 time	2-3 times	4+times	Not in past month	D/K	Refused
A café or coffee shop	☐	☐	☐	☐	☐	☐
A church, synagogue, mosque or temple	☐	☐	☐	☐	☐	☐
A public library	☐	☐	☐	☐	☐	☐
A fast-food restaurant	☐	☐	☐	☐	☐	☐
Any other type of restaurant	☐	☐	☐	☐	☐	☐
A community centre	☐	☐	☐	☐	☐	☐
A village hall	☐	☐	☐	☐	☐	☐
A pub/bar	☐	☐	☐	☐	☐	☐
A public park/square	☐	☐	☐	☐	☐	☐

Q64b. While you were there, did you access the internet – whether on a computer, iPad, mobile phone, PDA or other device?
[If present for more than 15 minutes]

	Yes	No	D/K	Refused
A café or coffee shop	☐	☐	☐	☐
A church, synagogue, mosque or temple	☐	☐	☐	☐
A public library	☐	☐	☐	☐
A fast-food restaurant	☐	☐	☐	☐
Any other type of restaurant	☐	☐	☐	☐
A community centre	☐	☐	☐	☐
A village hall	☐	☐	☐	☐
A pub/bar	☐	☐	☐	☐
A public park/square	☐	☐	☐	☐

Appendix 2: Interview Topic Guide

- A little about you?
- Your background?
- A little about your life in the village?
- How did you come to live here? Duration living here?
- Keen to stay here?
- Visit other places often? Why?
- Feel isolated here (socially or geographically)?
- Affluence of village?
- Public and semi-public spaces in village?
- How do you use the village?
- Interaction with neighbours?
- Your community involvement?
- Community spirit in your village?
- Do in your free time? Cultural activities? Who with?
- Who do you see socially? Strong and weak ties? People you see less often?
- Key people in the village?
- Fabric of village life?
- Important village roles?
- Relationship with technology?
- Internet use? Internet in home?
- Use of other technologies (mobiles, etc.)
- How and where you go online?
- Importance of internet to you?
- How often go online?
- How long an internet user?
- Online activities?
- Reasons for engagement or disengagement?
- Excluded/Included/Constrained/Determined/Dismissive/Connected non-user/Disconnected non-user?
- Access/Motivation/Skills/Confidence?
- Confidence with technology? How do you feel relative to those around you?
- Benefits of technology and internet? Dangers? Does it help you? Help you overcome things?
- Internet use in the village? Others around you using it?
- Awareness of and interest in 'Superfast'? Why? Why not?
- Feeling amongst villagers about 'Superfast'? Enthusiasm? Disinterest? Why?
- Community projects to get online?
- What do you need to get online/get online more?
- Changing how you interact with immediate local space and wider spatial environment?

Appendix 3: Diary Instructions

Instructions for the 'Interaction Diary'

Please call me any time on [redacted] or [redacted] if you have any questions or concerns.

Alternatively, you can email me at **pamela.varley@plymouth.ac.uk.**

- The 'Interaction Diary' records your interactions with both people and technology.
- It should be kept for two full weeks (fourteen days); Please start the diary on a Monday; Use as many pages as you need for each day.
- Don't worry if you make a mistake or omit something; Simply rectify the mistake as best you can and continue to use the diary.
- Start each day on a new page and be sure to date it (e.g. 'Monday April 29th 2013').
- Try to record **each time you have contact with somebody**, be it face-to-face or using an electronic communication device.
- Also try to record **your use of different technologies** over the fourteen days.
- For each individual entry on a given day, please include the following:
  1. The time of day which the diary entry refers to (e.g. '13:45')
  2. Where you were (e.g. 'At the bar in my local village pub', 'In the kitchen of my own home', 'In the Post Office', etc.)
  3. The means of interaction (e.g. 'Face-to-face conversation', 'Laptop', 'Mobile telephone', 'Landline', 'Desktop computer', 'iPad', 'Fax machine', 'Pager', 'Internet connected television', etc.)
  4. How long it lasted (e.g. 'Fifteen minutes' on the laptop, 'A half hour' face-to-face conversation, etc.)
  5. Specifics of the interaction, such as who, what and why (e.g. 'I chatted with my friend, Michael, about the weather', 'I searched for bus times online', 'I ordered my weekly shop from Tesco to be delivered to my home', 'I telephoned my close friend, Julie, to invite her round for tea', 'I entered a TV competition', 'I used my iPhone to locate a nearby restaurant', 'I emailed my dad, John, to see how he was', 'I sent my sister, Anne, a Facebook message', 'I checked my bank balance', etc.)
  6. Any comments you may have about the experience (e.g. difficulties you encountered or something that surprised you)

Appendix 4: Social Network Analysis Name Generator Questions

Q1.

From time to time, most people discuss important matters with other people. Who are the people with whom you discuss matters important to you?

Q2.

Who from outside your home has recently helped you with tasks around the home, such as painting, moving furniture, cooking, cleaning or major or minor repairs?

Q3.

Suppose you need to borrow some small thing like a tool or a cup of sugar, from who outside your household would you ask to borrow it?

Q4.

If you need to borrow a large sum of money, say £1,000, whom would you ask for help?

Q5.

Who are the people you really enjoy socialising with?

Q6.

Please list anyone who is especially close to you who you have not listed in one of the previous questions.

