# LEARNING FOR RURAL PLACES IN 'THE DIGITAL FUTURE'

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for the degree of Doctor of Philosophy
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September 2010

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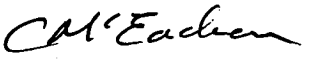

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## ABSTRACT

The thesis examines the linkages between changes in rural community relationships with place and the deployment of digital technologies. Though these technologies are becoming pervasive, ubiquitous and powerful within both formal and informal learning processes, little monitoring and evaluation of how the rapidly emerging 'digital future' will manifest within rural communities is occurring.

The unprecedented transformative power of digital technologies is widely expected to enhance rural quality of life and deliver sustainable, innovative and democratic policy outcomes for rural regions. Analysis of empirical data gathered from interviewees in two similar rural regions in Tasmania (Australia) and Norway suggests that these assumptions may be ill-founded and that the development of individual needs and community assets may be negatively shaped by digital technologies and, thus, contrary to the highly optimistic expectation of positive outcomes that prevails. There is also uncertainty about the development of the critical, cooperative and creative capacities that are required by rural communities if they are to claim ownership of the future.

Using elements of qualitative, case study and grounded theory methodologies, concerns raised by interview respondents are explored. Similar concerns exist in both study regions. These indicate a decline in shared responsibility for place assets, with digital technologies complicit in the spatial, temporal, informational and communicative stresses that are identified. The findings are triangulated through analysis of similar trends in a wider, not specifically rural, context.

As digital technologies transform relationships with geographical place, the capacity of rural communities to recognise, understand and act on these impacts is only weakly promoted within formal and informal learning structures. It is argued that the loss of agency over rapid change processes affecting rural communities and their assets will intensify without improved competencies and conditions for decision-making about 'the digital future'. With a new generation of digital technologies rapidly emerging, it is imperative that the loss of agency within rural communities be rectified.

## ACKNOWLEDGEMENT

Having enjoyed living most of my life in rural and regional communities, the opportunity to investigate 'change, continuity and place' has been motivating. Such an exploration has been a much longer journey than ever expected and I thank those who offered support and encouragement along the way.

Special appreciation to the University of Tasmania for financial support, and to the University of Oslo's Institute for Educational Research and Centre for Technology, Innovation and Culture, and the Western Norway Research Institute, for their in-kind support for the extensive field work.

The unwavering encouragement of my supervisor, Dr Peter Hay, has been invaluable.

I also appreciated the exchange of ideas and companionship of Greg, Kate, Paul and other post-graduate students and staff at UTAS' School of Geography and Environmental Studies. Michael Lockwood's help with final formatting was also appreciated.

A final thanks to Stephen, John, Arne and all my family (especially Elspeth and my recently deceased Mum) and the good people of the Huon and Sogn.

*Tusen takk, alle.*

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**ACRONYMS**

ABC (Australian Broadcasting Corporation)

ABS (Australian Bureau of Statistics)

A.D.H.D. (Attention Deficit Hyperactivity Disorder)

BBC (British Broadcasting Corporation)

BRS (Bureau of Rural Sciences)

ICT (Information and Communication Technologies)

NGO (Non-Government Organisations)

NSD (Norwegian Social Sciences Database Services)

OECD (Organisation for Economic Co-operation and Development)

PISA (Programme for International Student Assessment)

SME (Small-Medium Enterprises)

UNDP (United Nations Development Program)

UNESCO (United Nations Education Science and Cultural Organisation)

WBCSD (World Business Council for Sustainable Development)

WCED (World Commission for Sustainable Development)

# CHAPTER 1: INTRODUCTION

## 1.1 The challenges of change

What are the optimal learning conditions for rural communities to achieve a sustainable, self-determined future? What is needed for effective community engagement with, ownership of and responsibility for monitoring and evaluating the direction and nature of change?

To answer these questions it is necessary to understand the points of intersection between rapid rural change, a lagging understanding of the importance of, and the conditions for, sustainability, and the rush to embrace digital technologies as a beneficial agent of desired change.

Rapid change is being experienced in rural regions in all countries. Global urbanisation and consumption, together with innovations in science and technology, are accelerating change economically, socially and ecologically. Arguably, these changes are more intense in rural areas historically cushioned by space. Living standards and quality of life indicators are changing in regional areas, both positively and negatively. The overall situation is complex and more uncertainty is now cast over rural futures than it is over those of urban citizens.

One of the primary normative claims made by democracy as a form of government is that it establishes the conditions for robust, dynamic and responsible engagement by citizens in the determination of their own futures. The complexity of globalised change processes challenges the capacity of rural communities to engage constructively in self-determination. As decision-making in economic, social and ecological spheres becomes increasingly centralised, agricultural regions the world over are losing their perceived 'locus of control'.

There is a need to understand the factors influencing rural communities' perceptions of their capacity to take responsibility for the future of their presumed chosen locations. The social impact of change within regions manifests in widespread expressions of concern over the ability of communities to sustain themselves into the future. Those engaged in farming, fishing, forestry and mining have long thought of the uncertainties governing their lives. Human security issues are always surfacing,

especially in economic terms. Deeper still lie doubts over the viability of continuous commitment to place. The concept of 'place' raises strong social and, indeed, cultural issues, such as identity, which is linked to individual and community anxiety over the capacity to manage change. Yet, debate mostly focuses upon the conflict - a very real conflict - between economic and ecological goals.

Three policy concepts directed at shaping future human development seem particularly salient to the investigation. These are 'sustainability' and the 'learning economy' for innovative regions (Archbugi and Lundvall, 2001) and democratic citizenship. Sustainability mandates planning and action in accordance with long-term considerations. The learning economy is a concept that stresses the need to develop organisational and community potential for continuous creative problem solving. The theory behind innovative regions shares the sustainable development axiom of 'think globally – act locally'. Both concepts also strongly emphasise a democratic, citizen-managed ownership of change by individuals working together to utilise and share assets, including knowledge.

A significant common element in the policy concepts, and the theories that inform them, is the widespread use of and reliance on digital technologies for information and communication flow across all levels of society. This has two key aspects. Firstly, information and communication technologies or ICTs (also referred to in this thesis as digital technologies) are increasingly mediating between people in organizations, work and family, and replacing traditional forms of communication, learning and socialisation. These technologies include the internet, mobile phones and video/gaming devices. They have, within two decades or less, substantially transformed both the content and method of disseminating information and communication. They have affected time, place, and space as they overcome the boundaries that once defined nations states (Castells, 1996) and particularly rural communities and their physical relationships to each other and their environment.

The transition to the 'new economy' and the 'knowledge society' places the role of digital technologies at the forefront of all policy areas. The all encompassing vision of 'the digital future' underlines both the policy and public discourse about change. Digital technologies are expected to be vital tools for the successful transformation of rural communities via policies for sustainability and regional innovation (Forum for the Future, 2005). They are also central to the anticipated 'renaissance' and 'empowerment' of democratically active citizens (Castells, 1997) as virtual

communities of interest allow members greater freedom to think and act (Wellman and Haythornthwaite, 2002). Not only is it anticipated that digital technologies will provide 'enabling' information and 'engaging' consultation but they will facilitate direct participation in policy-making through online elections (OECD, 2001).

In sustainability policies ICTs are expected to facilitate innovative thinking and practices that will reduce impacts on the natural environment and build the capacity of individuals and communities to resolve complex challenges. In particular, digital technologies are linked to the premise that rural regions will undergo beneficial change by progressing towards the 'knowledge society' or 'learning society'. The technology adds to an overall pressure for individuals and organisations to embrace change in everyday life and at the institutional level underline text- in, for example, education, local government and business. Many moves to reform education are linked to ICT-based learning, and especially to the development of technical, information-processing skills.

The pervasive belief that the deployment of digital technologies is the essential means to realise a better future, challenges any investigation. However, as sociologist Zymunt Bauman advises: '...we need to pierce the walls of the obvious and self-evident, of that prevailing ideological fashion of the day whose commonality is taken for the proof of its sense' (2005: 1090).

### 1.2 Aims and objectives

The purpose of the research is to gain new understandings of the complex set of issues that need to be addressed by rural communities in any transformation to a more sustainable, innovative and democratic future; in particular, a clearer insight into the influences of digital technologies on a range of factors related to effective learning, decision-making and visioning of preferred futures.

Factors that may hinder or promote the role of digital technologies in strengthening the capacity of rural communities to determine their own futures will be identified, and emerging issues affecting policies and theories of concern to rural populations (not necessarily exclusively) will be explored. How capable are communities of making informed decisions about the role of digital technologies in shaping the future

of rural places? How can they improve the competencies and conditions to effectively deploy digital technologies for an enhanced quality of life?

The study critically analyses the assumptions underlying policies for sustainability, regional innovation and citizenship, including how individuals and communities respond to changes that have implications for motivations, abilities and opportunities to learn and engage for collective decisions, especially through ICTs. This is the framework for an empirical study of two geographically disparate regions.

The empirical components of the research will investigate issues emerging in theoretical discussions about technology and citizenship, especially in relation to often marginalised populations. To what extent do rural communities recognise a need to build their capacity to manage and negotiate the role of ICTs in learning and adaptation processes? How supportive are framework conditions for community analysis, monitoring and evaluation of the contribution digital technologies might make to their futures – indeed, what role do such technologies themselves play in the anxieties many people in rural communities feel?

The thesis will provide rural communities with practical tools to assist the envisioning of futures, to achieve ownership over change processes relevant to those futures and to build the capacity of communities to make informed, longer-term decisions.

## 1.3 Theories and policies for managing change: A conceptual framework and key definitions

The study's theoretical framework covers a wide range of concepts that reflect current ideas and policies devised to address the issues under consideration here. These policies include sustainability, the economics of agriculture and regional development, innovation, technology, education, citizenship and governance. Such complexity requires the research to be multidisciplinary. Theoretical discourses that help frame the study include social studies of science and technology, risk perception (Beck, 1992; 1999), modernity and identity (Giddens, 1990; 1991), communication (Habermas, 1984), human behaviour and responsibility (Schwartz, 1977), and dynamics of empowerment (Bauman, 2000a). The informational and communicative nature of digital technologies influences perceptions of needs, especially

psychological (Max-Neef, 1992). Other sociological theory concerning the information society and economy is brought to bear on the study, for example, the role of technology and knowledge in shaping futures (Adams, 2006). The placement of learning at the heart of 'visionary' theories of the 'knowledge society-learning economy' and 'sustainability' requires consideration of knowledge development for individuals, communities and organisations across micro, meso and macro levels of society.

Several issues emerge from examination of the role of digital technologies within rural change processes. These have to do with responsibility, individual freedom, cooperation, conflict resolution, risk management, mobility, collective memory, social fragmentation and cultural identity, and have both temporal and spatial dimensions. In particular, community perceptions of the past, present and future of rural places are prefigured in relationships of time and space; the very elements that are being radically changed by digital technologies. Perceptions impact on decision-making in everyday life (as consumers, for example) and extend into longer-term matters of active and responsible citizenship. All these contribute to changes taking place in conditions for learning for community engagement.

One important question is whether ICTs are delivering the main policy outcomes most academic theory and popular assumption suggests. Policies for sustainability, regional innovation and citizenship all seek to promote capacity building in personal and social development, especially in learning to cope with change. Exploring whether such capacity is being enhanced as the deployment of digital technologies accelerates will provide an insight into the potential, longer-term impact of ICTs in shaping decision-making about rural futures.

The capacity of communities - urban and rural alike - for effective decision-making emerges from learning processes. Such capacity has two elements. Firstly, the individual competencies of knowledge, skills and appropriate values to make decisions about ends and the means by which to achieve them; and secondly, the collective conditions to support open, deliberative decision-making, including a culture of learning, are both essential. Learning to understand needs, challenges, options and solutions occurs not only through formal educational institutions but also informally within organisations (such as work and clubs) and especially through media and general social interaction. It is the means to communal control of change and is therefore integral to concepts of democracy and informed choice. In

sustainability policies it prefigures new understandings of the factors affecting the self, other people and ecosystems. Similarly, in the shift away from 'old' economic activities, learning to cope with new production and consumption processes requires competencies and conditions for innovative thinking, designing and creativity.

To cope with the acceleration of change, three related capacities are required at the community level. The first is visioning - the articulation of the outcomes sought. The second is a will and capacity to engage. The third is a capacity to deploy learning outcomes in such a way that people are moved from thought to action. Although these elements are implicit in policies and theories advocating transformation of society, it is difficult to locate examples of national strategies that build community capacity in all three processes (for further discussion see 2.6.1).

Learning seeks the realisation of both the individual's aspirational goals and society's collective potential. Indicators for such end goals can be found in the quality of life index developed by United Nations Development Program (UNDP, 2008) which also provides factors to use in analysing the role of ICTs. A community's capacity to engage with new developments in social and individual learning can be assessed via analysis of the following factors:

- needs as ends: economic, social and ecological;
- freedom: destiny, diversity, visions;
- locus of control: security, trust;
- means: technology, continuous improvement;
- capitals: human, social, cultural, political, financial and natural (assets and advantages);
- community: real and virtual, networks, roles, rights and responsibilities;
- place: public and private space, uses, identity, landscape;
- innovation: purpose of change, creativity;
- risk: precautionary principle, cost-benefit assessment, consequences; and
- informed decision-making: attitudes and actions.

All of these factors will need to be addressed in order to understand the situation facing rural communities.

Finally, linear phases of effective decision-making at the community level are considered. These are:

- inputs of information (and its conversion to instrumental and conceptual knowledge) and communication (including listening, feedback and dialogue);
- processes of visioning, learning and decision-making itself (e.g. risk, cost-benefits calculations);
- outputs of motivation, abilities and opportunities to act (these are grouped into collective competencies [knowledge, skills and values] and supportive conditions, including the level of capitals, such as learning culture); and
- outcomes related to needs and preferred futures (including locus of control, destiny determination, ownership of change, and effective monitoring, evaluation and negotiation of means to ensure ends).

### 1.4 Digital technologies and capacity building in rural communities

Policies at all levels reflect the general optimism that digital technologies will deliver a positive transformation of society. The 'eNorway Action Plan' (MTI, 2000) and 'Australia's Digital economy: Future Directions' (DBCDE, 2009) are examples. Attention is on opportunities for e-learning, e-business and e-government with minimal reference to new risks and problems for individuals, organisations and communities to resolve. Policy research into ICT based education reform often reinforces the push to develop human capital for global competitiveness. In some cases, the 'modernisation' of agricultural regions envisages new competencies for tourism marketing and the 'creation of digital entertainment content' (Kozma, 2005).

ICTs are central to the drive for economic restructure and innovation in rural communities. Theorists and policy makers assume a constructive role for digital technologies in building community capacity for the self-determination of future places, especially in marginalised areas. Policy agendas overstate the 'imperative to connect' as they reflect the public discourse of enthusiasm for benefits of being 'empowered in the new digital age', even though such debates 'have largely taken place in the abstract and have not been grounded and connected to the needs of the residents of "real world", physically based localities' (Evans, 2004: 174). Information, communication and learning are pivotal to the competencies and

conditions that support democratic ownership of change. Yet there is an evident dearth of critical assessment of the impacts of digital technologies in shaping the ends and means of rural futures – in particular, how digital technologies may be shaping perceptions and practices of collective responsibility for the future of rural places. Karen Evans' research suggests that a lack of 'critical engagement' about possible negative impacts of ICTS on place-based communities may further marginalise rather than develop them as expected (2004).

ICT related research has hitherto focused mainly on the micro level (individual or small group use and adaption) or at the macro level (national strategies and programmes). This study specifically addresses the meso level of the community. It also deploys 'community' as more closely aligned with physical location, reflecting its focus on rural as opposed to urban populations. Although sub-categories of 'communities of interest' and 'virtual communities' are acknowledged, the *in situ* networks based on shared experiences, local knowledge and identity with place, are of foremost interest. It is how these elements of 'community' may be transformed by ICTs that requires exploration.

The rapid pace of rural change is linked to assumptions about the role of digital technologies in delivering sustainable futures. An implicit assumption is discernible that these technologies are enabling greater freedom and control over time and space, and therefore profoundly changing human relationships with 'place'. There is also tacit belief in the mediation potential of ICTs to improve access to relevant information and communication, thereby improving the quality of visioning, learning and decision-making processes.

These assumptions inform policies for sustainability, rural innovation and democratic citizenship. They are rarely challenged in literature or public debate, and for most part, especially in Australia, remain to be critically analysed. There is not thought to be any need to apply a risk assessment approach to the introduction of these new technologies. Benefits will far outweigh the costs, it is assumed, including any losses in how communities have traditionally envisaged their futures, learned about options and made decisions about their places. The potential for the means to become ends in themselves is also rarely considered. But the question needs to be asked: are such assumptions correct? Are ICTs supporting the processes of visioning, learning and decision-making in rural communities as expected?

The role of digital technologies in change processes within rural regions requires a framework within which complex interactions can be analysed. From everyday life to future goal-setting, the mediating role of digital technologies affects what and how knowledge and communications is made meaningful. However, opinions differ about whether there is a need to bolster the capacity of communities to manage the role of digital technologies in globally-driven change.

The study will explore whether rural communities actively respond to observed slippage in the achievement of their preferred outcomes and changes to the conditions that are intended to support such outcomes. It will ascertain the extent to which rural communities recognise a need to monitor and evaluate the emerging impacts of digital technologies. It will further examine why there may be low motivation to effectively manage ICTs so that the technologies better serve defined community goals. How this challenge differs from other historical and current pressures to accept or reject technological innovations will be considered. The role of key actors and gatekeepers who facilitate the conditions for learning and informed decision-making will also be discussed.

In a complex situation of rapid change, rural communities need mechanisms to better understand the elements of change, including the effects of new technologies. This challenge to strengthen human agency will only intensify as digital technologies converge into more mobile and interactive devices with unprecedented power to mediate relationships with place. Yet there seems to be little recognition of the 'problem' itself. Not only does the highly abstract and undefined vision of 'the digital future' lack indicators to assess its expected outcomes but an underlining assumption is that these technologies are basically 'benign or neutral' in terms of significant 'unforeseen consequences'. On the surface, it appears that such a premise is potentially contradictory to the acclaimed power of digital technologies to transform 'life as we know it'. The study seeks, then, to investigate the degree of current uncertainty regarding the role of ICTs, why this has implications for rural futures and how it may be resolved.

These issues resolve into a single overriding question: Is there any need for rural communities to monitor and evaluate the role of digital technologies in building their competencies and conditions for a self-determined future?

## 1.5 Approach

A study of the increasing pervasiveness of ICT in decision-making, learning and visioning processes at the regional level is clearly sociological in nature as it will cover issues related to responsibility, identity, equity, risk, trust, cooperation, conflict management and ownership of change. Although the problem under investigation is social in nature rather than technical, the complexities of relationships could be described as 'socio-technological' and linked to cultural and political studies. There is also the need to relate to science, including ecology, natural resources management, agriculture and economics.

With the focus on social processes of communication and knowledge generation, combined with the cross-cultural context of the study, qualitative methods are most appropriate (Ragin, 1994). Difficulties in obtaining a sufficiently large sample of detailed responses in Norway, as well as language difficulties and logistics, made a quantitative approach impractical. An analytical induction approach is followed and contextualisation is emphasised in the phase of interpretation (Denzin and Lincoln, 2005).

The empirical component of the research draws on various sources, primarily perspectives gained in interviews with key actors in two similar rural regions, one in Norway, the other in Tasmania (Australia). Factors identified at the macro level are related to findings from the two case studies with focus upon the perceptions of actors involved in community learning processes.

The project deploys various elements of qualitative, case study and grounded theory. For example, two separate stages of data collection in both regions provided the opportunity to refine the interaction between the categories, following the injunctions of Strauss and Corbin (1998). A second, more focussed review of literature was undertaken once the critical issues and factors had been grounded in the empirical data.

## 1.6 Interview design

Objectives, selection criteria, data collection, verification methods, question structures and a protocol were designed to guide the process. The latter includes

consideration of ethical issues and the cultural customs of Norwegians, as well as confidentiality assurances. In accordance with university ethical standards, the transcribed tapes were supplied to all respondents for confirmation or modification.

A qualitative survey, designed to be a semi-structured questionnaire for use in face-to-face interviews only, was developed. Open-ended questions took respondents from perceptions of community needs and aspirations, through to change processes, and on to issues of concern of the respondents' own choosing. Questions pertaining to technologies were not raised until the final few questions. This allowed specific issues and related factors to be raised by the respondents themselves before any link had been made between social change and the influence of digital technologies.

Fieldwork data collection involved: (a) observations in real context (field notes, events and actor interactions); (b) document analysis (including content analysis and coding) and, (c) semi-structured and open-ended qualitative interviews with key actors. All interviews were taped and transcribed.

