Sustainable Digital Neighbourhoods: A Study of the Social and Spatial Effects of Technological Transition in a Rural Village

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**DIGITAL
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1. INTRODUCTION

This report offers a description of a PhD study which is still ongoing. It commenced in October 2012, with primary fieldwork conducted during the period April to December 2013. A final thesis is expected by October 2015. What follows is an introduction to the topic under investigation; an account of the extensive fieldwork which has been undertaken to date, and which is now complete; and some notes on the way in which the research is developing. The PhD research has been part-funded by *Superfast Cornwall.*

1.1 Abstract

Against a backdrop of *Superfast Cornwall*'s ongoing ambitious upgrade to the county's broadband infrastructure, 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. It questions how a rural community might truly be affected by the rollout of superfast broadband in their locale, considering both their social networks and their relationships with the place in which they live. Furthermore, it seeks to uncover the conditions conducive to a community leveraging this newly acquired superfast broadband as an enabler for positive transformation.

Fieldwork has involved working in an embedded manner within a central case study neighbourhood – St Breward, a rural Cornish village, as well as complementary research in a number of additional villages. A wide range of research 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. This thesis demonstrates the great benefits which arise when the optimum social, spatial and technological conditions align, and discusses the important roles played by each of these three elements. The reliance of a rural community on the 'local' and upon more traditional means of communication has been

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 constructively. What unfolds in this thesis is an advanced understanding of the interplay between broadband use, social interaction and the place in which people live.

1.2 Background

The impact of a technological step-change on a locality will depend on many things, not least the state of readiness or digital preparedness of the place for advancement. Attitudes and skills levels of residents, willingness to engage and prior 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). This sentiment is also noted 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). It is clear one must account for the specificities of place when assessing the potential impact of any newly-deployed technology.

Gilbert et al. (2010) describe how, over the years, history has made it clear that rural communities possess a unique set of technological needs. "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: 1367). 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 optimum, 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. "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" (Gurstein, 2003).

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 space 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 village hall, the chapel and so on. Together, these places set the scene where village life can unfold. Rural villages operate on a different level socially to more urban areas. As one 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." 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.

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

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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 privileged learned to enjoy ever-increasing bandwidth. Cornwall, the southernmost county of England, is 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 runs 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" will run until 2015 and it aims to bring fibre optic broadband to 95% of homes and businesses in Cornwall and the Isles of Scilly. It is intended that the remaining 5% will also be privy to faster broadband speeds via alternative technologies, such as satellite. The company themselves describe the scale of this infrastructural upgrade as "unprecedented anywhere in Europe," and maintain that "Learning, playing and working will be transformed, encouraging innovation amongst the region's businesses" (Ibid).

As of November 2013, *Superfast Cornwall* had succeeded in rolling out fibre broadband to approximately 82% of Cornwall, with in excess of 35,000 homes and businesses having chosen to sign up, and this fibre footprint extended throughout 2014 and early 2015, moving ever closer to the initial project targets. 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, a gap in existing knowledge which this research is attempting to bridge.

The infrastructure upgrade taking place in Cornwall at present provides a unique opportunity to undertake original and timely research on the relationship between neighbourhoods, ICTs and social inclusion. 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. There is a need for policies of best practice to enable communities to make efficient use of the technological services they have, or will soon have, at their disposal.

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. Simply providing access to superfast broadband services is not enough. It should not be seen as a technological 'quick fix' to solve social problems, needing instead to be tied together appropriately with the necessary 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. The remote village requires a separate toolkit to bring it to the point of optimum digital preparedness. Its residents and their digital habits, its village spaces, and the way in which the village operates must be considered and explored when deploying any new technology in order to ensure said technology is used in any long-term and meaningful capacity. 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.

This thesis endeavours to address some of these problems, in order to move us closer to an advanced understanding of what rural communities need in place so that they may make technological transition meaningful for them and their villages, and not just allow superfast broadband to drift in, becoming an invisible, and perhaps unrealized, community asset.

1.3 Aims

This research sets out to look beyond the rhetoric and hype surrounding superfast broadband's ability to transform the lives of Cornwall's residents, and to explore the true social and spatial effects of such a technological transition. Its primary aim is 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.