Appendix 5: Social Network Analysis

Name Interpreter Questions

THEIR GENDER

1 – Male
2 – Female

CONNECTION TO THEM

1 – Friend
2 – Child
3 – Spouse/Partner
4 – Brother/Sister/Sibling
5 – Other familial tie
6 – Parent
7 – Co-worker
8 – Co-member of group
9 – Neighbour
10 – Advisor
11 – Online friend
12 – Acquaintance
13 – Other
14 – Don't know
15 – Refused

CLOSENESS TO THEM

Scale from 1 to 5
1 - Not at all close; 5 - Extremely close

DURATION KNOWN

1 – Less than a year
2 – 1 to 2 years
3 – 3 to 5 years
4 – 6 to 10 years
5 – 11 to 20 years
6 – More than 20 years
7 – All respondent's life
8 – Don't know
9 – Refused

PROXIMITY TO THEM

1 – Same house
2 – Same street
3 – Same neighbourhood
4 – 1 mile to 5 miles
5 – 6 miles to 10 miles
6 – 11 miles to 25 miles
7 – 26 miles to 50 miles
8 – 51 miles to 100 miles
9 – 101 miles+
10 - Abroad

FREQUENCY OF CONTACT

1 – Several times per day
2 – Daily
3 – Several times per week
4 – Once a week
5 – Once a fortnight
6 – Once a month
7 – Less often
8 – Never
9 – Don't know
10 - Refused

MEANS OF CONTACT

1 – Face-to-face
2 – Mobile (telephone call)
3 – Mobile (text)
4 – Landline
5 – Post
6 – Email
7 – Instant message
8 – Social networking
9 – Skype/VoIP

WHERE YOU SEE THEM

Freetext; Record all 'places' mentioned

Appendix 6: Social Network Analysis Adjacency Matrix Example

Complete adjacency matrix with respondent to ascertain which alters know which alters.

X	**Ben**	**Tom**	**Meg**	**Kat**	**Al**	**Don**																								
Ben	**X**	Yes	Yes	No	Yes	Yes																								
Tom	Yes	**X**	Yes	No	Yes	Yes																								
Meg	Yes	Yes	**X**	No	Yes	Yes																								
Kat	No	No	No	**X**	Yes	Yes																								
Al	Yes	Yes	Yes	Yes	**X**	No																								
Don	Yes	Yes	Yes	Yes	No	**X**																								
							X																							
								X																						
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																												X		
																													X	
																														X

Appendix 7: Information Sheet Example (Survey)

Information Sheet
Sustainable Digital Neighbourhoods Project
Survey

Sustainable Digital Neighbourhoods

My name is Pamela Varley and I am a PhD student in the School of Architecture, Design and Environment at Plymouth University. As you may be aware, superfast broadband technology is being rolled out in your village. My research is designed to explore the real social and spatial effects of this technological transition. I am conducting research in your village and in others in Cornwall, some of which will be at different stages of the transition cycle. Over-16s that are resident full-time in the village under consideration are eligible to take part.

Before you decide to participate, it is important that you understand what the research will involve. Please take time to carefully read this information sheet. Feel free to ask questions if there is anything you are unsure about. I hope this information will help you to decide whether or not you wish to participate.

Purpose of the Research

I will be studying the impact of access to broadband on how people interact and use semi-public spaces, and the consequential effect of this on social inclusion. The eventual aim is to deliver recommendations for significant improvements in the integration of online social networks with place-based communities, so as to promote inclusion and overcome digital divides at neighbourhood level.

Participation

If you agree to take the survey, you and I will agree on a neutral location where the survey may take place. I will administer the questionnaire and the whole process will last approximately thirty minutes. The questionnaire will be fully-structured (i.e. it will have a set number of pre-defined questions) and will cover four broad themes - some demographics and background on you as an individual; your relationship with technology; your views on the neighbourhood in which you reside; and your views on social networks within your neighbourhood. You may decline to answer any question you wish during the survey.

You may request a debrief session at any point, during which I will address any questions or concerns you may have about the research.

Risks and Benefits of Taking Part

There are no risks involved in you participating in this research. You need only share personal information to an extent with which you are comfortable. All survey data collated will be anonymised.

Results will be shared with participants upon completion of the study, either via a specially arranged neighbourhood talk or a tailored report. This will benefit you and your community in that it will help you to better understand the interplay between the use of technology and the place where you live.

Consent

All research participants will be provided with a copy of this information sheet and asked to sign a consent form prior to participating in this research. Participation is entirely voluntary and you may opt out at any point during the survey without penalty. Any data collected prior to you withdrawing would then be omitted from the study. If you do complete the survey, you may request that your data be withdrawn from the study up to three weeks after the survey takes place.

Privacy

All information gathered during the course of this research will be treated confidentially. It will be anonymised and stored securely for a period of ten years, as per University of Plymouth policy.

Thank you

I wish to thank you for reading this information sheet and for taking the time out to participate in my research. It is very much appreciated.

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Appendix 8: Consent Form Example (Survey)

Informed Consent Form
Sustainable Digital Neighbourhoods Project
Survey

- You are being asked to participate in a research study. Your participation is voluntary.
- You should take some time to carefully read through the information sheet provided to you, making sure you are comfortable with everything it states.
- Please ask questions about anything you are unsure of before deciding whether or not to participate.
- If you decide to go ahead with the survey, you will be asked to sign this form.
- You will be given a copy of this form to keep for your own records.

	Please tick box
1. I confirm that I am aged 16 or over.	☐
2. I confirm that I have read and understood the information sheet which was provided to me.	☐
3. I confirm that I was given the opportunity to ask questions.	☐
4. I understand that I may decline to answer any question I wish during the survey.	☐
5. I understand that my participation is voluntary and that I may opt out at any point during the survey without penalty.	☐
6. I understand that I may request my data be withdrawn from the study up to three weeks after the survey takes place.	☐
7. I voluntarily agree to participate in this study and take the survey.	☐

Participant Name	**Participant Signature**	**Date**

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