Whilst the interview deployed open-ended questions to allow issues and factors to emerge, at the verification stage a small number of propositions (re situation, causes, solutions and possible models) were offered to seek a more focussed response to certain elements deemed critical to the study. This provided more empirical data for analysis. In accordance with university ethical standards, the transcribed tapes were supplied to all respondents for confirmation or modification.

### 1.7 Case selection and interviewees

Two case studies were undertaken within small nations located in relatively isolated corners of the developed world. The Huon region of the Australian island of Tasmania and the Sogn and Fjordane region of western Norway were chosen for their similar demographics and natural resources-based economies. Until recently, both regions have been relatively isolated from urban centres and have formed distinctive identities. There is now a growing influx of new settlers and an outflow of younger age groups. These communities also face increasing challenges to the future of their agricultural bases. Norway's 2-3 year advancement over Tasmania in the extent of access to and use of digital technologies provides a useful assessment of the impact of digital technologies within rural regions. With rapid acceleration of technological

features, impacts are only now emerging and the insights from Norwegian experiences may indicate trends not yet apparent in Tasmania or Australia as a whole.

The respondents, 30 in total, provided personal perceptions of their community acquired through their involvement in organisations dealing with regional information, communication and learning. Most were long-term residents of their regions and they collectively represent a broad range of economic or educational sectors, particularly agriculture. Subjects from business, government and NGO organisations were also included. The analysis is of the perceptions and experiences of respondents as members of their communities, rather than as representatives of their organisation or sectoral group.

### 1.8 Time periods and grounded theory approach

The research does not rely upon a single theoretical paradigm, although some aspects are of a constructivist nature, as used in grounded theory and pattern theories (Denzin and Lincoln, 2005).

Grounded theory allowed for multiple stages of data collection and a constant refinement and interaction between the categories (Strauss and Corbin, 1998). While it is important to delineate the central research problem, this has to be kept flexible so as to allow new and unanticipated angles to emerge. A problem and its related issues were treated as starting points rather than a set of clear questions. These evolved as data from the 'reality' of the respondents were introduced, becoming part of an increasingly rich and complex information set. The interviews in both study sites were done in two phases, allowing analysis of the first half of each region before completing the entire survey.

The dynamic nature of the research allowed new concepts and theoretical ideas to emerge during the research process. The evidence defied attempts to organise it for a perfect theoretical fit, indicating that further research into some of the specific problems identified is needed. Never the less, the problems faced by rural communities in a digital, technology-rich world are elucidated, and strategies for anticipating desired outcomes are noted.

## 1.9 Triangulation and macro-level evidence

Triangulation, which converges a mix of different types of data, assists in ensuring a comprehensive analysis of the research problem and verification of the validity of findings (Creswell, 2003). It is achieved here by using a mix of elements from case study design, qualitative empirical research and grounded theory.

Data from in-depth interviews have been supplemented by information from other sources (such as observation, media reports and statistics) to build an accurate contextual picture. The international aspect of the research made establishing full context essential, and findings from other, similar studies have been integrated in the analysis to situate this project within a larger, even a global, context.

Literature, research and document analysis involved examining the prerequisites, expected outcomes and assumptions within both theory and policy applications, including sustainability and learning economy/regional innovation systems. These sources of data helped inform the questions for the micro-level research.

The empirical data obtained at the regional case level were then verified with as wide a range of factors as possible. These included wider national observations, documents and statistical data (including on participation in different social-political events, organisations, decision-making and uptake and usage of ICT.

Placing the actors in wider contexts and using multiple levels of analysis helped build up patterns and a broader picture. This was important in the third and final stage of returning to the assumptions that underwrite theories and policies. The resulting comparison with the relationships identified at micro level cases enabled an evaluation of the soundness of these assumptions. For example, the relationships between regional innovation strategies and macro-global level pressures, such as free market trade policies in agriculture and telecommunications, imply benefits to engagement. The research undertaken yields evidence that enables an assessment to be made of the validity of the implied link.

The cases are not intended to be truly comparative. However, similarities and differences between the two regions, and within actor groups, help explain the degree of importance of various factors. In explaining how these factors interact in each

case, and within their wider context, the relevance of the findings beyond their Australian and Norwegian contexts can be suggested.

A set of indicators has been formed to evaluate the implications of a low level of informed decision-making about the role of ICTs for community engagement. The focus is on the optimal competencies and conditions required, and the indicators can serve as tools for assessing the key policies for sustainability, regional innovation and engaged citizenship. They relate to outcomes (goals achieved, problem resolution), risk indicators (likelihood of consequences) and strategies (appropriateness of actions to meet intended goals, including core knowledge, skills and values). They can be used by communities for cost-benefit analysis and management of use and content of digital technologies.

Indicators also relate to the contributions that information and communication can make to the capitals underpinning rural community goals; the attributes of confidence and caring, encouragement and communality, creativity and freedom, and courage and 'visionariness' (or farsightedness) (Himanen, 2005). Findings are then placed within the context of the work of other researchers.

### 1.10 The scope of the study

Theoretical applications are limited to assumptions of relevance to the development of strategic policies and community empowerment. Thus, theoretical discourse pertaining to ICTs is restricted to its relevance for policies of sustainability, regional innovation (learning economy) and democratic regional development (engaged citizenship) rather than technology, infrastructure, access, design, formal education, usage or networking aspects.

In the case of learning, the focus is on the inputs of information and communication, the basic process itself, and the outputs of knowledge, skills and values (not curricula, training or behaviour). Theories of community dynamics are confined to rural communities at a regional level (not national, organisational or household levels). In the field of visioning and decision-making – to the extent that these processes relate to learning and informed choice of ends and means (not governance, or official policy development and activity), citizenship theory is confined to responsibility, identity and consumerism (not democratic institutions, rights or

political activism). Finally, cultural theory is relevant only to the extent that it has to do with identity, diversity, heritage and traditional norms (not arts, language or inter-cultural relations).

The extent to which generalisations are possible from this research is limited by several factors. The study ranges broadly, but is not exhaustive. Boundaries must be drawn in the interest of research manageability, and some related issues have regrettably been deemed to fall outside the bounds of the study. Thus, measurement of competency levels (knowledge, skills and values) held by individuals or organisations in communities have not been undertaken – nor has analysis of the differences between traditional or tacit knowledge and newer 'e-based' learning inputs and outputs.

The thesis also does not set out to be a fully comparative case study. Only two cases are included and there is no comprehensive analysis of their historical, cultural or political characteristics. While not intending to make a detailed comparison of Tasmania and Norway, some basic comparative data are provided to highlight the relevance to Australian circumstances.

The research involves limited historical analysis, so it cannot be considered a 'historical study' of changes. Nor does the study monitor specific changes within individuals, organisations or nations. Attention falls upon trends at the meso level of 'community' but within the context of macro, global changes. The perceptual timescales of the respondents in the cases are mainly limited to the last 5 - 10 years, to correspond with the advent of digital technologies. However, more recent observations and also longer, inter-generational time periods are occasionally noted.

Finally, while it addresses many issues related to formal education, especially those pertinent to youth, citizenship and consumer education, the thesis does not provide detailed and specific curriculum or pedagogical recommendations. However, the central findings are made relevant to education and training within a discussion of possible solutions to emerging challenges.

### 1.11 Structure of the thesis

The thesis consists of seven chapters within three parts:

- what expectations are held of theories, policies and rural communities (cases);
- what is the status of changes, trends and issues raised; and
- what are the risks, opportunities and solutions?

Within part one, chapter two reviews the literature review pertaining to the role of digital technologies in the emerging theme of responsibility for future of place. Relevant issues, concepts and variables are outlined, including the assumed processes and inputs and outcomes from learning and decision-making.

In chapter three the argument for focussing on rural regions in relation to the role of ICTs is presented. The context specific to the case studies in Tasmania and Norway is outlined, and historical and current challenges involving change processes in rural regions are discussed.

In part two, the results of the empirical data from respondents in Tasmania and Norway, are presented simultaneously. Chapter four identifies the common needs and end purposes sought by communities, described in terms of economic, ecological and social outcomes. These are compared to perceptions of the current situation in rural communities regarding change trends. Factors affecting community capacity to identify and manage external influences are described. Chapter five examines the extent of informed decision-making about ICTs in relation to community needs and concerns.

In part three, empirical findings at the micro level are placed within the context of public discourse and broader macro level research. Chapter six identifies deficiencies that merit closer examination. These focus on the weaknesses of assumptions held by both rural communities and policy makers.

In the context of a second literature review, chapter seven critically re-examines the assumptions in theories and policies that may require reconsideration in light of the findings. The risks and implications of changing capacity for responsibility for the future of rural places, is discussed. This chapter also discusses how to improve the conditions for community capacity-building, summarises the findings and posits questions for future research to address.

# CHAPTER 2: THEORIES AND POLICIES

## 2.1 Introduction

In seeking to gain new insights into the impact that digital technologies exert upon community capacity to determine sustainable futures, it is important to understand the pressures for change, the policies that respond to these pressures and the theories that underpin the polices. This chapter looks at how new visions of the future have emerged and are based around the ideas of sustainability, knowledge society and innovation, and strengthened democratic citizenship. A critical analysis of assumptions within these policy areas about the role of ICTs in the processes of visioning, learning and decision-making is undertaken. It reviews ideas about how these interconnected processes strengthen citizenship engagement and ownership of change generally.

The research involves issues to do with individual and collective behaviour, democracy, cultural specifics and many other aspects that should be viewed from different perspectives. By the nature of the inquiry into change processes, the study requires it to be inter-disciplinary, and it draws on insights taken from psychology, sociology, anthropology, philosophy, economics, marketing, human geography, technology, communication and media, learning and education, innovation, governance and marketing. Policy makers and communities themselves need to integrate knowledge from all these dimensions in order to make informed decisions.

While an exhaustive review of the literature on dominant theoretical contributions is not intended, the task of positioning the empirical work of the research in context of theory is essential. The approach taken is to identify the most relevant practice of theory in policies intended to resolve the pressures of change being placed on communities. Three sets of ideas and concepts therefore frame the investigation, centring upon the policies of sustainability, knowledge society-innovative regions, and democratic citizenship.

This chapter looks at ideas concerning the role of information and communication as inputs to processes of visioning, learning and decision-making; the processes that

convert inputs of information and communication into expected outputs and outcomes of policies and of community actions.

A set of outputs that describe the prerequisites of community capacity for responsible decision-making about the future of rural places is identified, discussed and summarised. (The specifically rural implications of this discussion are highlighted in chapter three. In chapter seven, following consideration of empirical data from the cases, the discussion focuses upon more specific ideas and issues in current research. The framework established in this chapter will help in that task.) Assumptions that underpin the policies about how digital technologies support the outcomes of sustainability, 'knowledge society' and democratic citizenship are identified.

## 2.2 Challenge of change

### 2.2.1 Globalism, time and space

The overarching phenomenon concerning change at the community level is globalisation. Its effect on the quality of cultural and social life continues to be viewed both optimistically and pessimistically. Generally, those who see globalisation as positively moving towards a homogenised culture regard it as democratised, open and equitable, allowing people to create access and share information universally. By contrast, others see cultural diversity and public dialogue collapsing as the commercialisation of 'the medium' focuses on the 'message' of consumerism. The division could be described along lines of fragmentation and standardisation, with visions of the emerging future ranging from 'liquid modernity' (Bauman, 2002b) to global development (Negroponte, 1995).

Under globalisation, the political and economic sovereignty of the nation-state is rapidly shifting to supra governmental bodies and transnational corporations. The business vision for 'an inclusive and life-enhancing global market system' aims to provide wealth creation through the market system 'underpinned by democracy and informed societal values, decentralised to tap the creative dynamism of free enterprise', competition, innovation and choice, because 'in a transparent and democratic society consumers are empowered with the freedom to choose and achieve quality of life' (WBCSD, 2001:7). These are key themes in many policy frameworks considered in this chapter.

Identity, community and culture are no longer influenced as much by the nation-state. Culture has been loosened from physical place due in part to digital technologies and the transfer of mass cultural products, especially those emanating from countries that are dominant within the global entertainment market (Barney, 2004). Concerns that the virtual world creates a global homogenisation of cultural and economic relationships adds to tension between globalism and localism in many public discourses (James, 2005). It is beyond the scope of this study to enter into the wide theoretical debate over globalisation and its impact on culture and social structure (see Webster, 2004; Undheim, 2002; Almas and Lawrence, 2002; Beck, 2000; Carnoy, 1999; Giddens, 1998 and Bourdieu, 1984), but it is important to note that both globalisation (as a process extending across 'world space and world time') and globalism (the dominant ideology accelerating influence over the world) are historical phenomena and not simply a recent consequence of modernity. However, as Castells (1996), Bauman (1998) and Wellman (2001) have highlighted, the global economic links between communities of practice and cyberspace now exercise an accelerating influence upon all fundamental relationships in and between physical places. The concept of time is central to change and continuity. As Adams has written: 'time is both destiny and a necessity for all human societies' (1990:9), yet most people, including social scientists, tend to take it for granted. In order to understand today's reality, the 'assumed and imposed simplicity' of the concept of time 'is no longer a valid approach' (1990:3). The value of time itself changes, especially in relation to technological shapings of the future.

### 2.2.2 Capacity to decide the future

The vision of an abstract and undefined 'digital future' requires closer consideration than is afforded in the most prominent policy and media narratives. The capacity of humans to envisage and then pursue an imagined future is a hallmark of our species. Destiny is in our hands: 'to seek control over the conditions of existence seems to be integral to human life generally' (Adams, 1990:125). Yet when it comes to options for preferred futures, perhaps we should ask if the future is already determined and whether people can really decide long term in any meaningful sense. Who is responsible for the future?, Adams asks, particularly as today's secular societies assume that they own the future: 'the future, we say, is ours to take and shape. We treat it as a resource for our own use in the present...As makers of the future we become responsible for the outcomes of our future-creating action' (2006:4).

Policy visions such as sustainability and the knowledge society are only possible and preferred futures. They will contradict each other because today, as we 'pursue progress and innovation rather than stability and permanence, the past contains only very limited knowledge (in the sense of information, not in the sense of wisdom) about the future' (Adams, 2006:5). As there is no certainty about the outcomes of 'future creating actions', questions of values, morals and ethics become an increasingly important aspect of responsible decision making by citizens.

Temporal and spatial differences between how different groups hold expectations of the future also influence their views of technologies. Often exaggerated benefits and risks are involved in technological innovation and more attention is needed to understand the relationships between new hopes and emerging disappointments: 'we need to reflect upon the actual contexts and conditions in which expectations, hype and future imaginings are embedded' (Brown, 2003:10).

The question of control over technology has been extensively debated by scholars for decades. Some argue that the values of technologically-driven efficiency, complexity and change need to be challenged, especially when these values are identified as major social change agents. Technology drove urbanisation in the industrial era, and today: 'with information technology, we move more again from the cities to the net. Do we have to go where the technology is taking us?' (Dahlbom, 1997:19).

As early as 1970, Alvin Toffler made it clear in his provocative Future Shock, that the accelerating thrust of change in high-technology societies required a 'breathtaking affirmation of popular democracy...a public self-examination aimed at broadening and defining in social, as well as merely economic, terms, the goals of 'progress'. On the edge of a new millennium, on the brink of a new stage of human development, we are racing blindly into the future. But where do we want to go?' (1970: 422-423). Knowing where to go, then, is as important as being able to cope and adapt to change. Toffler's approach to rapid change used 'hard data' and, where unavailable, he had recourse to the anecdotes, impressions and opinions of others, because, he argued: 'the inability to speak with precision and certainty about the future, however, is no excuse for silence'. He added that his contribution was not intended as a final word 'but as a first approximation of the new realities, filled with danger and promise...' (1970:7).

### 2.2.3 Visioning preferred ends, deciding the means

Capacity for visioning is fundamental to all human activities, for goal setting at the individual, organisational and community level. 'Mission statements' and 'vision' documents help organisations chart their path through change; as the vast number of personal development authors remind us, no individual can gain success without first envisioning it. Imagining the future is a key step if humans are to fulfil their unique capacity to shape their destinies. Visions serve to guide thinking, action and evaluation and as such require competencies and conditions to do so.

A vision is different to a purpose, which is an abstract or general direction. A vision is measurable: 'a specific destination, a picture of a desired future' (Senge, 1990:149). A recent trend by policy makers to set targetless 'aspirational goals' rather than visions would appear to confirm this view. Visions are often confused with the competitive desire to 'beat' others and although competition motivates, a vision is multifaceted and 'is something you desire for its intrinsic value, not because of where it stands you in relation to another'. At an individual level, personal development becomes 'a process of continually focussing and refocusing on what one truly wants, on one's visions' (Senge, 1990:149).

In relation to a desired future, visioning has more in common with foresight than prediction. The foresight process more fully understands the forces shaping the longer-term future and provides monitoring clues and indicators as trends evolve. Such analysis is not 'forecasting' as it is not 'predicting' the future but rather helps people create their preferred futures. The level of consciousness and articulation of longer-term shared visions in a community can act as an indicator of the success of policy frameworks under discussion in this chapter. It is of course closely related to the effectiveness of democracy and citizenship that is implied in all theoretical and policy approaches.

In 1938, Aldous Huxley, in his Ends and Means, wrote about the use of technology to assist the propaganda of 'political and economic dictators' to achieve the aim of 'the eradication of charitable feelings and behaviour in the sphere of international politics' (7). Believing that real progress is defined by charity towards others, Huxley despaired that 'even highly intelligent people can deceive themselves' in a 'desire to believe there is a short cut to Utopia...We insist that ends which we believe to be good can justify means which we know quite certainly to be abominable; we go on

believing, against all evidence, that these bad means can achieve the good ends we desire' (1938:25-26). The suppression of diverse pathways to achieve common outcomes of freedom, security and other universal developments continues today, as does the denial of knowledge that would question the means deployed. Not only do people need to be capable of creating and owning shared visions, but also the means to those ends. This assumes the capacity of individuals to make informed decisions about their personal needs in relation to broader collective visions and the best options to meet them. In this era of rapid change, it is a complex challenge.

Decision-making involves the need for both information and communication, but the role of technology in assisting people to meet their needs remains contested. Social studies of science and technology have explored the relationships between technological 'artefacts' and social strategies that focus on the capacity of people to 'domesticate' the tools to serve their chosen ends (Latour, 1993; Lie and Sorensen, 1996). The consumption of digital technologies in a private space, for example, allows them to be adapted, morally sanctioned and controlled (Silverstone, Hirsch and Morley, 1992). This optimistic position assumes much about the competency of people to manage and negotiate technology in order that they might assess whether their real needs are being satisfied.

According to Langdon Winner, once humans adopt specific technology to achieve certain needs, then 'necessity' and 'desire' also become specific: 'if one begins with the supposition that the human being has a part of its basic character a general unformed set of urges, then the technological determinism of need becomes a powerful hypothesis' (1997:84). He uses the examples of the need for physical mobility developing as a need for private cars and the mobile phone innovation as a variation of the human need to communicate. The latter could also be an example of marketing assisting the generation of an entirely new 'need'; that of humans seeking access to entertainment, 'anywhere, anytime'. Winner argues that while technologies do have complex relationships with human needs, it is the extent to which people can freely choose whether innovative products will meet their own developmental needs that is the issue. Deeper sceptics of the role of technology in progressing quality of life include Braun, who suggests that while technology drives innovations (such as entertainment products), it primarily serves the production market rather than human needs (1995:54).

Central to the issue of whether technology can be adapted to serve human needs or end goals, is the issue of 'techno determinism' or the extent to which technological innovations are inevitable drivers of social change, including society's structures and processes (such as learning). A 'deterministic science' approach to events, a belief in 'natural laws' and 'historical materialism' have strongly influenced opinions about relationships between technology, everyday life and democracy. The view that technology develops according to its own logic (or technical rationality) has been a recurrent theme in the work of Toffler (1980) and Ellul (1964), for example, and is evident in many policy positions, including planning for the 'digital future'. Bell (1973) and Tofler (1980) all suggested the inevitable transformation of society. The virtual 'utopian' view of Negroponte (1995) and the constantly innovating world of Leadbeater (1999) also implied that social change is the only feasible response to technological change.

To counter quasi-deterministic views of technology, a more social constructivist approach has evolved since the 1980s. The 'problematic technological realm' of constant change in everyday life needs to be 'naturalized and domesticated so as to make it less threatening and more manageable' (Morley, 2006:31). In a 'voluntary' view of change, marketing helps embed technology with social development, thereby making 'the technofuture safe by incorporating it into familiar formats, icons and symbols' such as family viewing of home entertainment systems (2006:32). An alternative view sees 'an explosive proliferation in home entertainment devices' as a contributor to declining involvement in public spaces and in the mediating institutions that encourage active democracy (Sclove, 1997:241). However, 'crude technological determinism' has been absorbed into popular views of the impacts of ICTs through pervasive marketing rhetoric that ignores the need for user education (Evans, 2004:10). Whether communities are capable of understanding, and possibly mitigating, any unforseen consequences of technology, is a question that relates very much to the complex issue of democratic empowerment. In considering this, it will be important to avoid the 'aura of negativity' that surrounds much of the debate about the relationship between technology and society (Winner, 1997:96), while still critically analysing the excessive optimism prevailing in many public polices about visions of 'the digital future'.