It is difficult to predict the impact of technologies as their impact is by no means uniform; the same technologies will affect different settings and social groups in a range of diverse ways. This thesis addresses the lived experience of rural villagers through this change, and considers what this technological transition means for them. Will increased connectivity change the way in which

village residents engage with one another? Will it alter how they interact with their spatial environment? This research explores whether superfast broadband technology can be leveraged as a key enabler for positive social transformation; more specifically, if it can be harnessed to improve social cohesion, enhance one's sense of belonging/place and overcome digital divides. 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 thesis adds to the existing body of knowledge on this topic, much of which offers conflicting points of view on the community effects of increased ICT availability and use. Specific research questions addressed by this PhD are as follows:

- How might a rural village community be affected by the rollout of superfast broadband in their locale?
    - Consider both social and spatial effects:
        - » Residents' social networks
        - » Residents' relationship with the 'place' in which they live

- What are the conditions conducive to a community leveraging superfast broadband as an enabler for positive transformation?
    - Consider both social and spatial conditions:
        - » Social cohesion
        - » Sense of 'place'
        - » Digital divides

2. METHODS

2.1 Overview of Methods

This PhD research employs mixed methods, carried out in an embedded manner within a case study village, St Breward. Following a period of getting to know the village and the key players within the community – the 'gatekeepers,'

the principal investigator was able to immerse themselves in village life, staying with local residents for days at a time, and acquiring a thorough understanding of how the village operates socially and spatially, as well as its existing relationship with technology. At the time of fieldwork, transition to superfast broadband was ongoing and plans soon got underway to make use of the technology for the local community. A comprehensive survey administered face-to-face 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. Audio-recorded, in-depth face-to-face interviews also played a part, with respondents further elaborating on the aforementioned themes. In addition, some respondents also completed a two-week diary, documenting their social and technological interactions and commenting on their experiences. Another method from which this thesis draws upon is social network analysis. The following section offers an in-depth description of the social network analysis processes which were carried out during the course of this research.

St Breward's population 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 (usually the respondent's home).

Section one consisted of a series of six open-ended name generator questions, designed to elicit a thorough list of alters within respondents' personal networks (see Appendix 1). 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; primarily core network ties most prominent in respondents' lives, who go beyond being mere acquaintances.

The next section sought to interpret each alter identified by the respondent in greater detail, addressing both the attributes of the alter and the nature of their relationship with the respondent. Data for eight additional variables was collected during this phase – the alter's gender, the nature of the alter's relationship with the ego, 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 and the places in which the alter sees the ego (see Appendix 2).

The final section laboriously explored the ties among the alters identified by the respondent in section one. An adjacency matrix was created, with the respondent asked to identify links between alters for every potential tie. Each possible interrelationship was considered, asking, for example, 'does Frederic know Sophie?' 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 network.

In total, 1,618 social relationships were revealed by the research 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 analysed using both SPSS and UCINET.

2.2 The Case Study Neighbourhood

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 requiring some mode of transport to traverse the surrounding, winding moorland roads. Villages of this sort 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.

Satisfaction levels amongst residents of St Breward are very high. 97% of those surveyed stated they were either "satisfied" or "very satisfied" with their life in the village of St Breward, with 89% of people describing the level of community spirit in their village, relative to other villages in Cornwall, as "above average" or "very high." 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. The village itself has more than 30 active local community groups (impressive for a parish with a population measuring less than 1000), and 71% of those surveyed reported involvement with at least one of these. It is not an affluent village, falling into the bottom 50% of Cornwall's 327 LSOAs on the Index of Multiple Deprivation (Department for Communities and Local Government, 2010). 65% of those surveyed rated 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."

St Breward has a pub (pictured below), 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, 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 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 below), ceased its operations, owing to a change in the personal circumstances of the owners.