## 2.3 Freedom, choice and citizenship

### 2.3.1 Democracy and security

Informed decision-making about the transformation to sustainability and regional innovation mandates individual and collective control over the destiny of the place in which people choose to live. Considerable policy efforts are directed at generating ownership of change, including innovation, through improving decentralisation of governance, such as regional bodies. Attention is given to ensuring the roles, rights and responsibilities of individuals are protected while maintaining collective cooperation through a functioning democracy. But there may be excessive emphasis in many policies (and the liberal theories behind them), to individual rights. As the OECD has noted: 'acting autonomously does not mean functioning in social isolation. On the contrary, it requires an awareness of one's environment, of social dynamics and of the roles one plays and wants to play. It requires individuals to be empowered to manage their lives in meaningful and responsible ways by exercising control over their living and working conditions' (2005:4).

In this context of balancing work and life, people's relationships with both social and natural environment are similar and raise the question of values. Immanuel Kant said: 'so act as to treat humanity, whether in your own person or in that of any other, always at the same time as an end, and never merely as a means' (cited in Gregor, 1997). The capacity for people to understand and accept that others have a right to satisfy basic needs is at the heart of sustainability and democratic polices, both of which aim at achieving freedom in peaceful, shared 'common futures'.

Formal education and cultural socialisation may be a problem, however. Regarding sustainability efforts, the emphasis in global policy regimes on defining responsible environmental behaviour in individualistic terms, has limited learning outcomes. By ignoring collective actions, 'many types of decisions and actions to live sustainably' are ignored. Behaviouristic teaching methods 'may lead to compliance in the short tem, but do not create the social analysis and critical thinking skills needed'. Education for 'political literacy, for active and informed citizenship' is required (Fein, 1997:25).

Governments in many countries are now making the question of citizenship an explicit part of formal education, as 'civics' or citizenship education is emerging as

an answer to challenges of changes in community values, cultures, globalisation and school curriculum. In the UK, the recent approach has been to foster 'civic morality' based on recognition by individuals that they share responsibilities with the state. This was a 'third way' between the extremes of individualism and 'communitarism' (Giddens, 1998). The attempt to balance the role of the state with that of the free market relies upon the development of competencies and also supportive conditions for civic responsibility. Effective learning for citizenship is a challenge in itself, as these policy outcomes for youth education from the UK imply: 'self-confidence and socially and morally responsible behaviour; becoming helpfully involved in the life and concerns of their communities; and making themselves effective in public life through knowledge, skills and values' (Kerr, 2000:8).

These policies are based on the expectation that individual citizens will act rationally. It is also widely assumed that as consumers, individuals will use information to make judgements and change behaviour accordingly. However, the characteristics of accelerating change include information and decision making overload, as consumers try to negotiate an ever-widening global market. Greater freedom of choice creates new demands on the capacity of consumers to make everyday decisions. A tension between freedom and security arises if confidence in such capacity wanes.

### 2.3.2 Democracy and digital technologies

Information and communication technologies are generally perceived to be tools for enhancing democracy. In addition to facilitating more informed decision-making and better balance between work-home pressures (due to timesaving and communication aspects), their main contributions can be summarised to include the following outputs: wider engagement in the public arena by active citizens, an improved sense of freedom (including confidence to develop competencies, imagination and ideas for an improved future), wider and deeper community connectedness (including shared cooperation, understanding and identity), and more diverse and creative solutions to community needs (including innovations).

There is a subsequent widespread view that ICTs can help make governments at all levels more transparent and democratically accountable. In particular, technology-mediated processes that allow for more open interaction can potentially improve the quality of decision-making. Yet such processes could potentially 're-engineer representative democracy' into 'collaborative direct democracy', and thus they entail

'new risks with profound consequences' (Millard, 2005); these issues will be elaborated in Chapter 7). Associated issues of governance are not simply questions of policies failing to deliver equity access. Complex issues such as personal identity security, ethics (for example, privacy) and the generation of sustained responsibility across business, community and individuals, are testing the capacity of governments to 'keep up' with technological developments.

Many post-modern theorists believe that ICT-driven changes presage radical changes in the way society operates. 'Network technology' appears to support the current narrative of 'irresistible change'. These technologies reinforce 'the valorization of change over endurance – in particular, change that is deemed progressive – is a hallmark of modern politics' (Barney 2000: 18). One result is that democracy itself is featured prominently in public discourse 'that names not only the essential characteristics of this technology, but also the wider societal changes it promises to precipitate' (Barney 2000:20). Barney offers the following definition of democracy: 'a form of government in which citizens enjoy an equal ability to participate meaningfully in the decisions that closely affect their common lives in communities.' (2000: 23). This requires broader policy attention than a focus on the ICT supply side (such as opportunity equality to tackle the 'digital divide') or on individual freedoms over collective, shared responsibility.

The relationship between democracy and technology has occupied the minds of political philosophers from Plato and Aristotle to Heidegger (Barney, 2000). Aristotle believed that technologies (*technai*) are techniques for rational means to good ends. As such they are 'subject to the sovereignty of political deliberation about the goodness of their ends and their integrity, as means to these ends' (Barney, 2000:237). The importance of both public and private space for functioning democracy is often overlooked. Public spaces allow democratic attitudes and actions to be developed, while private spaces foster the initial confidence in the freedom to make decisions, form identity and exercise responsibility. However, ICTs are accelerating the blurring of the boundaries between the two with the consequence of 'replacing citizens with consumers, activism with passivity, and knowledge with information' (Behuniak and Freie, 2006). This research theme will be explored after the case study findings have been analysed.

## 2.4 Human needs and development

### 2.4.1 Needs as motivators

As discussed previously, in relation to the role of technology, the concept of human need has various meanings including the notion of necessity for survival and the 'desire' for satisfaction (Winner, 1997:84). Any consideration of the capacity of communities to make informed decisions about change processes requires close attention to what motivates human behaviour. Although psychological theories focus on individual thinking and acting, they also acknowledge the influence of external stimuli. 'Human needs' is a normative concept influenced by social and cultural context, including lifestyle expectations and values gained through socialisation processes. How people are motivated to satisfy particular needs, at different times and in particular situations, was explained by Abraham Maslow (1954) in his triangular 'hierarchy of needs' theory. Maslow argued that realising individual potential also required the development of society itself, in order to protect this system of needs. Thus, while needs guide individual behaviour they are also relevant to collective decision-making for society as a whole. In this way they can be seen as possible indicators of effective progress of 'means to ends' for both human and social development.

The Chilean economist Manfred Max-Neef's theory of fundamental human needs (1992) reinforces the role that collective needs have in motivating individuals. However, beyond the need for subsistence, he believes (unlike Maslow), there is no other hierarchal aspect to the system of interrelated and interactive needs. The needs Max-Neef identified are:

- subsistence (water, food, shelter);
- protection (security);
- affection;
- understanding (education);
- participation;
- leisure;
- creation;
- identity (meaning); and
- freedom (self-determination).

Needs are satisfied within the three contexts of the self, others (social groups) and the environment. Max-Neef argues that the same fundamental needs exist universally but will change over time as cultures determine the 'satisfiers' of those needs. He makes a clear distinction between satisfiers (for example, values and norms or political stability) and economic goods. The latter are 'the means or material manifestation' and not ends in themselves. Satisfiers on the other hand are forms of being, having, doing and interacting (for example, investigation is a satisfier of the need for understanding). Max-Neef suggests that such a perspective also allows the narrow economic concept of poverty to been seen in a new light: '...any human need that is not adequately satisfied, reveals a human poverty...much more than that, each poverty generates pathologies' (1992: 200).

Critically, Max-Neef notes that 'what is culturally determined are not the fundamental human needs, but the satisfiers for those needs. Cultural change is, among other things, the consequence of dropping traditional satisfiers for the purpose of adopting new or different ones' (1992: 200).

The discussion of needs and 'wants' as motivators is fundamental. Other economists have expressed concern that traditional neoclassical economic theories view human desires and wants as unlimited. J.K. Galbraith warned of exploiting psychological needs to create insatiable desires in order to drive economic growth and quoted Adam Smith from his *Wealth of Nations,* observing that 'nothing is more useful than water; but it will purchase scarce anything', Galbraith highlights a long-standing and basic idea within economic theories: '...to divorce economics from any judgement on the goods with which it was concerned. Any notion of necessary versus unnecessary or important against unimportant goods was rigorously excluded...' (1958: 125-127).

As individuals decide which needs to satisfy, they receive external signals from others in society, especially from institutions. Such influence is particularly critical in decision-making about the consumption of goods. The process of consuming digital technologies (both the use and content) therefore provides a utilitarian function as well as satisfying social needs. Cultural theorists believe social relationships and norms give meaning to everyday choices (Bourdieu, 1984). For example, food choices can involve cultural sharing and status as much as meeting physical hunger needs, while the overconsumption of food products is more related to psychological needs triggered in part by external stimuli. Such needs indicate the complexity of the physical, mental, emotional and spiritual dimensions of human decision-making.

Choice also has a risk element, which is influenced by culture: 'risk taking and risk aversion, shared confidence and shared fears, are part of the dialogue on how to best to organise social organisations' (Douglas and Wildavsky, 1983:8).

### 2.4.2 Assets supporting needs

Supportive conditions for individuals to develop their full potential are dependent upon the dynamics of interaction between a number of systems, which themselves are under pressures of change. However, the ecological, economic, social, cultural and political systems have fundamental interests to maintain, or put another way, 'needs' of their own. The viability of each system requires satisfaction of a number of 'basic orientors' that are either environment determined or systems determined. These orientors are similar to the psychological human needs identified by Maslow and Max-Neef (IISD, 1999:35).

The physical environment-determined orientors that apply to all systems are:

- existence (sustain itself in a normal state);
- effectiveness (secure scarce resources and exert influence);
- freedom of action (ability to cope with variety);
- security (protect itself from variability in conditions);
- adaptability (learn to respond to challenges); and
- coexistence (modify behaviour to account for other systems).

The system-determined orientors that apply only to human systems and not ecological systems are:

- psychological needs, and, to a lesser extent; and
- reproduction and responsibility (IISD, 1999).

When combined with human needs, these system orientors can be considered the fundamentals that underpin the conditions for human and social development. Such needs as human security, identity and locus of control motivate individuals to a higher level of self-realisation, where, it could be argued, the potential of individuals to create and contribute to a culture, or 'civilization', are developed. The attainment

of 'cultures' of learning or democracy are examples. The systems are then maintained and further developed.

The social needs of a sense of belonging, recognition and identity, as well as more emotional needs for love and companionship, all involve trust. Individual self-interest is often best served by cooperating and sharing collective ends and means to achieve needs, and this requires supportive conditions within economic, social and other systems. Maintaining these supportive assets will also require consideration of shared responsibility as well as common understanding and an ability to think in terms of interconnected systems.

The economic concept of 'capitals' has been used widely to describe the assets, resources and supporting infrastructure within each system, such as 'social capital' of trust to support social cohesion and conflict management, and 'natural capital' of biological diversity to support food production. What is less often discussed is the common role of these assets in providing the conditions for human and social development, in particular for capacity building to engage in self-determination. There is little research into levels of community knowledge about how assets in systems work and interact to support individual attainment of needs.

A brief description of each system in terms of these assumed outputs is provided, beginning with the one that dominates thinking and acting in most societies; economic capital. The other system assets are natural, human, social, cultural and political. All the systems operate at different levels, from global to local, to the household scale.

*Financial*

Wealth, as measured by monetary, financially valued assets, is accumulated through the supply, demand and exchange of goods and services. The assets are assumed to facilitate needs, rather than to be ends in themselves. Engaging in economic activities, as a 'livelihood', should prevent or eliminate individual poverty, and provide other social needs, such as recognition and respect within society. Satisfaction of basic needs is measured in terms of 'standard of living' rather than outputs of 'quality of life'. There is constant tension between two essential elements of the system - cooperation and competition – often over scarce resources. But conflict resolution depends on other human assets, cultural and political, to ensure

balance between individual interests and such collective needs as the security, health and transport services essential for functioning economies. Conditions also need to support both short and longer-term capital accumulation for clear purposes.

*Natural*

Ecological systems and their regenerating services (including freshwater, fertile soils, healthy air and genetic diversity) meet the most basic of human needs and sustain all species on Earth. At a global level, favourable climatic conditions are vital, as are localised microbiotic conditions. Natural resources also underpin the opportunities for regional 'economic advantage', both in primary as well as innovative form. But natural assets go beyond being simply inputs or sinks for economic systems. Elements of the 'landscape' satisfy other human needs, directly and indirectly, including recreational, creativity and spiritual. These assets involve strong social, cultural and political relationships and meanings, such as 'home'. 'Nature' becomes a concept linked to the physical attributes of a 'place' with functions beyond appropriation for utilitarian economic purposes.

*Human*

The only accumulated assets intrinsic to individuals exist in the form of their knowledge, skills and values. These abilities also define the competencies to engage in continuous visioning, learning and decision-making in the pursuit of self-determination. The assets underpin motivation and abilities, including emotional intelligence and identity. Knowledge covers the diversity of traditional, local, tacit and also codified. Skills include communication, information processing, creative thinking and problem solving. Values cover attitudes and attributes of morality, reliability, patience, courage and empathy. The assets held by individuals, such as abilities of listening and articulation, form the sum of collective assets within social groups, organisations and communities. They are directly essential for economic assets and indirectly for all other systems. Human capital goes beyond economic performance to provide 'key individual and social benefits such as better health, improved well being, better parenting, and increased social and political engagement' (OECD, 2005: 5).

*Social*

In policy domains, the importance of and interactions between human and social capital are increasingly discussed. According to the OECD, both capitals share factors that develop life satisfaction and social cohesion, making public investment in them vital for future well-being (OECD, 2001). As societies become more fragmented and diverse, the abilities of individuals to manage interpersonal relationships and to build new forms of cooperation will be increasingly important (OECD, 2005). Capital is accumulated in social groups or individuals when they become trusted and engaged within their communities. Such assets facilitate the satisfaction of many human needs, covering the immediate family, household and workplace to wider relationships with society. Optimal external conditions value individual differences, contributions, responsibilities, rights and roles. Collectively these assets create trust and social cohesion and conduce to confident and relatively stable identities.

The relationship between social capital and ICTs has been much discussed by such sociologists as Putnam (2000), Wellman (2001), Rheingold (2000; 2001) and Keeble and Loader (2001). Robert Putnam in particular has argued that a decline in social capital in the US is largely attributable to the pervasiveness of television in everyday life. However, his approach measures relationships quantitatively, such as frequency of interaction and membership of networks. To understand the impacts of the new media across all assets, this study seeks to gain insights into changes in trust, responsibility and similar qualitative elements. Nevertheless, Putnam's work highlights the unforeseen consequences of new forms of media displacing social interaction previously taken for granted.

The next two assets - cultural and political - are discussed separately as too often they are incorporated into the 'social' category (for example, in simplified models of the dimensions of sustainability; environment, economics and social). However, they are arguably as complex as other systems and provide essential conditions to the satisfaction of human needs (such as conflict resolution and creativity).

*Cultural*

Perceptions of cultural assets are often limited to creative activities and their products. But 'culture' embodies key elements of everyday identity, including

customs, language, dialects, food, clothing and recreational activities, and, in even wider application, it provides references for shared values, norms and morality. Importantly, cultures embody a sense of time through the collective memory of development and learning, including mistakes. 'Culture' can be linked to the concept of 'heritage', concerning which there is both cultural and natural, interacting with the concept of 'cultural landscape' in which place has meaning for the history, events and shared stories of people.

Two important aspects of cultural assets are the capacities for supporting diversity and creativity, and for confident articulation and expression of needs, values and visions. Fostering 'cultures' of learning and innovation within communities, for example, supports other elements of human and social development. Diversity within a culture provides the base for a 'creative economy' (Florida, 2002) and, across cultures, provides different perspectives on global issues for democratic problem solving. One of the earlier critics of electronic media's penetration of everyday life was Neil Postman (1993), who argues that a culture of public discourse is being eroded as people become increasingly preoccupied with mass entertainment.

Dahlgren (2000) argues that 'civic culture' generates both the normative and cultural resources that enable a democratic system to function. Such a culture has four elements: relevant knowledge and competencies; loyalty to democratic values and procedures; practices, routines and traditions; and identities as citizens. Dahlgren believes there is a need for more empirical research into the roles of these four dimensions. These could also assist in analysing the role of new digital media in changing political involvements and perceptions of democracy.

*Political*

Systems of collective decision-making that provide the conditions for individuals to meet their needs through social justice, equity and freedom, have evolved in many cultures and range from tribal to democratic models. These have all evolved as a result of experiences of limits, excesses and balances between roles, rights and responsibilities. Their stability is under challenge from internal and external factors and they can easily collapse into anarchy, dictatorship or genocide, as witnessed today in various countries around the world. The main destabilising factors are failure to provide for basic human needs and also failure to continuously monitor and improve the institutions of governance.

The values of freedom and security underpin the western democratic model, yet the latter is not as stable as most believe, with internal conflicts, voter apathy, marginalisation of dissenting views and minority perspectives, and the suppression of information all continuously testing the effective functioning of representative systems. The active participation of people is vital to ensure a diversity of perspectives on social needs, problems and solutions. Thus, this capital composes the collective capacity of institutions to manage issues of justice, responsibility, equity and access to information and learning opportunities to obtain knowledge. This capital also includes values and skills for collective and communal conflict resolution between opposing needs and worldviews.

There is considerable expectation that digital technologies will improve open and effective democracy, especially as the interactivity potential of 'web 2.0' developments allows greater two way sharing of information. Yet there is little research into how such 'e-democracy' tools will build the quality of decision-making and responsibility for shared problems and solutions. Given that digital technologies are now economically, socially, culturally and politically 'indispensible' they are among the most important public policy areas: 'something of a litmus test for democratic politics...in terms of both process and outcomes' (Barney, 2005:25).

It is important to remember that healthy political capital is about the quality of the 'public space' which supports individual citizens and their private needs. In relation to freedom and security tensions, the issues of public surveillance, 'identity theft' and data 'profiling' of individuals as 'consumers', shifting ICTs further into the political arena. To these, add the already contentious issues of internet governance, regulations, censorship and governments' role in overcoming the 'digital divide' between people.

### 2.4.3 Place as an asset

There are many ways to perceive and understand such a fundamental concept as 'place', making it difficult to bridge the cultural, political and social dimensions which are contested in many issues. However, the relationship between place and 'space' and 'landscape' is a good starting point. According to Yi-fu Tuan (1977), when 'undifferentiated space' becomes familiar, it gains values such as security and stability (in Cresswell 2004:8). This links place with human needs, especially social ones (including a 'sense of place'), that provide people with meaning and attachment.

Place is transformed beyond a geographical landscape in topographical terms, to somewhere with meaning and experience. Place also becomes a 'way of seeing, knowing and understanding the world...We see attachments and connections between people and place...To think of an area of the world as a rich and complicated interplay of people and the environment – as a place – is to free us from thinking of it as facts and figures' (Cresswell 2004:11). This helps explain why human emotions are strongly interwoven with perceptions of places, as homes and as elements of personal and social identity. Places have social, cultural, ecological and spiritual values that influence decision making beyond economics and science.

The working definition that this study adopts is that place refers to the two interacting components of people (as a physical, social unit; a community) and the landscape (as the physical environment of their habitat or 'nature'). The study also sees place as encompassing the range of assets that provide the conditions for human development and the satisfaction of needs.

Yet if we are to consider the capacity of people to take responsibility for the future of a place, then the context has to include the relationships of place with space and time. Such relationships are not easily defined in terms of assets or basic functions, such as social capital or ecological services. If 'place is how we make the world meaningful and the way we experience the world' (Cresswell 2004:12), then the significance of place to the 'being' in 'human being' needs to be included, even if briefly. Martin Heidegger emphasised that 'dwelling' provided the essence of an authentic human existence, and he also saw advanced hyper-industrial technology as denying such rootedness (Mulhall, 2005; Heidegger, 1996).

Place has many meanings. Physical place includes the scales of global, regional to local neighbourhood in either urban or rural location. Space that people inhabit also relates to proximity, isolation and to public and private spheres. Human needs related to place cover economic, social, ecological, cultural (the 'cultural landscape' of heritage, memory [time], spiritual and recreational activities) and identity that extends to political meaning. The way people think about place has both strong time and space dimensions (Massey, 2005).