Figure 1: St Breward's Local Pub and Post Office

A total of 104 people 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 illustrates the geographical distribution, by postcode, of all 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, though none of the people spoken to for this research had any specific knowledge regarding their internet futures.
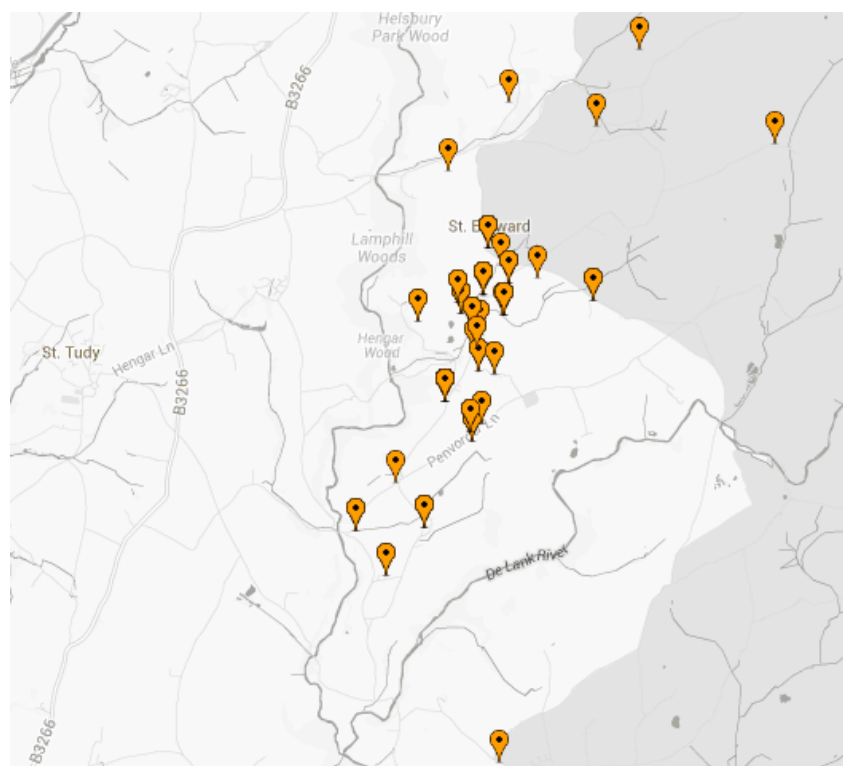

Figure 2: Geographical Distribution (by Postcode) of St Breward's 104 Case Study Respondents

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 makeup of the sample may be seen in Figure 3 below.
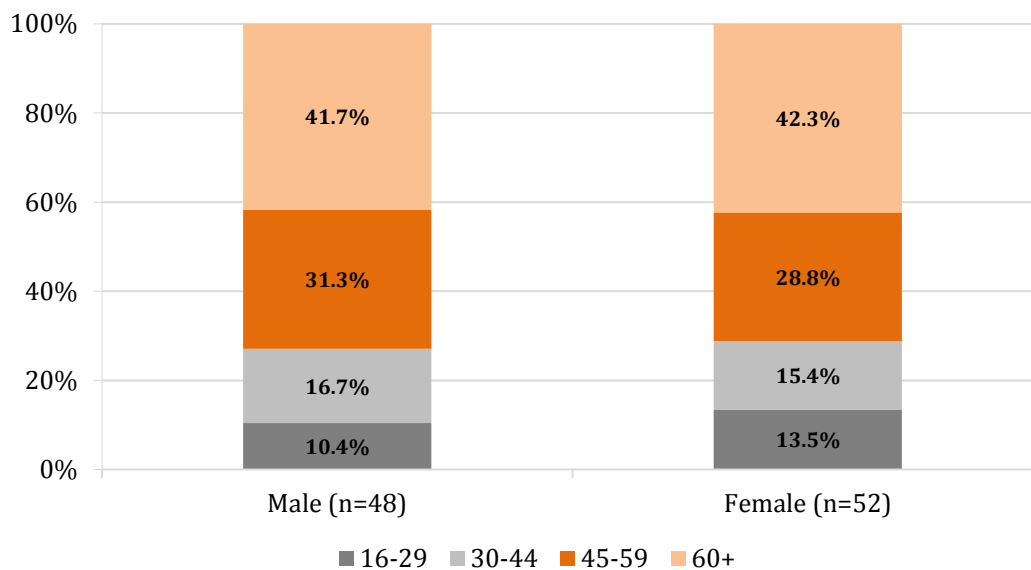