Identity also relates to belonging, and to one's self-image as citizen and consumer (the latter can be either place-based or virtual). In an age of diminishing space, 'community' can now be described in terms of 'of interest' and 'of practice' where

collective, common bonds are based on networks de-coupled from physical place. This is the most powerful transformative factor in relationships that people have with place in the digital age. The impacts of ICTs on how people engage in their actual location, i.e. participate proactively and responsibly to enhance and maintain the assets embedded within it, is of fundamental interest in this study.

Physical place defines much of the 'quality of life' that individuals seek to obtain and maintain. Their relationships with both the people and 'nature' components of place are critical as means to ends. The qualities of these relationships are indicators for the success of the overall outcomes sought by people and also serve as important inputs to their decision-making processes. The social capital (or assets) of a community depends very much upon the resources of knowledge and identity that individuals bring to their communication with one another (Falk and Kilpatrick, 2000). But in the digital age, neither knowledge nor identity may be sourced substantially from physical place and the reality of face-face communication.

## 2.5 Decision-making and responsibility

### 2.5.1 Human behaviour and rational choice

How people perceive their needs guides their thinking and acting and hence responsibilities to self, others and the environment. Most official public narratives adopt the 'rational-economic model' of human behaviour, which assumes that individuals systematically evaluate choices but decide on economic self-interest. In terms of civic issues, this suggests that 'an organisation need only inform the public that it is in their financial best interest and the public, being 'rational', will behave accordingly' (McKenzie-Mohr, 1996:2). Assumptions also underline the 'attitude-behaviour models' applied through education and public awareness campaigns, in which changed attitudes are expected to lead directly to changed behaviour. Anticipation of citizenship responsibility is one such example.

Different rational choice theories have varied views about how individuals act to maximise their utility under constraints of institutional circumstances and the quality of information available. Collective behaviour is seen by these theories to be an aggregation of individual choice. In the theory of 'reasoned action' (Fishbein and Ajzen, 1975), two determinants of intended behaviour are attitudes (beliefs) about the

consequences of an action (and the evaluation of such outcomes), and the subjective norms of the social-cultural context. Some research suggests that personal experience of consequences, as in the case of 'ecological cues', has been shown to be as important as the provision of knowledge (or information) about consequences (Soler, 1995). Regarding the second determinant, 'moral behaviour' theory also addresses the concept of responsibility in relation to awareness of consequences. According to Schwartz (1977), most post-rationalist strategies adopted by people to mitigate perceived high personal costs of altruism, involve denial of consequences and personal responsibility (in Thogersen and Andersen, 1996).

Studies have examined 'the 'individual versus the collective dilemma' of acting either in primary self-interest (economic rationalism) or with social commitment. The moral factor as a motivation base for decisions differs in societies as much as in individuals, with some societies tolerating 'free riders'. Thus, the ideal collaborative and communicative society as envisaged by Habermas's 'ideal speech' or communicative rationality theory (1984) seems problematic as it depends on competence and confidence to engage in open debate (Uusitalo, 1989). Luhman's (1995) theory of social systems functioning as communication systems emphasises understanding by the receiver to ensure effective communication. Technological mediation of communication without all the subtleties of face-face communication adds considerably to this challenge. Conscious discourse and subsequent self-reflection should encourage collective responsibility for shared future welfare, which the vision of sustainability suggests to be imperative.

The complexity of human decision-making means that personal responsibility is linked to dynamics of personal ethics and identity with group norms (Moisander, 2000). Some, such as the social psychologist, Uwe Flick (1998), believe that 'behaviourist' economic and psychological theories of individual rational choice ignore the strong influence of social systems. However, consumer theories are now beginning to recognise that several constraints lead to 'attitude-action' gaps. These can be categorized as 'preconditions' of internal (abilities) and external (opportunities) factors that moderate attitudes and actions. The following list summarises the literature on attitude-behaviour relationships and constitutes a variation of the Motivation-Opportunity-Ability Behaviour model of Thogersen and Andersen (1996:182). The internal variables are grouped into consumer or citizen motivations and abilities, while the external variables are identified as consumer or citizen opportunities to act (examples are included in brackets).

Internal: Motivation

- attitudes (environment and health, including fears/risks);
- perceived personal responsibility (moral obligation to foster sustainability);
- perceived action/product attributes (quality, performance and differences);
- personal experience (of action/product, environment and consequences of decisions); and
- psychological factors (locus of control/empowerment, trust, extent of choice and lifestyle aspirations).

Internal: Abilities

- conceptual knowledge (including 'abstract' attributes of actions/products);
- instrumental knowledge/information use skills (including recognition of standards);
- economic circumstances (household budget);
- variation of habitual purchasing behaviour; and
- confidence with complex decision-making.

External: Opportunities

- supply (access to action/product alternatives);
- supply of information (of action/product, processes and impacts);
- varied experiences;
- cost/price structures (subsidies, imports);
- socio-political climate (signals, rights, regulations and social norms), and
- time and pressures.

Such a list indicates the main factors involved in decision-making for the consumption of digital technologies at the household level. Motivations, abilities and opportunities for community responsibility and accountability can be extended from the individual to the collective. They show how complex and challenging the process of decision-making is, if it is to proceed on the premise of being fully informed to ensure the potential benefits of new technologies are maximised.

Combining all the theories discussed, including behaviourist theories, the phases of informed decision-making at the community level would involve the following linear flow to the outcomes sought:

- inputs of information (and its conversion to instrumental and conceptual knowledge) and communication (including listening, feedback and dialogue);
- processes of visioning, learning and decision-making itself (e.g. risk, cost-benefits calculations);
- outputs of motivation, abilities and opportunities to act (these are grouped into collective competencies [knowledge, skills and values] and supportive conditions, including the level of capitals, such as learning culture); and
- outcomes related to needs and preferred futures (including locus of control, destiny determination, ownership of change, and effective monitoring, evaluation and negotiation of means to ensure ends).

In this era of rapid change, both everyday and longer-term decision-making are dependent upon 'emotional intelligence' (Goleman, 1995); the capacity of being able to cope with anxieties, stress, and grievances. This factor is increasingly occupying business and governments as the abilities, motivations and opportunities of ordinary people to deal with such pressures in a 'rational' way becomes more doubtful. In all age groups and situations, emotional capacity affects decision-making and in extreme situations is linked to depression, suicides and substance abuse. Risk-taking behaviour is acknowledged as a failure of learning and decision-making about longer-term consequences at both the individual and society level.

### 2.5.2 Risk theories

The concept of risk, involving calculation of real or perceived risk, is also fundamental to decision-making, learning and to the theories under consideration in this study: sustainability (where the 'precautionary principle' is central); innovation (to maximise opportunities by calculated risk taking; and democratic citizenship (where responsibility for actions is essential). In terms of polices, 'risk' is measured in terms of likelihood of adverse consequences on objectives. Although risk is often discussed in terms of an event, the focus of risk assessment falls upon the prediction of cause and likely impact.

In everyday life, individuals and organisations require some risk assessment before undertaking any action, beginning with establishing the context of their aims or needs, and then identifying potential sources of risk. Both internal competencies and external conditions are factors in the evaluation of risks. Through interaction with people, the physical environment and technology, evaluation of risk can be much influenced by external signals.

Perceptions of risk are integral to discussion about change and decision-making. Change is fundamentally about uncertainty. How individuals evaluate risks is influenced by prevailing cultural attitudes that can embrace uncertainty with confidence or with risk-adverse trepidation. In most cultures, science and technology is perceived as providing indisputable, objective knowledge that is preferable to more uncertain subjective and emotionally-based knowledge. Ironically, the greatest digital development of them all – the computer – has led to the need for more risk assessment, as modelling has shown such knowledge to only be as reliable as the quality of the information inputs. Global warming is an example of how, when incomplete scientific knowledge combines with cultural faith in technology, learning and decision-making can be paralysed.

Several theoretical approaches explain how people perceive risks differently. Douglas and Wildavsky (1983) argue that risks are socially constructed and filtered through communities and social institutions. Within social psychology cognitive factors tend to be emphasised, while within reflexive modernisation theory we encounter notions of a globalised and technologically dependent 'risk society' (Beck, 1999) and the more optimistic 'reflexivity' of trust in abstract or experts systems (Giddens, 1990; 1991). Yet another view is risk as heightened awareness of danger due to greater expectations of safety and predictability (Luhmann, 1995). One critical factor in all theories is the role of trust, especially in public institutions to help people cope with uncertain knowledge about, and control over, risks.

The creation of modern risks, in large part via technological vectors, has challenged the dominant idea that any risk from continuous technical progress is an acceptable cost. It has meant that questions about control of technology are more relevant to community debate: 'if technology is a major social change agent, how do we learn to control it? ...If we have carefully chosen a form of life, acquired habits with which we are happy, constructed institutions and organizations making a good life possible

– why would we give them up just because a new technology was beckoning us to move on?' (Dahlbom, 1997:19).

Government and industry carry considerable responsibility for decision-making about risk, including on issues directly impacting community health, safety and environmental quality. In democracies the expectation is that information on the analysis and characterisation of risks, costs and benefits will result in informed and trustworthy decisions. However, given the prevailing levels of uncertainty in information and capacities for its assessment, such public trust may be 'naïve'. According to Paul Stern, 'risk characterisation involves complex, value-laden judgements and a need for effective dialogue between technical experts and interested and affected citizens' (1996:11).

Capacity for risk assessment and cost-benefit analysis of change options is related to means-ends and the ability to determine priority needs. Stern advocates 'analytical-deliberative' process to help risk calculus. This involves knowledge from all relevant disciplines and 'communication and collective consideration of issues' (1996:4). Learning and feedback is essential to ensure effective analysis and deliberation, including reflection. He further adds that to be deliberative implies purpose and 'a sense of having carefully thought out the consequences of actions'. Deliberation is neither 'adversarial democracy' nor assumed consensus but 'an interactive learning process for those involved' (1996:73-74).

Everyday decision making and the anticipation of longer-term potential risks involve concepts such as safety, security and trust as people try to avoid and manage events with undesired effects (human relationships are one such arena). A number of psychological theories try to explain information storage and retrieval used in communication and decision-making and includes the schematic processing involving long term memory and more 'piecemeal' processes (Wilkins, 1991).

The capacity of a community to understand and value risk is just as important as it is for individuals and organisations. In terms of such decisions as the setting of longer term goals, a capacity for risk assessment is essential if communities are to determine appropriate means to ends. Decisions with longer-term timeframes pose a greater challenge than daily choices. There is a need to continuously re-examine earlier assessments in light of new information and subtle contested shifts rather than to perceive decisions as final. The capacity to focus on what is really important is a test

of individual and collective capacity to accurately determine consequences and probabilities of occurrences. Prime examples are share market investments, strategic regional developments and climate change responses. Failure of such capacity leads to 'crisis' responses, as witnessed in 2008 with the global financial system. Management of risk is also an issue of responsibility, as it can be denied, avoided, transferred or accepted. Perception of risk can lead to aversion, paralysis or ignorance. As a degree of shared responsibility for risk decisions by individuals is to be found within all levels in society, from the family unit upwards, it is possible that such responses can be linked to unreasonable fear or low confidence in the collective competencies and conditions for understanding risk. Although policy discourse tends to imply that people should embrace risk concerning change and innovation, concern for the future and uncertainty over where the locus of control is to be found make fear a possible response, and fear of taking risk can extend to a post modern 'culture of fear' (Furedi, 1997).

There is thus a need to understand more fully the relationships between culture, risk taking and fear of change, including the capacity of communities to confidently relate risk-management decision-making to cost-benefit and means-ends assessments (for example, those to do with basic needs such as food choices and health). These appear to be largely ignored in the literature and constitute a gap in much discussion about responsibility for consequences, both intended and unintended, of rapid change processes.

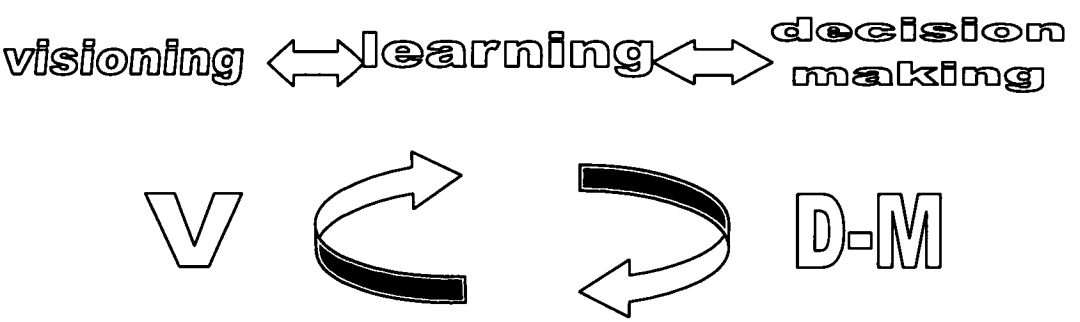
Discussion about capacity to cope with risk and uncertainty needs to be placed within a context of the rapid increase in information. This has been described as an 'ignorance explosion' because, 'while information is a multiplier resource, our capacity to pay attention and process information is a zero-sum resource... specializations have mushroomed, as has the complexity of most of them. Coping...has meant jettisoning a number of traditional approaches to gaining and using knowledge' (Angell and Smithson, 1991: 7). The rapid deployment of ICTs has also expanded the field of discussion about the rights of children to protection from misuse of the new technologies in terms of 'harmful content', for example. The risk of harm throws up a range of new challenges to ensure that the socialisation benefits of digital social spaces, such as MySpace, are balanced with concerns for children's vulnerability (O'Connell and Bryce, 2006).

## 2.6 Learning and competencies

### 2.6.1 The pivotal role of learning processes

Capacity building occurs through learning processes and knowledge. Skills and values are the building blocks and outputs from such processes. Learning itself occurs formally through institutions, informally through organisations and non-formally through media and social networks. The key factor is that learning is a means to owning change and is therefore fundamentally linked to concepts of democracy, governance and informed choice. In sustainability policies it means new understandings, insights into pressures and interrelationships affecting the self, other people and ecosystems. Similarly, the shift away from 'old' economic activities, and learning to cope with new production and consumption decisions, requires appropriate knowledge, skills and values, including those needed for thought and design, and creativity.

**Figure 1: Learning is pivotal for visioning and decision-making processes**




However, there appears to be a lack of policy related research that addresses the requirement to build community capacity, through learning, for decision-making on key visions, such as 'the digital future'. Such decision-making includes understanding the connections between means and ends, especially to resolve unexpected, confronting issues. While the vision rhetoric of any policy implies ownership of change, the feasibility of meeting this goal depends upon learning and the act of engaging in the production and application of knowledge. Thus all three processes – visioning, learning and decision-making - need to be considered in this research. The capacity to decide on the means to achieve envisioned ends requires learning in a continuous process of initiating and responding to change. The quality of inputs, information and communication to all three processes affects their success.

As ICTs mediate inputs, the issue of their quality is an important factor, and especially so for formal, non-formal and informal learning.

Democratic and responsible ownership of change is dependent upon motivations, abilities and opportunities to set visions, learn and act. It operates simultaneously at the individual and collective level, as in organisational learning (Senge, 1990). The most effective form of learning is 'double looped', where traditional beliefs and goals have their assumptions checked rather than taken as givens. Workplace learning is seen as vital for any organization to survive, with the need to ensure motivation for learning and the fostering of team, cooperative learning being essential (Argyris and Schorn, 1978; Rylatt, 1996). Exchange of information and ideas flow once fear of failure or change is replaced by trust and open communication. Considerable time and resources are applied to build organisational excellence. Critical to the management of any kind of change process within organisations are feedback loops and learning processes for continuous improvement.

There are significant challenges to established authorities (including schools and public agencies) presented by the growing number of alternative sources of potential learning in more pluralistic, fragmented and globalised societies.

It is difficult to locate explicit statements of anticipated community level competencies in policies of sustainability, regional innovation and democracy. However, a common core of learning outputs of knowledge, skills and values can be identified by interpreting expected policy outcomes from national governments and international bodies such as the UN and OECD (some of these documents are referred to elsewhere in the thesis). These include, but are not limited to, the following implied learning outputs.

Knowledge

Conceptual and instrumental knowledge: how systems work and interact (economic, social, ecological, and also cultural and political), based on assets or capitals they provide across time and space (local to global).

Skills

Critical thinking, problem solving (including communication skills for conflict resolution), creativity, and cost-benefit determination for negotiating and managing decision-making challenges (risks, etc).

Values

Understanding the role of norms, ethics and moral responsibilities (including principles of shared trust, intra and inter generational care, and precautions). Capacity for engaging in value-based dialogue and developing 'emotional intelligence' to achieve cooperative solutions.

The challenge remains, however, to locate policy examples of clear learning outputs in regard to 'the digital future'. Even one of the most advanced and comprehensive documents, the Australian Government's *Sustainable Curriculum Framework* (DEWHA, 2010), seeks competencies for 'envisioning of preferred futures', 'civics' and 'systems thinking (knowledge of ecological and human systems)', yet confines the role of ICTs in change processes to data production and utilisation.

### 2.6.2 Formal education

Socialisation is a key function of formal learning and is linked to culture, identity and the attainment of all human needs. 'Education is concerned, not merely with human survival, security, comfort and affiliation, but with an enriched and extended sense of human well-being....human flourishing [is] the goal of human life [and] education is justified by the contribution it makes to this end' (Rodger, 1993: 15).

Yet the formal education sector, especially at the school level, is preoccupied with curricula changes that focus on preparing young people for the workforce in a knowledge-based economy. ICT competencies emphasise the continuous updating of technical skills, which are relatively easier to assess than the more complex and qualitative skills for social relationships, creative thinking and civic responsibility. Belatedly, attention is being paid to the usage and content patterns of digital technologies as schools react to emerging issues such as cyber bullying. The OECD's PISA (Program for International Student Assessment) indicators for assessing educational outcomes seek to centralise the measurement of educational development to global, codified knowledge. This reinforces the importance of both competitiveness and digital technologies in popular 'envisaged futures'. Place-based tacit, traditional knowledge and direct experiential learning, especially in the local 'outdoors', is increasingly ignored or marginalised at best. Yet, ironically, the 'soft' educational dimensions of relationships, trust and care are emerging as critical factors

in the functioning of formal learning institutions, covering accelerating problems of discipline and security that undermine conditions conducive to shared learning.

According to the OECD, secondary education outcomes include abilities to build and benefit from social capital, cooperate, and manage and resolve conflict; and to engage in reflectiveness, especially thinking about thinking, creativity, responsibility for actions and critical thinking (including to evaluate the quality of information and its social, cultural and even ideological context and impact; OECD, 2005).

## 2.7 Visions of sustainability

### 2.7.1 'Globalised needs'

Together with international trade, migration and military conflict, public awareness of the global dimension of shared human habitat has been accelerated by ecological challenges, such as the loss of biological and genetic diversity. The placement of global warming on the agendas of nearly all governments and multinational corporations is a prime example. In an attempt to encourage such longer-term thought and action, the concept of sustainable development was eventually formed to integrate information, communication and decision-making from the main systems of ecology, economics and social systems.

The definition of sustainable development emphasised human needs. In its 1987 report, Our Common Future, (widely referred to as the Brundtland Report), the United Nations World Commission on Environment and Development (WCED) said:

> Sustainable development is...development that meets the needs of present generations without compromising the ability of future generations to meet their own needs.... In the final analysis, however, sustainable development is no final state of harmony, but rather a process of change in which the utilisation of resources, management of investments, the direction of technological developments, and institutional changes are brought in line with future as well as present needs (WCED, 1987:5-10).

Thus, sustainability is fundamentally about human and social development based on asset protection and enhancement to meet the needs of today and the future. The

broad vision of a shared 'common future' encouraged government and business to set in place long-term sustainable production and consumption patterns in both developing and industrialised countries. Unfortunately, the broad objectives have made the concept very contestable. Although sustainable consumption is widely recognised by policy makers as the demand side of both the 'population coin' and the 'production coin', it remains disputed territory in terms of needs versus wants. More attention has been given to technological solutions on the supply side than to addressing complex demand issues, many of which are perceived as 'values, ethical or philosophical' matters and are marginalised in public debate.

Although the critical role of individuals as both citizens and consumers is the focus of increasing research in fields of sustainability, the general belief is that market-driven mechanisms will successfully change unsustainable consumption patterns and levels. A widespread policy view is that supply side change, such as through cleaner production technology, will mitigate increases in demand. However, market-based 'social instruments' for education and information delivery (including the consumer-oriented tools of marketing and product labelling) are weak in practice, and the reverse may be occurring (McEachern, 2002). Consumers face many barriers in internalising responsibility for making informed, everyday decisions to follow sustainable lifestyles.

Most solutions to the global equity issue remain embedded in the economic sphere of free market trade liberalisation theories and measurements of 'standard of living'. A focus on individual judgement about what constitutes 'quality of life' could provide a more meaningful definition of sustainable development as it 'makes the concept more aspirational'. (WBCSD, 2001:7). It is placed in the context of 'ensuring a better quality of life for everyone now, and in the future', but also follows other principles, including: 'there are limits to resources but none to human creativity; sustainability involves more qualitative consumption and less quantitative consumption; all actors in society need to share responsibility, and business cannot succeed in a society that fails (WBCSD, 2001: 48-49).

Within sustainability policies there is general acceptance (at least in theory) of applying the 'precautionary principle' in risk assessments and in facilitating broad public understanding of risks. Sustainability centrally involves problem recognition and resolution through long-term, creative thinking and acting. Its mantra has been

'Think Globally – Act Locally'. The vision rests on the improved capacity of people to 'make a difference' in their physical place.

In line with the use of social instruments to support change towards sustainability, governments, business and NGOs have all advocated education. It is a complex challenge, as an international consultation on education for sustainable development stated: 'learning is the key to accomplishing the changes required for sustainable development...the overall aim of education is to empower citizens...to encourage learners at all levels to use critical thinking and reflection...to reflect – rethink – reform' (NCESD, 2004). One critical issue raised was how to 'build awareness of long-term thinking in a world where decision makers usually have rather short time horizons'.

In addition to understanding the complex interactions between economic, ecological and social systems involved with change, there is the vital democratic issue of ownership of change itself. Citizen responsibility is integral to learning for sustainability as it covers more than the matter of 'rights to information' that much research focuses upon. It requires learning about responsibility for local place in the context of global space. It also requires a capacity to understand changes over, and across, time. There is little research that examines the impact of ICTs on people's understanding of changed space-time relationships on this question.

### 2.7.2 Sustainability and technology

Implementing sustainability ends through the means of digital technologies has been a powerful policy idea, backed up by a confident anticipation of new attitudes and actions, especially among youth:

> There is increasing disenhancement with lifestyles focussed on material acquisition within some segments of the population, particularly the young. The values of simplicity, tranquillity and community begin to displace those of consumerism, competition and individualism....the youth of the globe discovers a new idealism and collective identity in the search for a planetary community. The exchange of ideas and sense of global unity are assisted by the now nearly universal networks ...the Internet offers powerful new channels for communication, education, and democratic process (Gallopin, *et al.*, 1997:37).

This very optimistic reference is one of the few made to ICTs in sustainability literature. The expectations that ICTs will assist the 'great transition' to sustainability only began to feature strongly about a decade after the Brundtland Report (WCED, 1987). Highlighting how rapid digital technologies have developed, it is extremely difficult to find any substantial reference to them in theories or policy documents until this time. The concept of sustainability could be said to be 'pre-ICT'. However, today digital technologies feature prominently in the literature as a means to implement sustainability policies (including climate change - by virtual mobility replacing physical travel), facilitate creativity and enhance democratic citizenship (particularly through online empowerment). A radical economic shift is integrated with the knowledge society vision. Theories ranging from 'Factor 4/10', which substitutes material flows with knowledge flows to engaged citizenship, are reliant upon IT for e-learning, e-commerce and e-government.

However, one early hope that information technology would reduce paper consumption has proven to be unrealistic. 'Rather than leading to a reduction in paper use, the 'information revolution' has been complementary, generating a surge in paper consumption. Furthermore, the need to communicate more frequently and in greater detail has more than compensated so far for any displacement of paper by electronics. The paperless office has not transpired'. (Robins and Roberts, 1996: 24-25). More recently, the advent of enhanced computing, printing and copying technologies within the home environment has added significantly to energy demand. As Lundvall (1992) warned at the time of the release of the UNCWED report, sustainability requires social as well as technological innovation.

After the initial enthusiasm for the opportunities that ICTs offer to assist sustainable development, a more cautious attitude is emerging. European research studies have shown that 'despite early hopes, the digital society is not automatically going to be more equitable, more resource efficient, or more sustainable' (Forum for the Future, 2005: 5). Other research suggesting the potential of ICTs to assist economic transformation at a regional level requires improved frameworks for policies and 'recognition that technology is a means not an end in itself' if sustainability outcomes are to be delivered (2005: 6-7).

Overall, cutting-edge technology occupies a controversial place within advocacy for sustainability, with some seeing it as a 'root cause' of unsustainable development while others see it as solution (Forum for the Future, 2005). However, technology is

generally perceived as part of the solution, as investments in cleaner production and eco-efficiency demonstrate. One of the main 'means to ends' envisaged in sustainability is the 'dematerialisation' of the economy, where services and knowledge help satisfy human needs, rather than the direct consumption of products involving intensive resource use and pollution. This calls for technological solutions and innovation on a continuous basis, as sustainability is not a final state but a process.

Services have been advocated as mechanisms for satisfying human needs, rather than increasing the consumption of products involving direct resource use and pollution. A more ethical approach, appreciating that market demand for products represents only a fraction of total human needs, focuses upon 'eco-sufficiency' and quality of life based on less consumption. The concept of 'environmental space' (that equitably shares access to basic ecological resources such as water and soil) is an attempt at raising awareness in industrialised countries of the absence of basic needs fulfilment by many people in developing countries (Robins and Roberts, 1996: 13-18). However, its potential as a solution to the equity issue has not been realised, despite apparent increase in 'global thinking' amongst consumers.

## 2.8 Visions of the Learning Economy

### 2.8.1 Knowledge society

Several decades ago Daniel Bell (1973) described how industrial and post-industrial societies would transform themselves into 'information processing societies'. The 'information society' has not progressed as rapidly as Bell anticipated to a more advanced state of 'knowledge'. Nor, indeed, have the requisite processes of 'learning'. Although these concepts have been linked, their mainstream use has not advanced very much. The term 'information society' holds sway (Castells, 1996; see also Himanen, 2004). Although 'knowledge' and 'learning' are terms occasionally used in Europe, American literature and media often just refers to the 'information age' (the production and exchange of a commodity), giving little attention to 'society'. In an edition devoted to digital technologies and people's relationship with them, *Time* magazine did not even mention the term 'knowledge' (2006b).

One wonders if this is an accurate description of the situation. Is it simply information that is being transferred? After all, information is not automatically knowledge. Certainly learning is required to build capacity to process both conceptual and instrumental knowledge. Information can be either primary (first hand) or secondary (codified) information, but it needs to be related to existing knowledge to be understood (Hill, 2000). A clear difference is that while information is public and accessible, knowledge is personal and private and is 'information combined with judgement' of the source (2000:30). This highlights the ability of people to understand the context of information, its significance and to 'assess the quality, use and consequences of that information'. Furthermore, 'whereas one cannot be thoroughly knowledgeable without being fully informed, one can be informed without being thoroughly knowledgeable. Thought in the shape of judgement is required to make the transition' (2000:34).

This has serious implications. Many assumptions underpinning informed decision-making through ICTs manifest a lack of insight into the learning outcomes of knowledge, skills and values. Hill adds that preoccupation with 'know how' can lead to an 'aggressive' form of confidence in abilities that inhibits learning. The failure of the 'new economy' to look beyond technology as the prime 'problem-solver' (in social, ecological and economic matters) exposes an assumption that capacity to learn is not the essential challenge (Lundvall, 2004). The situation is puzzling and suggests that the relationship between means and needs is not clear as far as digital technology is concerned. Possibly the relevant theories concerning knowledge remain to be fully understood, especially as such understandings challenge power and ownership of knowledge itself. It may also be a similar situation with learning, especially its dimensions of socialisation and cultural communication.

Knowledge is used to enhance power, and the 'objectifying' and training of individual learners to ensure that they think and behave according to cultural norms is pervasive, especially in formal education (Foucault, 1972). However, knowledge gained from the process of free thinking is essential for democracies to function and for individuals to achieve rational autonomous destiny according to Kant (Gregor, 1997), to take responsibility for their actions and to deal with the future. The philosopher of education, John Dewey, considers the ultimate value of knowledge lies in the assistance it accords *further* thinking, 'for we live not in a settled and finished world' and 'thinking is the accurate and deliberative instituting of connections between what is done and its consequences' (in Boydston, 1985:158).

Despite these reminders, most policy attention in the deployment of digital technologies simplifies, or entirely ignores, the need to enhance learning processes.

In his book *Knowledge Societies*, Nico Stehr argues that excessive attention is paid to the production, processing and transmission of information at the expense of the substance of information and communication and 'the reasons for the demand for, and changes brought about by the content of the information which is communicated' (1994:12). A shift in focus would draw attention to how knowledge develops social conditions for thinking and acting about needs and means to satisfy them. Such processes of 'remembering' (von Cranach, 1998) have implications for social cohesion, as such knowledge builds collective consciousness, through the social, cultural and political capital shared by a community of place or of practice.

Some observers, such as Howard Rheingold (2000), have argued that virtual communities can replace localised social structures, as computers can transfer the tacit and practice-related knowledge within communities. But tacit knowledge is embedded in practice and its transfer requires social learning in specific contexts and is not easily abstracted. The codification of knowledge also becomes an issue as it involves the capacity of a community of practice to also decode a representation transferred into it, understanding its limitations and often having to rely on experts. The increased use of codified knowledge mediated through ICTs subsequently increases the authority of 'experts' to the extent that digital technologies now offer images for individual and shared identity. This image-deference to 'experts' allows people to bypass problems in communicating emotions and negotiating compromises (Bauman, 1991). The concept of 'emotional intelligence' (Goleman, 1995) highlights the capacity of individuals to manage, express and control the emotions of themselves and others, especially in public space. This is another issue of competency and responsibility that depends on self-awareness, reflective thinking and an understanding of the consequences that adhere to action options.

### 2.8.2 Innovation and entrepreneurship

In discussions of change processes, the central argument is that innovation is imperative for business and community survival in a globalised world of open competition. This requires investment in competencies and in the infrastructure requisite to problem solving and continuous improvement. The development of a capacity for entrepreneurship (Schumpeter, 1942) is important for value-adding to

traditional regional products and services. The characteristics identified by a survey of successful Australian entrepreneurs in 2005 included passion (to enhance customers' lives rather than make money), problem orientation, and perseverance (long-term hard work and determination) (*Australian Financial Review Boss,* April, 2005). The World Business Council for Sustainable Development (WBCSD) identifies four critical elements for business innovation: personal creativity, innovative climate, operational efficiency and strategic depth (emphasising foresight, vision and capacity for long-term, pro-active thinking) (2001:13). Innovative leadership involves cooperation and collaboration within organisations as well as with partners: 'people create the innovations and that is why innovating is first and foremost a human and social process' (Committee for the Future, 2005:7).

While entrepreneurial processes have been closely linked to communal relations in many studies, community networking can constrain as much as benefit the entrepreneur if the encouragement of creative thinking is limited (Lauer, 2005). The social context of innovation is complex, highlighting the importance of an entrepreneur's commitment to the long-term sustainability of a community. Lundvall (1992), in his 'national systems of innovation', emphasised policies to foster regional clusters, economies of scale and advantages in capacity building, even though his main focus was on technology intensity and specialisation. All forms of capital underpin innovative regions (Archibugh and Lundvall, 2001). In addition to the obvious development of human capital (or more accurately the knowledge capital of human resources) and social capital, supportive cultural and political capital are also required. The natural assets, or, in competitive terms, the natural advantages of nations and sub-regions, also reinforce the message that, despite globalisation, successful innovation at the regional level does have a geographic context.

If effective regional entrepreneurship should enhance the assets of place, then the needs of the community should be paramount. The question of need requires that 'markets foster innovation by encouraging experimentation and rewarding those ideas that meet people's needs and aspirations most efficiently' (WBCSD, 2001:12), but '...innovation has both positive and negative impacts on the environment and society...Society needs suitable assurance mechanisms for assessing and managing the risks and benefits of innovation. In essence, the test to determine whether innovations will meet success in the market must be: "does it really improve overall quality of life"?' (WBCSD, 2000: 13-14). It is important to think about innovation as extending beyond products and services to social needs as the future requires

'innovations that improve the functioning of communities and offer new solutions to their problems' (Committee for the Future, 2005:3-4). The capacity to think and act as a regional entrepreneur cannot be isolated from understanding the social, cultural and political context.

### 2.8.3 Innovation, creativity and digital technologies

In their "four elements for business innovation" cited above, the WBCSD particularly emphasised creativity: 'theoretically, innovation results from the intersection of creativity, competence, worldview, and leadership... [yet] creativity is the great enabler of innovation'. Furthermore, it is important in the creative process to 'provide alternative views of the world [and to]...expose people to other settings, realities'. The point of linking creativity to sustainability challenges is underlined thus; 'some would say that we don't see what we haven't thought about' (WBCSD, 2002:15-17). Creativity can also be related to a capacity to imagine the future, or more accurately a number of possible futures, including those least preferred.

Creativity involves encouraging, recognising and evaluating diverse ideas. Pluralistic perspectives, beyond a narrow set of experiences or expertise, are essential for creative problem-solving. The existence of a healthy innovative environment 'gives leeway to the development of many kinds of ideas and it creates the conditions for testing the ideas as well as for their critical appraisal'. Such conditions can be summed up as 'information flows + networks + buzz + action + trust'. Together these factors contribute to the success of innovative regions (Committee for the Future, 2005: 4).

The close links between innovation, cooperation and creativity are further emphasised in the more recent theory of the 'Creative Economy', where service jobs are generated from the effective interaction that allows creative problem-solving (Florida 2002). Although the qualities of place become more important for innovation, digital technologies remain central to such theories of regional development (just as they are to more conventional ones). There is also a widespread expectation that ICTs will help isolated communities overcome the 'tyranny of distance' by facilitating greater access to markets, more diverse information and ideas, and more informed and creatively engaged communities. Yet the lack of 'critical engagement' about possible negative impacts of ICTs on 'place-based communities' may further marginalise rather than develop them (Evans, 2004: 65).

Digital technologies are expected to enhance all stages of thinking and acting, particularly in visioning, learning and decision-making processes. However, most attention is given to developing individual competencies (human capital) and only within discussions about organisational innovation is there any clear focus on the role of supportive conditions (social and cultural capital). But external social, cultural and political narratives influence not only the opportunities but also the motivation to learn and act for shared outcomes.

## 2.9 Critical assumptions about the role of digital technologies

As shown in this chapter, ICTs are integral to the policies under consideration: sustainability, regional innovation and democratic citizenship. The processes of visioning, learning and decision-making also crucially implicate digital technologies. Digital technologies are strategically central to many prominent policy outcomes, including: wider engagement in the public arena by active citizens, an improved sense of freedom (including confidence to develop competencies, imagination and ideas for an improved future), more informed decision-making, a better balance between work-home pressures (due to timesaving and improved communication), wider and deeper community connectedness (including shared cooperation, understanding and identity), and more diverse and creative solutions to community needs (including innovations to help meet needs).

Both individual and community competencies to understand and engage in the challenges and solutions of long-term change need to be in place. However, the collective democratic 'will and ability' is assumed to be a given if sufficient information and incentives are supplied to individuals to make rational decisions in their best interests. Many aspects of the sustainability, innovation and citizenship policies in process of deployment appear to be moving only very slowly towards expected outcomes. There may even be retreat in some instances.

All policies directed at ensuring a positive transition to rural futures rely on learning processes to set visions and guide decision-making. The democratic principle of ownership of change is acknowledged. Yet, it is assumed that minimal investment is required for improving, or even monitoring, the level of capitals that underpin the external conditions conducive to learning (such as cultural norms that support learning as continuous, open inquiry and creative pursuit of problem-solving). What

is rarely evaluated in theoretical studies is how compatible policy goals are to the needs and preferred futures of rural communities. The strong policy focus on economics relegates social, natural and cultural dimensions of place and planning for desired futures to a status of subservience. It follows that what needs to be examined is how rural communities perceive the changes in time and space that are embedded within digital technologies. These are potentially profound.

## 2.10 Conclusion

This chapter has provided a conceptual framework to analyse the capacity of rural communities to shape their futures. In particular, it has explored the role of digital technologies in changing the relationships individuals have with time, space and place. Many assumptions underpin the role of ICTs in policy responses to the very pressures for change of which they themselves are a part, especially in regard to transformation to sustainability, innovative 'learning' regions and democratic self-determination of communities. These in turn are integral components of the vision of 'the digital future' promised by businesses and governments alike.

As patterns emerge from the case study findings, these and other factors will be explored further, using aspects of the grounded theory approach. The interpretation of data from the cases and their contexts will also draw upon recent studies.

# CHAPTER 3: RURAL CHANGE PROCESSES AND THE CASE STUDY CONTEXTS

## 3.1 Introduction

In this chapter the rural context for the theoretical and policy issues discussed in the previous chapter is provided. Issues are set within the context of the challenges facing rural communities generally, and specifically in the two selected case study regions in western Norway and the Australian island state of Tasmania. The main geographical attributes of each case region are discussed as capital assets related to time, space and place.

Intended outcomes from policies addressing change pressures in rural regions (especially the role of ICTs in sustainability and innovation) are outlined in general and then in case-specific circumstances. This includes a brief exploration of the relationships between macro-global pressures, such as free market trade in agriculture, communication and education. Historical and current change processes in Tasmanian and Norwegian food producing districts are discussed, the relevance of the two chosen regions is explained and the research design and methods employed are described.

Further differences and similarities between the selected case regions will emerge after the empirical data is analysed in later chapters.

## 3.2 Significance of rural places to critical policy issues

Ecologically, the natural capital and eco-services provided by the environments within rural regions underpin the very existence of urban communities, in all countries. Global, intra-national sustainability is dependent on both urban and rural sectors. Scientific, cultural heritage and environmental perspectives combine to put more demands on rural communities to change thinking and practices. Pressures on ecosystem decision-making, both in everyday life and longer-term, are increasing. Local control is moving further to regional, national and international processes and institutions as problems and solutions become 'scaled up'.

Economically, global commodity trade trends are reducing local sovereignty over post-industrial agriculture, forestry and mining. Overall, policy priority to agriculture, especially the need to address sustainable food production and water supplies, appears to be declining as the political influence of rural regions wanes. Globalism, economic trade and free market policies are driving new centralisation of production and services. This shift away from rural regions affects the social dimension of sustainability.

New economic policies are putting pressure on social capital (such as health and governance) and human capital (capacity building through learning). These assets underpin economically viable and ecologically stable regions. Farmers increasingly experience 'cost-price squeeze' as governments react to international pressure and rationalise public support for community infrastructure, rural employment, welfare services and food production. These developments militate against broader public support for a transition to more ecologically sound farming practices and stress the voluntary sector within rural communities themselves.

According to the United Nations (UN), for the first time in human history, the majority of people are expected to be living in urban environments by 2009. The movement of humans away from rural areas has accelerated in recent decades, especially in developing countries. The implications of this new reality for the theme of this study – the capacity of communities to have responsibility for the future of places – are many. This demographic change is affecting the dynamics of all the asset bases underpinning societies, including economic, cultural and political relationships.

Under pressure from globalisation processes - and the removal of trade barriers more specifically - regional manufacturing and agricultural areas are forced to become more economically efficient in order to compete. At the same time, rural populations are under pressure to seek income diversification, including tourism, innovative small-scale processing and manufacturing, with the consequent impact on venerable regional identities and place meanings. For decades now, the policy trend has been to encourage more modernisation, industrialisation and 'high-tech' solutions to ease the cost-price squeeze on producers outside the larger urban centres. As small family farms rapidly decline in most countries, out-migration to regional towns and national cities, and eventually mega-cities abroad, continues as economic, education and socio-cultural aspirations follow the centralisation of opportunities. Those who

remain in rural areas still have the responsibility, explicit or implicit, to manage natural resources in order to satisfy the basic needs of the urban populations, namely water and food. The risk in both populations being 'out of sight' of each other in this new, unprecedented dynamic, is the potential thus created to undermine further development of democratic citizenship, regional innovation and sustainability.

The tensions emerging worldwide between the needs of growing cities and declining rural economic and political power are highlighted by the urgency of sustainability imperatives, especially for longer-term environmental safeguards. The need to share responsibilities for highly complex problems and solutions has seen many experiments in governance in recent decades at the local and regional level. In Australia, these have focussed on the voluntary partnerships of the Landcare movement (Campbell, 1994) and Natural Resource Management strategies of central governments to devolve sustainability responsibility to local communities. After 15 years and billions of dollars, some empowerment has occurred but the structures and processes of governance 'appear to be generating their own tensions and contradictions' (Lawrence, 2004:3). One issue is the 'emphasised competition over cooperation' to secure funding from central agencies (2004: 12).

Sustainability challenges, such as global warming, expose the limitations of institutional structures and processes for decision making at all levels, from global to local. Despite technology playing a pivotal role in up-scaling the problems through the increasingly intensive agriculture to which it conduces, it is still relied upon to deliver the solutions to the policy challenges of both unsustainable production and emerging consumption patterns. Gene technology, for example, will allow adaptation by farmers to declining rainfall and increasing evaporation although it brings with it significant risks to the health of humans and ecological systems (*New Scientist*, 1998). Food and agricultural production are being further transformed by the development of 'functional foods' and nanotechnology, with unknown long-term impacts (*Australian Financial Review*, December 2007).