Figure 3: Age and Gender Distribution of St Breward's 100 Survey and Social Network Analysis Respondents

3. OUTCOMES

89% of those surveyed are at least 'occasional' internet users, with a further 3% having just started going online. 90% come from a home with internet access, all of which have fixed broadband connections. A considerable 59% of people have an internet-enabled mobile phone or tablet. However, not as many as have the facility use it whilst on the move. Although, on the surface of it, this may seem like a technologically well-connected village, this research aims 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 being used in reality to facilitate social interactions for village residents.

Of the total 1,618 social relationships reported by the 100 egos, email was used in just 27.3% of cases; a figure actually comparable to that of postal services used by 26.3%. Social networking and instant messaging were yet

more infrequent at 14.8% and 6.4% respectively. As can be seen from Table 1 below, the dominant modes of communication facilitating the social relationships of village egos are face-to-face communication, present in most instances, and the more traditional mode of contact – the landline telephone, used in 74.5% of cases.

$Means_of_Contact Frequencies		Responses		Percent of Cases
		N	Percent	
CONTACT_MODES[a]	Face-to-Face	1607	28.8%	99.3%
	Mobile Call	826	14.8%	51.1%
	Mobile Text	603	10.8%	37.3%
	Landline	1205	21.6%	74.5%
	Post	426	7.6%	26.3%
	Email	441	7.9%	27.3%
	Instant Messaging	103	1.8%	6.4%
	Social Networking	239	4.3%	14.8%
	Skype/VoIP	124	2.2%	7.7%
Total		5574	100.0%	344.5%
a. Dichotomy group tabulated at value 1.				

Table 1. Means of Contact with Alters by 100 Egos

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, both locally and beyond, 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 to sustain their social relationships. Nor are they depending on 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 currently using relatively basic services to enhance their social contact with others.

Whilst 22.6% 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 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 is. So, whilst superfast broadband may now enhance the Skype experience for those who acquire it, there is clearly 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.

The fear that modern technology will supplant, rather than supplement, our communications with others was articulated by one elderly St Breward gentleman: "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 gentleman favours more traditional means of information-seeking and spoke fondly about the process of thumbing through his dictionary or his encyclopaedia if he needs to know something; a practice he feels is being lost in the modern age. This was an attitude shared by many others, and further asserted the preference by some for traditional modes of communication.

Residents of St Breward seemed to share a sense of collective identity by virtue of their location within the geographical bounds of St Breward. They feel connected to the community and get involved to a degree with which they are comfortable doing so. 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, with the remainder undecided either way. One participant cautioned: "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." 66% of the sample saw the internet as something which helps to counteract feelings of geographical isolation, whilst 27% disagreed. Overall, the majority of people seemed 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 isolated. However, there is not mass consensus on this, and some of those who agree 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. But despite this enthusiasm, it does not appear to be having a truly considerable impact on their social interactions. Respondents were also asked to rate how much the internet had helped them to do a number of things. Table 2 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. Would a community forum or some other community-wide platform lead to more mixing across different generations of the same village via the internet? 42% also stated the internet was not helping them to connect with groups or organisations based in their local community. Perhaps community groups could be reaching more people with better-targeted online platforms.

	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 2. How Much has the Internet Helped you to Do Each of the Following Things?

Attitudes towards superfast broadband specifically 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!" Others feel 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."

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."

Reasons to resist signing up centred on cost, hearsay that it wasn't really all that different, it being a hassle, not wanting to change email address, etc. Many thought "It's more applicable on the business side of things than recreational." But one more prominent reason given was the feeling that it simply wasn't relevant to their needs and that their current setup was, in fact, satisfactory for their online requirements. "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?'" 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 preparedness in the rural village; a village not yet best placed to make the most of their new service; a village in need of some guidance or toolkit to show the way forward.

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." Other respondents spoke positively about the local internet café - it was something they could fall back on if they needed a helping hand.

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 sufficiently in St Breward, 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. The social and community needs can direct the way in which this technological step-change is harnessed. But where does the responsibility for this lie? A commercial deployer of a fibre optic broadband infrastructure has no real obligation to provide a community toolkit to the residents, businesses, schools, etc. they have just delivered this new service to. There is a need to provide St Breward's community members with "…the knowledge, skills, and supportive organizational and social structures to make effective use of that [superfast broadband] access … to enable social and community objectives" (Gurstein, 2003: 48).

4. DISCUSSION

What was observed in St Breward was 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 supplemented, by online modes of contact.

The government aims to transform the country's broadband infrastructure by 2015. Broadband Delivery UK (BDUK) manages the UK's Rural Broadband Programme, with an initial 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 is the more recent Superfast Extension Programme, which now aims to further extend superfast broadband coverage to 95% of the UK. There is a common theme running though the many policy documents and mission statements in the public domain – one of 'access.' But with the focus so firmly anchored in this idea of universal broadband access and, hence, equality of access to information and opportunities for all, what do we really

know about how our nation's cities, towns and villages will actually respond once access has been duly granted, and where does the responsibility lie for ensuring that their residents efficiently and responsibly seize these so-called opportunities 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. As highlighted by Gurstein (2003), "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, what should be the difference in approach to the contrasting geographical regions? Surely there is a need to ensure that any technology deployed is relevant to the community in which it is to be rooted. And, furthermore, 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. We see in the case of St Breward that much could be done to first bring a greater share of the community to a higher level of digital literacy, and to introduce a range of basic online services, before focusing on the more advanced services supported by superfast broadband; i.e. initially optimizing digital preparedness and, crucially, digital engagement.

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. 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).

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 will be to weave the effective use of fibre optic broadband services into the fabric of village life. For St Breward, and for other villages in Cornwall and beyond, without some guidance and policies of best practice on how to harness superfast broadband, it will indeed be what Weiser termed "a technology that disappears," not because it has been woven into village life but, rather, because it has not been seized as a community asset and has gone unnoticed by the majority. 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 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.

5. ACKNOWLEDGEMENTS

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6. REFERENCES

Carroll, J. M. (2012) *The Neighborhood in the Internet: Design Research Projects in Community Informatics*. New York: Routledge.

Gilbert, E., K. Karahalios and C. Sandvig (2010) 'The Network in the Garden: Designing Social Media for Rural Life', *American Behavioral Scientist*, 53(9): 1367 – 1388.

Gurstein, M. (2003) 'Effective Use: A Community Informatics Strategy Beyond the Digital Divide', *First Monday*, 8(12).

Gurstein, M. (2007) *What is Community Informatics (and Why Does it Matter)?* Milan: Polimetrica.

Komito, L. (2004) *The Information Revolution and Ireland: Prospects and Challenges*. Dublin: University College Dublin Press.

Mitchell, J. M. (2011) 'Equitable Access to the Online World', pp. 151-162 in D. A. Schon, B. Sanyal and W. J. Mitchell (eds), *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. Cambridge, MA: The MIT Press.

Mossberger, K., C. J. Tolbert and W. W. Franko (2013) *Digital Cities: The Internet and the Geography of Opportunity*. New York: Oxford University Press.

Oldenburg, R. (1991) *The Great Good Place*. New York: Marlowe & Company.

Rainie, L. and B. Wellman (2012) *Networked*. Cambridge, MA: The MIT Press.

Superfast Cornwall (2014) *About Superfast Cornwall* [online], Available from: http://www.superfastcornwall.org/about-sfc [Accessed: 01/04/2014].

Weiser, M. (1991) 'The Computer for the 21st Century', *Scientific American Special Issue on Communications, Computers, and Networks*, September.

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7. APPENDIX 1

Q65.
From time to time, most people discuss important matters with other people. Who are the people with whom you discuss matters important to you?

Q66.
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?

Q67.
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?

Q68.
If you need to borrow a large sum of money, say £1,000, whom would you ask for help?

Q69.
Who are the people you really enjoy socialising with?

Q70.
Please list anyone who is especially close to you who you have not listed in one of the previous questions.

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8. APPENDIX 2

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 (phone 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