However, the complexity of this single issue of climate change, demands much tougher decision making by citizens, as producers and consumers. For example, gene technology is driving the economic efficiencies that biofuels represent as an environmentally safer energy supply. Yet, conversion of scarce food growing land to such crops is a major factor in the alarming emergence of an 'unforeseen and unprecedented' global food shortage (according to the UN Food and Agriculture

Organisation: *International Herald Tribune*, 2007). Combined with accelerating water shortages (Monbiot, 2006), the declining supply of food has already triggered social instability in a number of cities (according to the UN World Food Program: *The Guardian*, 2008). While agricultural and rural development policies focus upon innovation, other factors may be moving faster. This suggests that the future of food will become a much more significant dimension within all strategic thinking and acting by governments, business and civil society. As a headline in a farming newspaper suggests: 'To drive, first we must eat' (*Tasmanian Country*, April 2008).

Consumer decision-making about food in everyday life also has important consequences for sustainability. The failure of increasing numbers of people to think about food inputs (sugars and fats especially) in terms of output requirements is a major cause of accelerating obesity (*Scanorama*, 2006). A capacity to think in terms of systems is needed to ensure balanced functioning human bodies to prevent health damage and economic-social costs. This example reflects the challenge in all sustainability issues to understand the complex consequences across time and space when local actions today impact upon options for global futures. Food sustainability issues are further complicated by the fact that diets in developing countries increasingly follow 'western' consumption patterns, creating a growing demand for more energy intensive and methane producing dairy and beef products, thereby reinforcing climate changes pressures.

As urban consumers become more spatially removed from food production, the disconnection from responsibility for the global warming crisis increases. Added to this is the sustainability issue of 'food miles' that is consequential upon the free trade of unpriced carbon in most agricultural policy regimes. Similar challenges for democratic decision-making in a 'global village' of consumption are domestic food security and the rights of citizens of rural areas when natural resources are appropriated by cities, including those in other countries. Although the expectation that the trajectory for rural communities is away from poverty and disempowerment, such a positive consequence cannot be assumed so blithely.

The twin visions of sustainability and the knowledge society converge in policy goals to develop innovative regions. Implied in these visions is the need to modernise rural communities and accelerate their capacity to adapt to change in order to 'be a part of the future'. There is often little recognition of existing rural knowledge, skills or values in many policy strategies advocating globalisation processes, including

technological and social innovation, as 'inevitable'. The rural backlash of localism and scepticism towards 'outside' science and city-based experts has slowed the implementation of many sustainability and innovation policies. Such reactions are in turn dismissed by many policy makers and urban citizens as irrational 'tide turners' or 'anti-progress luddites', and in more extreme cases as dangerous 'tribal isolationists' who threaten the global development of democratic conditions.

Yet understanding whether such reactions are a valid way of 'thinking globally-acting locally' or asserting agency over destiny, is rarely analysed. It is often implicit that knowledge to underpin the future wellbeing of rural communities will need to be produced rather than harnessed from existing natural, social and cultural asset bases. There is little recognition, let alone assessment, of existing capacity to understand and apply the 'new' concepts of sustainability and innovation, or of the capacity for instrumental knowledge, such as cost-benefit assessment of change. It is not surprising then that ownership of change, so fundamental in democracy, is not perceived generally as a strong feature of change processes underway in rural areas of the world.

Much of the research undertaken into the ownership of technology as 'means to ends' has been based on the premise that in everyday life individuals are capable of adapting and transforming new technologies to serve their needs. The domestication theories of Silverstone and Hirsch (1992), Lie and Sorensen (1996) and others have propagated the widespread view that individuals effectively appropriate the consumption of ICTs within domestic spaces (home) and the community. However, 'speculation' about technologically-influenced social change suggests a need for more empirical investigation of the impact of new pressures on everyday life (Ropke, 2001). The view of society-technology relationships implicit in domestication theories has also been applied to studies of innovation and organisational change, including regional development. In some rural strategies, the dominant role of technology has resulted in 'technological determinism that has given rise to false expectations, wastage of funds and increased scepticism about the real potential' (Grimes, 2000:20).

The study of the role of digital technologies in general change processes is a relatively new area. However, most research follows the same pattern, focussing on the application of ICTs for economic and social networking benefits. In a rural context, these uses include productive efficiencies such as the recording of crop,

stock and climatic change information to serve as data for immediate farm management decisions and longer-term planning. The use of satellite Global Position System (GPS) applies to both information and communication, as does Internet access, for a range of solutions to spatial isolation, including medical services, formal education and local government participation. Projected benefits extend beyond improving yields, budgets and environmental knowledge and these technologies are applied as direct marketing tools for diversification of farming enterprises, including tourism.

Research into regional application of digital technologies has generally explored the role of these technologies in overcoming the time and space limitations of rural places. They include a focus on e-learning and the formation of new communities of interest but rarely with any insight into the effectiveness of learning processes, the outputs of what is learned or on how learning outcomes relate to visions held by policies or communities themselves. Empirically-based studies on the impact of learning for decision making are particularly scarce. In the context of rural change pressures and responsibilities for place, they seem to be non-existent.

This study investigates social-cultural change processes that influence human motivation and ability to take long-term responsibility for shared, sustainable and innovative communities. In doing so, the study is based on perspectives of rural communities themselves in examining possible linkages between perceptions of capacity for ownership of change and the relationship between time-space-place facilitated by digital technologies. It is argued that assumptions about the role of ICTs in enhancing the capacity of communities to achieve desired futures, especially envisioned in policy outcomes of sustainable, democratic and innovative regional development, require a reality check.

### 3.3 The relevance of Tasmania and Norway as case study sites

In order to understand issues about change in a globalised world, the perspectives of two similarly industrialised countries, but with different cultural traditions, have been sought. A spatial dimension suggests a northern hemisphere country, and a temporal dimension an 'old world' country. As a Nordic country, Norway has both dimensions and allows an insight into cultural thinking that is different from the more familiar situation of English-speaking United Kingdom and North America. Both Australia

and Norway have been historically isolated and 'slower' to be swept up in the pace of change occurring in some of their neighbouring locations. Externally and internally, geography has made the 'tyranny of distance' a reinforcing factor, impacting upon socio-cultural-economic views of the world and the pace of change.

Both Australia and Norway have natural resources-based economies, with a reliance upon fossil fuel energy exports. Australia is the world's largest exporter of coal and Norway the second biggest exporter of oil after Saudi Arabia. Both countries are among the top exporters of natural gas and with close to full employment are also among the world's wealthiest nations per capita. Their respective situations suggest that investment in learning and their overall capacity to transform unsustainable lifestyles should be achievable. The conventional theory of sustainable development is that it requires strong economic underpinnings to support change. Norway in particular has played an historical role in international policies for sustainability, with its former Prime Minister Gro Harlem Brundtland chairing the landmark WCED of the UN in 1987. Both countries, however, have been criticised internally and internationally for slow progress on implementing sustainability in recent years.

In terms of achieving quality of life outcomes, both countries are consistently ranked as among the top performers, though Norway scores significantly higher than Australia. According to the United Nations Development Program, for example, Norway has had the highest quality of life of over 170 countries surveyed every year since 2000 (UNDP, 2008). The levels of education, income and life expectancy are among the criteria that place Norway and most other Nordic countries ahead of Australia, and certainly ahead of the two countries that Australian policy-makers most often reference: the UK and USA. All five Nordic countries link quality of life objectives to their concept of the 'welfare state' and the development of 'common fundamental values such as justice, equality, democracy, openness and participation' (Nordic Council of Ministers, 2004).

Yet the ends sought by Norwegians and Australians, and the means they deploy, are remarkably similar. Socially, culturally and politically, both peoples have traditionally seen themselves as applying the principles of equity in decision-making beyond the simple rhetoric of 'freedom'. A *Wall Street Journal* survey of 12 Nobel Prize winners in economics, saw two select Norway as the best economy in the world due to 'sensible use of oil yields (and) policy to create economic welfare and

widespread balance throughout its society' (reported in *Aftenposten*, 13 September 2004).

Although Norwegian tax levels to support the government's role in welfare have moved very close to European averages, Norway has continued to remain independent of the largest economic and political block in its region. In two referenda, Norwegians have rejected membership of the European Union. The resistance is mostly attributed to a view that people will be further isolated from decision making, especially in regard to use of the natural resources, food supplies and welfare standards.

Compared to Australia, the role of government in Norwegian welfare remains high. For example, the majority of political parties in Norway support the savings goal of the national petroleum fund. This 'disciplined' fiscal scheme eclipses the small percentage of royalties and taxes placed in the equivalent 'Future Fund' by the Australian government, despite similarly massive income from exporting minerals. Norway now has the financial reserves to pay for pensions, health and education well into the future while Australians seem to prefer individual tax cuts to collective savings. Meanwhile, despite increased national wealth from natural resources, Australians have become the world's largest private debtors in recent years, with most personal credit related to consumption decisions, resulting in a ratio of personal income to debt of 100:130 (ABC TV, *News*, 2004). The trend in 'lifestyle' spending has defied incentives to overcome a low rate of savings and between 2001-06 personal debt rose 50 percent (ABS, 2006).

As an extension of welfare state principles, Norway's rural areas are relatively wealthier and modernised due to party-consensual policies favouring decentralisation and support for rural and isolated communities (Brox, 2007). The issue of 'food security' is important for Norway as it can only produce half of its food requirements (Almas, 1999). In terms of agriculture generally, however, there are some important similarities between the two countries. Despite Australia being historically one the largest food exporters among developed countries, it has only six percent arable soils. Only 3.5 percent of Norway's land area is cultivated for agriculture, the remainder being insufficiently arable or mountainous. The situation closely resembles mountainous Tasmania. For instance, 23 percent of Norway is productive forest and 33 percent uninhabited land, including crown/state land (such as national parks). In Tasmania, 40 percent is protected and unsettled land, mostly designated wilderness in

mountain areas. The average size of farms in Norway is 16 ha, closer to Tasmania's than the Australian average of 100ha. In both cases, the percentage of the population employed in agriculture is 5 to 10 percent.

Geographically, Norway is peripheral to larger political players in Europe (as Australia is within Asia), with characteristics that create domestic distortions (isolated populations, economic dependencies and the cost of infrastructure), including several clearly distinctive dialects and legislation requiring the use of two national languages ('bokmal' and 'nynorsk'). While its landmass (385, 639 km2, including sub-Arctic islands) is smaller than Australia's (7,692,024 km2, including sub-Antarctic islands), Norway's length (1770 km long, the equivalent of Oslo to Rome) poses similar internal communication challenges. In addition, both countries claim territorial jurisdiction over parts of Antarctica, and operate bases there.

The two countries also share harsh, extreme seasons. Climatically, one third of Norway is above the Arctic circle, comparable to Australia's tropical and arid zones. The population density is low in both countries. Norway's 14 people per km2, is the lowest in Europe after Iceland. The populations are also decentralised in both Norway and Tasmania, where still only one third live in the main city (180,000 out of half million), compared to some Australian states where up to 80 percent live in the capital. Less than half a million of Norway's 4.4 million citizens live in its biggest city, Oslo.

Both nations are relatively young, with Australia coming into being as a Federation in 1901 and Norway achieving independence from union with Sweden in 1905. Norway's recent colonial experiences, physical isolation and strong sense of individual interdependence have been conducive to self-determination in both international and domestic policies. As we have seen, it has consistently voted against membership of the European Union. But, as with Australia, it has traditionally played a leading role in the development of international bodies and agreements, including the establishment of United Nations. However, during the late 1990s and early 2000s, Australian policies diverged from multilateral positions, such as on the Kyoto climate change treaty.

In both Norway and Australia the national identity has been strongly based on democratic traditions, including values of egalitarianism and inconspicuous consumption. This is reflected in much of the literature that helps define both

peoples, although in Australia the issue of national identity seems to constantly require re-visiting the writers of the nation's formative decades, including Henry Lawson, whose father, Niels Larsen, was a Norwegian sailor. With increasingly diverse populations of migrants, both countries have seen occasionally intense debate over national and cultural identity in recent years. Another shared dimension to cultural identity is the continuation of significant indigenous populations living in traditional areas in both countries. Northern Norway is home to over 20,000 Sami people, representing a significant although smaller indigenous population than Australia's 480,000 indigenous people.

Late industrialisation of the economy occurred in both Norway and Tasmania, based on hydro energy development and energy-intensive heavy industries. This coincided with long periods of social democratic government in both societies, and the main party concerned (in each case called the Labour/Labor party) is currently in power. Periods of chronic rural poverty have created welfare dependent populations in some rural areas, including those in the cases selected. Increasing climatic drought conditions in Tasmania has added a new dimension. However, compared to Australia, Norway has pursued 'multifunctional' agricultural policies that have seen more amenity use of rural landscapes as a trade off for higher reliance on government support (Bjorkhaug and Richards, 2008).

Digital technologies are vital tools for the successful transformation of rural communities via policies for sustainability and regional innovation (Forum for the Future, 2005). In both countries, all policies assume that ICT infrastructure will transform rural communities and there is little public debate or critical analysis of this assumption, particularly in Australia. As we have seen, Norway seems to be generally about 2-3 years ahead in the public usage rates of digital technologies in Australia, and possibly further ahead compared to Tasmania. In 2000, only 25 percent of Tasmanian homes had broadband internet connection, rising to 55 percent by 2006, but with only 20 percent in rural areas (ABS, 2006). By comparison, Norway has higher broadband networks into all regions of the country and since 1995 the case study area has successfully pursued a comprehensive strategy to deploy broadband, with household access rising from 33 percent in 2002 to 78 percent only two years later (Skogseid, 2003; SoFF, 2005). Another example is the accelerated use of mobile phones by 10 year olds that grew from 58 to 85 percent between 2003 and 2006 (Forbruker, 2007). The wider extent of Norwegian access to and use of digital technologies provides a useful guide to possible emerging impacts of ICTs within

Tasmanian rural regions. In 2009, the Australian government commenced the roll-out if its $43 billion high-speed National Broadband Network in Tasmania.

There are many other similarities between the Norway and Australia, and particularly Tasmania, and these will be noted and discussed during the study.

### 3.4 Selection of case regions

The factors of time and space are also important in selecting the specific places within which to situate a community study. To explore the impact of ICTs, two rural regions within these small nations, historically isolated from the pace of change in the major cities, would be ideal.

The selection of a rural community was elementary for the Tasmanian case; the Huon Valley is where the author lives. It was more difficult to find an appropriately similar region in Norway. After on-site observations in two regions, the Sogn and Fjordane region in western Norway was selected. The alternative region of Hedmark, in eastern Norway, shares features with the Huon such as forestry, tourism and capital city proximity, but has a less horticultural and geographically defined character than the Sogn and Fjordane.

Both the Huon and the Sogn (the abbreviation that will be mostly used) are traditional agricultural regions close to expanding urban centres with similar pressures and economic changes, especially with increasing tourist and commuting populations. Until recently, both regions have been relatively isolated from urban centres and have formed distinctive identities. Today there is a growing influx of new settlers (especially of older age groups in the Huon case) but a continuing outflow of young people (especially women in the Sogn case).

Both regions have a dominant natural feature that helps define the identity of place and connects people in everyday life: the Huon River (170km) in one instance, and the world's longest fjord, Sognefjord (204 km), in the other. In addition to horticulture, traditional economic activities include timber and fish harvesting, with aquaculture a new industry (although Norwegian expertise was used to establish the industry in Tasmania). The Sogn and the Huon have been well-known tourist destinations since the late nineteenth century, with national parks established in

mountain areas more recently. Additional similarities exist and are outlined in the comparative description of both regions (see Appendix A).

## 3.5 Developing and analysing data

### 3.5.1 Research design

In part, the lack of previous research into the topic and the problems identified by this study make it explorative in nature. There is little guidance in the literature to the variables most relevant to the emerging role and impact of ICTs on the capacity of rural communities to shape their own futures. As there is no clear and agreed theoretical base to apply to the problem, a multi-disciplinary approach will guide the research.

A number of different methods have been applied in responding to the research question. The complexity of the issue makes it important to have data grounded in rural communities and to have its analysis integrated with an extensive consideration of contextual factors. With the focus on the societal processes of communication and knowledge generation, combined with the cross-cultural international context of the study, qualitative methods are most appropriate. An analytical induction approach is followed and contextualisation is emphasised in the phase of interpretation (Denzin and Lincoln, 2005).

There are several reasons for designing this study along such lines. The initial literature review showed a domination of quantitative methods in discussing aspects of how much and how often ICTs are deployed by policies and communities. As the problem addressed is broad and complex, a mainly inductive process will allow consideration of many factors simultaneously, including contextual evidence. Thus, the qualitative strategy follows 'an inquiry process of understanding a social or human problem, based on building a complex, holistic picture' (Creswell, 2003: 2). Applying inductive reasoning will allow assumptions made by theories and policies to be critically analysed, whilst the multidisciplinary and multi-perspectival approach required to solve the research problem means that narrowly prescribed methods could not be deployed.

The aim is to explore what people think about issues such as change, the future and the role of digital technologies. Qualitative interviews with a limited number of actors were chosen in preference to undertaking quantitative research, in part because of difficulties in obtaining a sufficiently large sample of detailed responses in Norway. Several barriers, including language difficulties and logistics, made such a method impractical. However, the necessity for open-ended questions to generate the required insights, together with the opportunity for clarification of responses, made qualitative methods far more effective for this study.

The project deployed various elements of qualitative data collection, case study, and pattern and grounded theory (the latter aspects are discussed in the subsections which follow.) Two separate stages of data collection in both regions provided the opportunity to refine the interaction between the categories, following the injunctions of Strauss and Corbin (1998). Open-ended questions were used and these took respondents from perceptions of community needs and aspirations, through to change processes, and on to issues of concern of the respondents' own choosing. Questions pertaining to technologies were not raised until the final few questions. This allowed critical issues and related factors to be raised by the respondents themselves before any link had been made between social change and the influence of digital technologies.

Fieldwork data collection involved a triangular approach of: (a) semi-structured and open-ended qualitative interviews with key actors (in which all interviews were taped and transcribed); (b) observations in real context (field notes, events and actor interactions), and (c) document analysis (including content analysis and coding).

As an exhaustive literature review at the start of research is only essential for quantitative research (Cresswell, 2003), much of the literature will be discussed as empirical data is collected and analysed. Generating data itself will also need to involve multiple steps.

### 3.5.2 Grounded theory, time periods and patterns

Although the 'grounded theory' approach is mainly used to help generate a theory rather than verify an existing one, it can offer explanations for actual problems It is the latter feature of grounded theory that has been utilised, in part, in this study. In examining the research problem, theories informing key policies for rural change

processes are a starting point and it is important to critically analyse their assumptions about the role of ICTs. However, it is not intended to create any new theory, but rather improve the application of several theories (including those about individual decision-making processes) in policies such as sustainability, innovation and citizenship education. Grounded theory is therefore used only to the extent that categories of information have been continuously generated and linked throughout the data analysis stage in order to identify weaknesses and strengths in the assumptions contained within policies and held by communities themselves.

While it is important to clearly delineate the central research problem, this has to be kept flexible so as to allow new and unanticipated angles to emerge. A problem and its related issues were treated as starting points rather than a set of clear questions. These evolved as data from the 'reality' of the respondents were introduced, becoming part of an increasingly rich and complex information set. Grounded theory allows for multiple stages of data collection and a constant refinement and interaction between the categories (Strauss and Corbin, 1998). The interviews in both study sites were done in two phases, allowing analysis of the first half of each region before completing the entire survey. Data were collected in Norway in late 2004 and late 2005, with the Tasmanian data being collected in mid 2005 and mid 2006.

In following the inductive model of inquiry, a theory may possibly emerge from such data analysis or new patterns of relationships might emerge from the categories that are not necessarily causal (Strass and Corbin, 1998). These emergent patterns can then be compared to those in existing theories and assumptions then challenged if needed.

A second, more focussed review of literature was undertaken once the critical issues and factors had been grounded in the empirical data. This provides a stronger link between discussion of theory and empirical study (see chapter seven). The use of 'pattern theory' focuses attention upon the relationships between concepts and factors most relevant to this study. Emerging patterns between ideas may not be related in a cause-effect way but can give insights into a complexity of linkages that will assist understanding (Creswell, 2003). Focussing on patterns will also allow for clarification about the need for further research into the gaps and issues identified in this study.

### 3.5.3 The case study approach

A case study can focus on detail within patterns. Although such an approach means that the knowledge gained is context bound, it is possible to extend observations beyond the strict bounds of the study region and thus accord wider application to some conclusions. By giving attention to multiple sources of evidence to help better understand the context of the cases, the cases themselves are reinforced. This is a key strength of the case study approach (Yin, 1994).

This research has taken an 'instrumental' view of case studies, where a 'particular case is examined mainly to provide insight into an issue or to redraw a generalisation. The case is of secondary importance, it plays a supportive role, and it facilitates our understanding some something else. The case is still looked at in depth, its contexts scrutinised and its ordinary activities detailed, but all because this helps us pursue the external interest' (Stake, R., 1995: 445).

To build sufficient context for both cases, some additional data will be presented as observations. This forms a key part of the triangulation method for checking the validity and reliability of the information from the respondents in the cases. Observational data includes informal discussions with other members of the Tasmanian community, and in both cases, a single, short, phone-based conversation with a 'potential respondent' who was referred by those already interviewed. They were not included formally because it was assumed (rightly) that their views would be very similar to those referring them.

Context information includes such secondary sources as policy documentation, media reports and trend statistics. In addition, the findings of surveys conducted by organisations directly involved in gauging relevant citizen and consumer attitudes and behaviour are incorporated, including those outside Australia and Norway. A limited amount of 'discourse analysis' of public communication, especially on issues such as ICTs and citizenship responsibilities, is made. (Though it is beyond the scope of this study to pursue such analysis into the relationships between knowledge and power held by various stakeholders in such public exchanges [Foucault, 1972]).

The timing of the second phase of interviews in both regions occurred during election periods; planned in the case of the fixed term Norwegian national elections in 2005, and fortuitously, in the Tasmanian case (where timing of election dates - within four

year parameters in the case of Tasmania's jurisdiction - is the prerogative of the government). In both cases respondents were asked about the level of public debate on key issues, including rural futures, food policies and citizen responsibilities. As the draft of this thesis occurred during the Australian national elections in 2007, observations of this latest public debate have been also been included.

Observations of both regions occurred over the full duration of the study period. Norwegian media websites were accessed regularly, as were those of research institutions and many of the organisations that respondents were connected to (for example, farmer and youth NGOs). In Tasmania, as a resident, a more phenomenological dimension was possible, with informal discussions occurring with a range of community sectors in the course of the researcher's everyday life.

To ensure an understanding of the Norwegian context at the depth of the more familiar Tasmanian one, additional macro evidence has been sourced and more interviews undertaken for the Norwegian case.

### 3.5.4 Selection of interviewees

In each selected region, interviews were held with 12-15 locally prominent people representing a range of organisations in agricultural industries (mainly horticulture and innovation, including growers' associations), local and regional government, youth services, education, media and tourism businesses. Care was taken to match the type and number of organisations in each region, even though the case studies were not primarily concerned with organisations. A determining choice of respondents was, however, that subjects hold managerial positions with responsibilities for significant information transfer, communication or strategic change processes within their communities. This criterion also applied to farmers who are, in effect, responsible for small-medium enterprises (SMEs) and are also members of NGOs.

With 'newcomers' or new settlers a feature of both regions, preference was for respondents who were born in the regions. In fact, most interviewees were long-time residents of the region, often with connections over several generations (especially in Norway). This criterion ensured that respondents' life experiences were largely drawn from life in the local community and that their observations of change

processes were as reliable as possible. Although not openly sought, these factors were discretely confirmed before or during the interviews.

Using a small number of respondents is problematic in any research. However, this has been addressed by selecting people actively engaged in their communities in the fields of information, communication and learning, while at the same time balancing any possible 'professional subjective perspective' they may have on the wider community. Although the respondents could be considered 'opinion shapers' within their communities, they were selected for being in a key position to listen and communicate with a broad range of people in key sectors. Many could also be considered to be 'gatekeepers' for information flow. While it was not intended that the respondents represent all the populations, especially as many had higher levels of formal education and income, they were in positions to understand their communities in general terms.

It was made clear to all respondents that it was as members of their rural communities that their perceptions were sought, rather than as members of a particular organisation, even though such perceptions would hold additional relevance due to their responsibilities within regional organisations, and especially in the handling of information and the processes of communication and learning. During the interviews, respondents were reminded to reflect on perceptions of how other members of their community saw the issues involved, rather than exclusively upon their own personal or organisational insights.

Another criterion for selecting respondents was the need to canvass a broad spectrum of ideas as well as take advantage of the opportunity for in-depth understanding of a strategically significant cohort within the rural population. As result, nearly half the interviewees were selected from two sectors within each case region. The 'agriculture' sector selected was horticulture, reflecting both its traditional role in both regions and the considerable change pressures being exerted upon it. The sector of 'youth services' was selected to gain insights into the responses of young people for whom 'the future' is theirs to create or inherit. The third category of 'others' represented professional educators, communicators (such as journalists) and tourist-focussed hospitality businesses.

Although farmers were identified as the main category of respondents for the industry sector, language and limited access made the selection process in Norway

more dependent upon network 'referrals' than in the Tasmanian case. It was also difficult to achieve an age group balance within both regions, especially as the average age of farmers is increasing. In Norway it was decided to hold more interviews with agricultural advisors to ensure a greater understanding of the overall situation within the industry. These advisors had varied backgrounds and expertise. Although some played a role in facilitating direct contact with some Norwegian farmers, any advice was tailored to the specific requirements of the study.

Due to the ethical complexity of conducting face-to-face research with people under 18 years of age, respondents with organisational responsibilities in local government youth services, education institutions and youth NGOs were utilised, and their observations of children and youth (especially as parents, educators or communicators) were particularly sought. A small number of short, informal discussions with young people also occurred, and the insights obtained have been included in general 'observation' data from the case regions. The use of media articles, documents and statistics concerning children and youth trends also provide information on youth perspectives. Although the study focuses upon change processes, thereby making perceptions of historical changes more relevant, the latter data have been balanced with youth perspectives wherever possible.

All respondents were everyday users of the main digital technologies (mobile or cell phones and personal computers or the internet). However, no respondent was specifically a 'technologist', although several were significant users and promoters of ICT within their work (for example, in networks among farmers or youth organisations). Respondents were asked to focus on their perceptions of how other members of their community saw the issues involved, rather than upon their own personal or organisational perspectives.

Although the ages of the respondents ranged from early 20s to mid 60s, the majority appeared to be between the early 30s to mid 40s, reflecting their positions within organisations. Near equal number of male and female respondents were interviewed, although the balance was not obtained within the two main sectors (agriculture was predominately male and youth services, female). In the 'others' sector, the gender balance between the respondents was achieved. (See Table 3.1 Respondents' Profiles and Data Collection Phases).

**Table 3.1: Respondents' profiles and data collection phases**

| *SECTORS* PHASES | *AGRIC.* STAGE A | *YOUTH* STAGE A | *OTHERS* STAGE A | *AGRIC.* STAGE B | *YOUTH* STAGE B | *OTHERS* STAGE B |
|---|---|---|---|---|---|---|
| NORWAY | 3 | | 3 | 5 | 4 | 4 |
| TASMANIA | 1 | 1 | 3 | 5 | | 2 |
| 20-40 AGE | 2 | 1 | 2 | 2 | 2 | 1 |
| 41-65 AGE | 2 | | 4 | 7 | 2 | 5 |
| MALES | 4 | | 3 | 8 | 2 | 3 |
| FEMALES | | 1 | 3 | 2 | 2 | 3 |

3.5.5 Interview design and process

All interviews in both cases were conducted face-to-face and *in situ* at the respondent's place of work, including on farms. All Norwegian interviews were conducted in English. Background reading and previous visits to Norway helped reduce cross-cultural difficulties in terminology and conceptual deployments. The interviews took between 30 and 60 minutes on average. Respondents were only interviewed once.

The objectives, selection criteria, data collection, verification methods, question structures and a protocol were designed to guide the process. The latter includes consideration of ethical issues and the cultural customs of Norwegians. The protocol developed was applied to all communication with the respondents and the conduct of the interviews, ensuring confidentiality at all stages of the process. In accordance with University of Tasmania ethical procedures, the transcribed tapes were coded and supplied to all respondents for confirmation or modification. An interview guide containing a set of core questions was provided at the stage of recruiting respondents. This covered ethical matters and provided details of the confidentiality and verification processes. (Appendix B constitutes the interview guidance questions that were used to give a degree of common structure to the interviews.)

Interviews were semi-structured with open-ended questions tailored towards the sector in which the respondent was located. This approach allowed for a wide-

ranging expression of issues and concerns. Questions sought to elicit perceptions of attributes of rural place, community needs and aspirations, change processes, and matters of concern of the respondents' own choosing. Issues pertaining to technologies were not raised until the final few questions, unless voluntarily introduced by the respondents earlier. A key question asked respondents whether any of the issues they raised had links to the role of ICTs. They were then asked to gauge the level of general community discussion about the role of digital technologies. This allowed critical issues and related factors to be raised by the respondents themselves before any link had been made between social change and the influence of digital technologies.

Whilst the interview deployed open-ended questions to allow issues and factors to emerge, at the verification stage a small number of propositions (concerning the current situation, causes, solutions and possible models for future strategies) were offered to seek a more focussed response to certain elements deemed critical to the study. This provided more empirical data for analysis.

As we have seen, interviewees were mostly in managerial positions and their organisations often provided input to internal and external stakeholders participating in the processes of visioning, learning and decision-making. They included those in local and regional government, agricultural industries (horticulture and innovation), education, communication services, tourism, media and youth services. However, the interviews sought perceptions and experiences of respondents as members of their communities, rather than as representatives of their organisation or sectoral group.

### 3.5.6 Triangulation and macro-level evidence

It has been noted that several methods have been deployed in this research. Triangulation, which converges a mix of different types of data, assists in ensuring a comprehensive analysis of the research problem and verification of the validity of findings (Creswell, 2003). It is achieved here by using a mix of elements from case study design, qualitative empirical analysis and grounded theory. The limited number of in-depth interviews (30) in the case study component of the study allows for more data from other sources (such as observations, media and statistics) to be used in building an accurate contextual picture. Discussion with researchers in Norway and other Nordic countries have also been included to clarify the case study findings and ensure more general relevance.

The transnational aspect of the research made establishing context essential, and findings from other, similar studies have been integrated in the analysis. The researcher has a personal familiarity with Tasmania as a resident and, to a lesser degree, Norway, as a frequent visitor over two decades, including a period of temporary residence in the mid 1990s.

Literature, research and document analysis involved examining the prerequisites, expected outcomes and assumptions within relevant theory and policy applications, particularly as they apply to sustainability and learning economy/regional innovation systems. These sources of data helped inform the questions for the micro-level research.

The empirical data obtained at the regional case level were then verified against as wide a range of factors as possible. These included wider national observations, documents and statistical data (including on participation in different social-political events, organisations, decision-making and uptake and usage of digital technologies).

The use of wider contexts and multiple levels of analysis helped build patterns and a broader picture. For example, relationships between regional innovation strategies and global pressures, such as free market trade policies in agriculture and telecommunications, imply an expanded capacity for communities to achieve their preferred futures. The research undertaken yields evidence that enables an assessment to be made of the validity of the implied link.

The cases are not intended to be truly comparative. However, similarities and differences between the two regions, and within actor groups, help explain the degree of importance of various factors. In explaining how these factors interact in each case, and within their wider context, the relevance of the findings beyond their Australian and Norwegian contexts can be suggested.

### 3.5.7 Limitations and comparisons

Neither the data pertinent to the two sectors of agriculture and youth nor to the age and gender categories are intended for comparison. Respondents were not selected to statistically represent different groups or the general public. The small but wide sample is not a representative description of a whole community's attitudes or actions.

Given the managerial positions and type of organisations involved, it is possible that the interviewees come from similar professional or social networks. Such integration is a feature of small communities where interests overlap more often that in urban situations. Many respondents, however, are engaged in professional networks beyond the geographical space of place. In order to focus on the change dynamics within rural communities, the sample from the farming sector has an over-representation of innovators. Language difficulties in the case of Norway made it necessary to rely slightly more on advisors within the government or NGO sector than was the situation in Tasmania.

Care was taken to ensure that language and cultural misunderstandings regarding use of concepts and ideas was minimised in the case of Norway. Conceptual understanding can differ across cultures and institutional surroundings can also affect perceptions. The complexity of cultural comparisons will limit the generalisations possible from this study.

No one approached to be interviewed was hostile to the nature of the research. Only two potential respondents declined to participate in each case due to concerns of commercial interest (Tasmania) and language (Norway). Shortened interviews over the telephone occurred with one person in each case, although the data were not formally recorded and included in the results.

The presentation of combined data from the Tasmanian and Norwegian cases follows in the next two chapters. Using aspects of both case study and grounded theory, the data are categorised into features that will ensure further conceptual development of the themes explored in this study. By analysing theses categories for compatibility, significant similarities will then be related to broader contextual evidence and existing explanations in later chapters.

# CHAPTER 4 : CASE STUDY FINDINGS: CHANGES IN THINKING, ACTIONS AND CONDITIONS

## 4.1 Introduction

This chapter analyses the empirical data from the case study respondents in Tasmania and Norway in order to identify factors in rural capacity to manage change. It begins by exploring the preferred end outcomes that motivate rural communities to stay, engage and be concerned for place. The common needs that place satisfy are described as characteristics of quality of life with particular attention upon relationships people have with the human and natural elements that contribute to assets.

The chapter then looks at perceptions of change in terms of relationships with place, especially changes in community thinking and acting about needs. While respondents are generally satisfied and have positive views about how place meets their needs, attention is focussed upon any concerns they may have about trends in communal responsibility for the future of place. This focus provides insight to emerging 'attitude-action' gaps in community decision-making.

As the data have been obtained from open-ended questions, a degree of complexity has been generated, and it was deemed advisable to deploy tables to show the relationships between factors.

## 4.2 Qualities of rural places and motivations for living there

Policies directed at improving the long-term sustainability of rural communities must be based on assumptions about the factors that motivate citizens to remain in such places. However, such assumptions are rarely made explict. A common policy assumption is that economic livelihood is the 'end' that dominates motivation. Most public dialogue focuses on economic issues rather than articulation of needs related to wider social, natural and cultural, or even spiritual, dimensions of place. While there are often circumstances that constrain the options of mobility and choice of location (such as inheriting a farm or extreme rural poverty), in most situations rural people have chosen to reside in their area.

Regarding the capacity of rural communities to understand and manage externally-driven change processes, it is important to begin at the 'end' – the goals and outcomes sought by the communities themselves. An examination of the motivating factors for Tasmanian and Norwegian rural communities provides indicators of 'means to ends' that can be used to gauge the extent to which change is compatible with the needs and preferred futures of rural communities.

The perception of the respondents is that people stay in rural areas as long as it is economically possible to do so. Their motivation is the existence of a better 'quality of life', defined by the overall well-being of individuals supported by social relationships in the physical space in which they live, rather than satisfaction obtained by extending beyond local/regional networks. The view is summed up by a farmer from Tasmania: 'It's about lifestyle, a comfortable place...It's what we know' (Farmer A, Huon).

Respondents identified several characteristics of rural life that they value and aspire to maintain. These 'ends' are, in effect, the personal and community level 'visions' of preferred futures. They see their aspirations as being satisfied by rural places and also by the existence of assets that provide supportive conditions. This relationship between personal needs and place assets can be categorised as ends (outcomes sought in human development) and means (enabling conditions) as discussed in chapter two. Together they define quality of life indicators. The relationships between place-based needs and assets are outlined in Table 4.1

The assets valued by communities are mainly human, social, natural and cultural. Financial assets were not prominent (possibly indicating low economic returns from agriculture in particular) and there were only indirect references made to political assets, such as cooperation (possibly due to the presence of conflicts, particularly in Norway). Although concepts such as freedom are not directly referred to by interviewees, others such as security are. The data show how personal needs and community assets are connected in reinforcing mutual loops, with a reliance on communal conditions to provide belonging, identity and trust.

**Table 4.1: Place attributes and relationships between needs and assets as outcomes sought by respondents**

| NEEDS | ASSET FACTORS | EXEMPLIFYING QUOTES |
|---|---|---|
| Survival and Security | Natural (water, food, quiet, peace)<br><br>Social (caring, safety and trust)<br><br>Financial (income, shelter) | 'Climatically, it's still probably the best place to grow fruit in because it avoids extremes. It's a good climate for small fruits too' (Agricultural advisor, Huon).<br><br>'It's been a reasonable living in the orchards but that's changing. It's a good place to grow up, good lifestyle, just a great place to live' (Farmer B, Huon).<br><br>'Having a family, then you look more for maybe the roots. Living out in the rural areas a lot of things are cheaper, it's more easy and safer for the children. One of the most important things for us was to have a nice environment for the children to grow up in' (Farmer B, Sogn).<br><br>'Traditionally, most people think it's better for young people to grow up in rural areas. Less crime, less traffic and safer for children. (Agricultural advisor B, Sogn).<br><br>'It's perceived to be a safe place for families to grow. We don't have a lot of crime. There is a strong community spirit and people look after their neighbours compared to the city. A lot of families are moving away from urban environments to bring up their children. They gain more with social relationships in a rural environment' (Youth advisor, Huon).<br><br>'The trend is families with small children don't want to live in the cities. They want to buy a piece of a farm, a cow, a horse, more space, nature and quiet. But they don't want to move apart from the cities, maybe one or two hours away' (Agricultural advisor C, Sogn). |

**Table 4.1: Continued**

| NEEDS | ASSET FACTORS | EXEMPLIFYING QUOTES |
|---|---|---|
| Identity and Belonging | Social (recognition, influence, sharing experiences)<br><br>Cultural (heritage, cooperation)<br><br>Natural (landscape) | 'You can say hello to everyone and usually get a friendly response. If someone is in trouble people will help' (Communicator, Huon).<br><br>'In rural districts, people are more concerned about each other. Close personal contact helps create identity' (Agricultural advisor C, Sogn).<br><br>'I returned to the district because my identity is here...We who are living in the districts are more interested in the culture aspects. In the cities people are more international. We also travel a lot and have high grades of education (but) we have decided to live here because we are also interested in our roots and to maintain the traditional history and so on. We are also global but city people are more interested in being a part of the global system' (Agricultural advisor D, Sogn).<br><br>'Now its very common for youngsters to go and study abroad but most are coming back to Norway as the roots are very strong. We have a very strong family tradition in Norway and many have a focus on where they are coming from' (Agricultural advisor A, Sogn).<br><br>'It's pretty hard to throw away all that history and hard work. I suppose I feel guilty that the three generations prior to me put all the effort in. If you're looking just purely financial reality we probably would have given up long ago if we didn't have an attachment to the business and the area' (Farmer C, Huon).<br><br>'Young people from small communities also have the knowledge about how to communicate with younger and older people and not just their own age group' (Youth advisor A, Sogn).<br><br>'How a community survives does not depend so much on material resources but on how people think, the processes between people and how they think about the future and the way of cooperation' (Farmer A, Sogn).<br><br>'Youth grow up in a community with 200 citizens, move to Bergen then Oslo. Then Oslo gets too small, so they move to London, then New York. But you can also see some who move to the city to discover that their identity is back in the agriculture districts. It's not only about agriculture identity. It's a lot about the whole environment, the people. You know most people and you don't have to identify yourself in the shop or bank. It's lot of things. Maybe the nature is the important thing. Agriculture is needed to keep the nature, the environment and people' (Agricultural advisor C, Sogn). |

**Table 4.1: Continued**

| NEEDS | ASSET FACTORS | EXEMPLIFYING QUOTES |
|---|---|---|
| Participation Creativity (including recreation) and Freedom | Human (work ethics, learning)<br><br>Cultural (lifestyle diversity, recreation)<br><br>Natural (landscape, outdoor experiences) | 'I think it's the lifestyle here. I know I'm biased but it's 'God's own country'. It's quite comfortable' (Regional Representative, Huon).<br><br>'People here still want to live scattered because there is quality of life here...We are a very open society. All communities have local sports clubs, lots of ways to use nature, which is very important' (Agricultural advisor A, Sogn).<br><br>'Lifestyle, tradition...many people like it instead of going to town. Mountains here, lots of things to do, all activities combined with work on the farm where you can do want you want. Freedom is important' (Innovator, Sogn).<br><br>'People do a lot of thinking because farmers are working mostly alone' (Youth advisor A, Sogn).<br><br>'The most important resources for this new economy are what you already have; natural resources and people, especially for cooperating' (Farmer A, Sogn).<br><br>'I'm willing to have a lower income to stay here because I see all the values that surround me; the nature, to have family around. But in the cities you only have talk about the income, how much you earn, only the material things. It's so stressing. Traffic, time schedule and everything. That's also a reason to come back here. Everything is much slower. We are also busy but it's not the same stress as you experience in the city. Many people see the most important values are to have more time with family. When you come home you feel like you should have been in the office still more hours. The gap between the family gets greater and greater. Suddenly you wake up and say that's not the way you want to live your life' (Agricultural advisor D, Sogn).<br><br>'Young people I deal with generally think the Huon has something to offer and are pretty positive' (Regional Representative, Huon). |

The results in both cases show strong social and landscape linkages in the relationships that are offered by rural places. The quality of life indicators include the sense of identity, belonging, trust and security gained from the physical presence of people and elements of the place (including space, respect for privacy and peace). These 'higher level' needs that are identified as priorities are related to other factors

emerging from case data. It is interesting to note that the widespread policy reference to 'standard of living' was absent from all respondents' discussion of motivations. The long-term 'demand pull' of rural places appears to be less related to economic attributes than social, natural and cultural factors.

While all of these assets are important economically, what induces a rural community to see its place as a 'home' is not appropriation of its assets for simply utilitarian purposes. 'My identity is here, very connected with family...but less income...that's a compromise', an agricultural advisor from Norway observed.

The following table (4.2) summarises the most valued categories of needs and assets of rural places and shows how there is only mild variation in the responses given in the two cases. It indicates very similar perceptions of the outcomes (or 'ends') sought by living in rural areas in both countries, and no factor registered 'weakly'. However, Sogn respondents show a stronger valuing of regional assets.

**Table 4.2: Summary of case variations in perceived main qualities of place**

| NEEDS SATISFACTION | HUON | SOGN |
|---|---|---|
| Safety | ● | ● |
| Trust | ● | ● |
| Identity (including recognition of role/s) | - | ● |
| Belonging (familiarity with people and nature) | ● | ● |
| ASSETS (SUPPORTIVE CONDITIONS) | | |
| Communal cooperation | - | ● |
| Heritage (cultural and natural) | - | ● |
| Shared values | - | ● |
| Natural resources (production and recreation) | ● | - |

Weight of values given by respondents is indicated by: ● strong ; - medium ; o weak

In both cases, a strong sense of community was evident. Rather than the 'fierce independence' that is often associated with rural life, it is inter-dependency that is the element motivating people to stay in rural places. This particular 'demand pull' is an opposite force to the economic and technological 'supply-push' that characterises current pressures for change and innovation, including socially. The view that digital technologies will help build a strong sense of community might be ignoring the fact that it already exists.

In terms of looking to future outcomes, qualities of rural life are best summed up by the strong perception that rural places are preferred environments for the raising of children. The migration of new settlers to rural regions in both the Norwegian and Tasmanian case studies is also linked to perceived 'quality of life' attributes of rural landscapes and people. It is a view summed up by a Tasmanian youth convenor: 'the value of social relationships has become more widely recognised, especially by young families moving here'.

To conclude the findings about preferred 'ends', the following table (4.3) shows how the place attributes identified by respondents can be connected to the factors of time and space. Data analysis indicates close linkage, although most respondents did not directly make direct reference to these two factors, nor were they mentioned by the interviewer.

**Table 4.3: Interrelations between qualities of rural place and the factors of time and space**

| | |
|---|---|
| TIME | • Slower pace of life (compared to urban areas)<br>• Work-life balance able to be achieved<br>• Less stress (in everyday 'busy-ness')<br>• Opportunities for thinking<br>• Memory (of people and place)<br>• Better for child development<br>• Face-to-face communication opportunities |
| SPACE | • Private space (solitude opportunity)<br>• Privacy respected (trust and security)<br>• Quiet and peaceful conditions<br>• Public space (face-face social interactions)<br>• Outdoor accessibility (work and recreation)<br>• Lifestyle options (variety) |

In regards to communication and information attributes of place, such exchanges for both social and practical purposes utilised local networking based on 'face-to-face' experiences. This was considered effective, friendly, open and across all generations.

### 4.3 Changes in relationships to place

Having established the outcomes sought by rural communities it is important to examine their perceptions about how these are changing, historically. Again this will be done in terms of ends and means, ways of thinking and acting, especially in regard to relationships that underpin the quality of life outcomes identified in the previous

section. Insight is sought into changes in the relationships between needs (as ends) and assets (as means).

Respondents were asked about community perceptions of change over the previous decade in the context of the desirable place characteristics that support their needs into the future. Tasmanian and Norwegian respondents reported many positive developments - such as increased diversity of economic opportunities and ideas, learning opportunities, mobility and tourism. An example is 'good to get outside views' to overcome traditional limitations and to benefit from increased cultural diversity and dynamism in ideas and information exchange. The complexity of change in 'cultures' and world views is indicated by the following comments.

> 'In the smaller community that's more isolated, people have a very strong sense of community, so they tend to be more welcoming and accepting of change because of necessity. In one larger community, there's a high intolerance to anything diverse or different to what has been traditionally the norm. The young people then pick up on those values. We're working with young people to be more accepting and non-judgemental about others as it impacts on their relationships' (Huon, Youth Advisor).

> 'Rural communities are big enough to have a lot of different cultures and levels of interests and complex system of how people are influenced and networks. We were very successful until a certain level when we started creating new businesses and activities, which threaten big enterprises, private and state. Some people inside lost influence, so instead of the whole community gaining it got more important to stop change. Problem now in the western world is that to develop a sustainable community you have to do it in different ways than fifty years ago with a big project and fixed future....People who make problems and stop good initiatives are the same people who cry the most that there is no development. They only see as far as the other wall of the valley. They don't understand they are just "experts" in their small worlds' (Sogn, Farmer A).

However, when asked about perceived changes in broad community thinking and acting related to motivations to engage in the 'community of place', there was considerable concern expressed. In both cases, the view was that people generally were becoming more oriented around individual interests and that their identity was shifting steadily away from traditional and shared experiences. These new motives

were adding to pressures on the capacity of communities to maintain, or even improve each category of supportive assets, especially social and cultural.

Trends in changed perceptions of needs were seen as adversely affecting the conditions that underpin the advantages of the region. Table 4.4 shows the perceived changes in community views of needs in relation to place-based assets. The changes in relationships to place have been categorised into needs for human and social development, as in the first table. They are also analysed for newly emerged factors that distinguish recent trends from earlier periods of adjustment and rural changes. (Both regions, especially Tasmania's Huon Valley, have seen dramatic declines in horticultural employment since the 1960s). Although somewhat ambiguous, the trends towards non-engagement remain of concern to respondents. Such concerns are significant as historically favourable economic conditions currently exist in both case regions and this might be expected to conduce to more active participation in shaping regional futures. Most prominent among these concerns is the perceived decline in interest by the wider community in the future of agriculture (domestic food security) and the maintenance of natural assets (including landscape). Such concerns were especially strong in Tasmania, as reflected in one farmer's comment: 'some people think agriculture will be here forever and a day. It's taken for granted'.

In both cases there is a clear change in perceptions of needs. Respondents reported far more 'competitiveness' in pursuit of individual needs and security of income. A rapid expansion of 'needs' for more and varied goods and services was noted, with heightened consumer aspirations placing unexpected expenditure pressures on households, despite relatively good economic circumstances. This appears to weaken the level of participation in community activities, especially those that have relied upon support of volunteers, such as sport and service clubs. A growing 'work-life' imbalance together with diversified interests has resulted in less physical engagement with, and input to, traditional social and cultural assets that have defined the quality of life factors attributed to the region.

**Table 4.4: Changes in relationships between needs and assets**

| CHANGES IN NEEDS | IMPACTS ON ASSETS | EXEMPLIFYING QUOTES |
|---|---|---|
| Survival and Security | Natural (declining support for food growing advantages)<br><br>Social (increasing materialism and individualism)<br><br>Financial (declining interest in working on farms) | 'Materialism is the major driving force on peoples' focus on their economic well-being' (Farmer A, Huon).<br><br>'I think that we have that much money, that money concerns us a lot more. We think more about it' (Agricultural advisor C, Sogn).<br><br>'Consumers generally don't understand the pressures on the food sector and I don't think they care. People say they care but what they say and what they do are two completely different things. Surveys show they prefer local products but they buy on price. It's hip pocket nerve. Now they have two cars, every home now has three TVs, computers, and computer games. None of these pressures were on us when we were growing up. People try to save wherever they can so they save on food' (Farmer B, Huon).<br><br>'We notice an increase in competition between individuals. The cooperative path seems to be too difficult for growers to go down. They see it as too risky, a threat to their own business...some levels of independence will be sacrificed' (Agricultural advisor, Huon).<br><br>'People are getting richer in Norway, more money in their hands and this is also reflecting that they are thinking much more about themselves now. More individualistic. From my point of view, it is very dangerous because we've had a very democratic society. Of course we don't have all the people equal but now it's starting to get very rich people in Norway and we're getting a lot of poor people. Ten years ago we didn't have that much of a gap between people' (Agricultural advisor A, Sogn).<br><br>'Generally, kids in the Huon are reasonably well balanced when it comes to materialism. There's a higher level of clothes consciousness than in my youth, but it's more balanced than in the city. At the same time, most are working towards a career earning as much as their peers in the cities. Farms are not seen as a pathway to financial security' (Farmer A, Huon).<br><br>'The fruit industry has always been semi-cooperative... Society is going in a more individualistic way, people going more their own way and that's a problem. Economic pressures are driving them' (Regional Representative, Huon).<br><br>'We have an extreme focus on cheap food by the media. People don't see the consequences. They want money to spend on themselves, free time and houses. It's a big change...It's kind of American dreaming. It's a combination of the media, films and travelling abroad to other countries' (Farmer C, Sogn).<br><br>'There's a lack of opportunities for employment choice. Young people sometimes have an unrealistic expectation of a job. They now want the high wages but not necessarily have to work towards it. I think a whole different world is being created around mobile phones and stuff like that. Everything's 'push button' and instant gratification. So a lot of young people are losing the traditional country value of working hard to achieve' (Youth Advisor, Huon). |

**Table 4.4: Continued**

| CHANGES IN NEEDS | IMPACTS ON ASSETS | EXEMPLIFYING QUOTES |
|---|---|---|
| | | We have no confidence that Australian consumers would support local fruit because they haven't with anything else... Australians now have such high expectations of standard of living, so they're spending it on flat TV screens, flash cars, huge houses and food is less of an issue... In all industries there are shortages of good qualified people but they all want to live in a $0.5 m house with everything that opens and shuts and an expensive car. The expectation of the average Australian, their standard of living is too high (Farmer C, Huon).<br><br>'I think the media has conditioned people to want cheap food' (Agricultural advisor C, Sogn). |
| Identity and Belonging | Social (less recognition and face-face interactions)<br><br>Cultural (less shared values and heritage) | 'Problem with Australia is that we're only one generation away from being dirt poor. A lot of people think of their grandparents living on the smell of an oil rag, on a small farm, working for someone on a bigger farm. So a lot of people think rural Australia is where they don't want to be. So our primary industries have this stigma attached. They are not held in high regard. We haven't got the history' (Regional Representative, Huon).<br><br>'Most young people don't want to stay on the farm. They want to go into the towns and experience something different and exciting. Its pressure made by the TV and magazines. They think it's a better life...What has changed the most is that the girls are going more. Its to do with job situation, small farms have only one income, and of course its image, an idea of a more interesting life...Its important to have more money, for travel, cars and clothes. To be successful; you have to have these things. You have to go on expensive holidays, buy the right clothes' (Youth advisor A, Sogn).<br><br>'Younger people, and those who have come here from outside, more readily accept change. People in traditional farming industries have a very different perception of how the community is changing. There's fear and insecurity that these industries maybe lost and big farms cut up and sold into blocks. Especially the older generation may feel their sense of history is being lost. Change is happening so fast and there's no formal processes or body that addresses it' (Youth advisor, Huon).<br><br>'The trend is that less young people are picking up sports. Even footy teams struggle to make up the numbers. I don't think it's the same sense of belonging to the community as their parents had. There are so many other things for the children and parents to do. Plus most families now have two working parents. They do things with their families but not necessarily in controlled sports. They'll go to the gym as individuals' (Regional Representative, Huon).<br><br>'There are more commuters in the district with more occupations not focussed here. It tends to lead to a suburban culture where there's less engagement in community activity. People are conscious of not identifying more closely with the district. Most have a work community elsewhere and that takes the place of engaging in the local community' (Farmer A, Huon). |

**Table 4.4: Continued**

| CHANGES IN NEEDS | IMPACTS ON ASSETS | EXEMPLIFYING QUOTES |
|---|---|---|
| | | 'I think our sense of community is being lost a little. People go to less meetings because they don't have enough time. A lot of families travel further to work. Some traditional community service organizations, like APEX, have folded, leaving everybody to themselves' (Youth Advisor, Huon).<br><br>'People here see this industry as an employer first and foremost. Supermarkets would sell just as many apples from China in Huonville if they were available...The community knows it (industry) is probably going to disappear and I reckon as a whole the community is not too worried. You don't get a lot of young people looking for careers in the industry...In a place like Germany, it's almost like they look at farmers as being carers of the land. Maybe because the cities are so much bigger, the land and space is more appreciated. The average person there seems to be a lot more conscious of their health, going mountain climbing and bike riding...whereas Australia has one of the worse childhood obesities. We haven't clicked into that culture thing yet. Here our kids do less outside things...definitely not spending time in the hills and on the river as they did in the past' (Farmer C, Huon).<br><br>'Young people want a lot of choices, so they can pick what they want to do. It's the same with food choices' (Agricultural advisor F, Sogn). |
| Participation Creativity (including recreation) and Freedom | Human (less interest in physical work, ambiguous learning effort)<br><br>Cultural (lifestyle diversity, recreation)<br><br>Natural (fewer outdoor experiences) | 'It's a bit harder to get people onto committees than it use to be. Even though there is strong community interest at the outset, the number of people willing to volunteer at the operational level boils down to a handful' (Farmer A, Huon).<br><br>'My impression is that a lot of young people make early plans about how to become rich. The media focuses a lot on people who are rich. They are in the newspapers every day, so many young people want to be rich or famous. There are 17-18 year olds who don't want to start studying but start working because they want to earn money and get rich. They have this picture in the head that it is just to get a clever idea, start working and it will happen really fast. Because that's the story you hear about in the media. Millionaires in a couple of years. But the focus on the hard work is missing. The focus is on the money...the physical work is not popular. That's farming and also fishing where you can earn a lot of money' (Agricultural advisor C, Sogn).<br><br>'A lot of recreation by youth has become individual or small group and away from traditional sport. It's also away from physical to more computer-based recreation. Its driven by the kids and also the media adds to peer pressure. I think a lot of young people now live in a material world. TV is all about how to fix your house, buy a new car. Young get more focussed on what material possessions they can acquire. When we were growing up we made our own fun. I guess in a community environment we entertained ourselves, going out into the bush for hours, riding or walking. There's less outdoor activity now, probably because of transport' (Youth Advisor, Huon). |

**Table 4.4: Continued**

| CHANGES IN NEEDS | IMPACTS ON ASSETS | EXEMPLIFYING QUOTES |
|---|---|---|
| | | 'We didn't have to worry about being fit at 13 years because you were on the move all the time. Lucky to be on the farm, walking somewhere, chasing cattle. Today, kids often wait for a car to take them somewhere...I don't think young people want to do the physical work involved in farming, especially outdoors, picking. We're all to blame because we try to make it easier for our children and I think generally society has probably gone too far and made it a little too easy' (Regional Representative, Huon).<br><br>'There are not enough inspiring examples of the new economy in rural areas for young people. In transition now. On TV a few years ago the urbanism ideology of drinking coffee latte in Oslo was the big thing and money is the talk of the world. The idea is that the future is going to be just something with your money and you get rich' (Farmer A, Sogn).<br><br>'There's a lack of opportunities for employment choice. Young people sometimes have an unrealistic expectation of a job. They now want the high wages but not necessarily have to work towards it. I think a whole different world is being created around mobile phones and stuff like that. Everything's 'push button' and instant gratification. So a lot of young people are losing the traditional country value of working hard to achieve (Youth advisor, Huon).<br><br>'Supermarkets tell us that consumers want a product that's in a container, they can lift the lid and eat it. We don't want to get our hands dirty anymore peeling an apple or scrubbing a spud. Those days are gone. Time is for other things. There are a lot of DVDs out there to watch...With the money consumers save they're buying this huge big screen they put on the wall with surround sound so they can spend more leisure time watching the latest movie, playing the latest video game. Before, Mum and the kids would have prepared food. Kids gone outside, kicking a ball around, gone bushwalking. But it's all changing. People are too busy to communicate with people now. They probably work longer hours and want to have their entertainment at home' (Farmer B, Huon). |
| Hope and vision for the future | Political (declining influence and ownership of change goals)<br><br>Human (stressed courage and willingness for continuous improvement) | 'Realistically, so many people have competing pressures in their daily lives that to ask them to think forward about their future, when in the media our future is so grim and all bad news. It's not part of our culture, especially Anglo-Saxon, to think ahead, apart from what's happening next week or a year's time' (Youth advisor, Huon).<br><br>'Sometimes it feels like the community and the government is not happy to have us...we've given ourselves every chance, travelled the world to pick up the ideas and to learn the skills needed. We've been reasonably successful in adopting those. But it feels like you can do all the things we've got control over and it's still not enough... the grower gets only four percent of the price paid by the consumer. From the farm gate to the consumer there's been zero efficiency gain, zero cost reduction...we subscribe to the idea that we've got to be continuing improving. If we're not doing it better, cheaper, more efficiently tomorrow we are not going to survive. But we feel like the whole chain needs to be involved. It can't just be at the producer end...pessimism in the industry is affecting how people see where the future might lie. |

**Table 4.4: Continued**

| CHANGES IN NEEDS | IMPACTS ON ASSETS | EXEMPLIFYING QUOTES |
|---|---|---|
| | | We've been initiating actions for 10 years and we don't seem to be getting anywhere. I think everyone is getting tired, everyone's burning out and probably think it's inevitable that the industry will disappear' (Farmer C, Huon).<br><br>'For politicians, four years is a long time...Generally, I think Norwegian people have become more selfish during the last years. Politicians are speaking to individual people and each individual should decide more for their own life and shouldn't be so socialistic, so to speak. It's a trend coming externally...Most young people don't believe what the politicians are saying. They are very sceptical. After the elections they see what they've promised is not coming true' (Agricultural advisor B, Sogn).<br><br>'Young people are losing their identity in the community. A lot of community committees are older and they have icons from a long time ago, pioneers. So young people understand its history but they are not in anyway connected to that history. The problem is that in many processes, young people are not consulted so they lose the sense of being connected to the community. They are interested in more immediate history and facilities than heritage...Trust, ...I think it's a generational thing, where young people won't necessarily trust older people because they don't always tell the truth. There's a lot of historical stuff around trust...Due to the broader community often having a negative perception of them, maybe based on fear, young people are experiencing a whole range of disconnection with their community' (Youth advisor, Huon).<br><br>'The apple industry, except for those involved, really has no huge significance in the Huon anymore. Even in the industry, some don't want to get a debate going, fearful about the banks or think if it's too tough, we'll quit, retire....Europeans have experiences of food crisis and know about scarcity and health worries. Australians are generally complacent' (Farmer B, Huon).<br><br>'Farmers are getting older and there's no one coming in behind them. It's not economically viable. I'm not sure where we are going to end up in ten years time. Food security hasn't come up in debate yet...We're led to believe that somehow our product is not cheap enough, so they buy imports...The idea is that food can be moved everywhere...If something does hit the fan you want to be able to grow your own veggies, eggs, maybe some milk. Now it's all disappearing. We just go to the supermarkets. Society's done that but I'm sure it's because a lot of people don't work to produce something. It's all service' (Regional Representative, Huon). |

Other respondent concerns relate to issues that constitute long-standing anxieties in rural communities, especially youth migration to cities for education and career opportunities. However, a new context of progressively increasing expectations and lower satisfaction with rural opportunities appears to be emerging. Despite improvements in services, rural youth seem to be seeking broader entertainment

options and more social diversity. This is particularly so for well educated girls, a trend especially noticeable in Norway, where many now aspire to live in 'international cities'. Also evident is a decreasing interest in agricultural work, especially in Tasmania.

The following table (4.5) summarises the perceived changes in needs and assets of rural places that are of concern to respondents. There is only mild variation in the responses given in the two cases, indicating very similar perceptions of the direction of change in rural areas. However, overall the Tasmanian respondents perceived a greater decline in community concern for food growing assets and heritage.

**Table 4.5: Summary of case variations in perceived changes in motivation towards place**

| CHANGES IN NEEDS | HUON | SOGN |
|---|---|---|
| More individualism and competitiveness | ● | ● |
| More focus on expanding consumption | ● | ● |
| Less place-based identity | ● | - |
| Less sharing of experiences | ● | ● |
| CHANGES IN ASSETS (SUPPORTIVE CONDITIONS) | | |
| Less communal cooperation | ● | - |
| Less knowledge of heritage (cultural and natural) | ● | - |
| Weakening of shared values | ● | ● |
| Natural resources assets taken for granted | ● | ● |
| Less public debate on future of agriculture | ● | - |

Weight of issues given by respondents is indicated by: ● strong ; - medium ; o weak

## 4.4 Changes in capacity for communal decision-making about place and its future character

As indicated in the previous section, the main concerns of most interviewees are the perceived growth in individualised 'needs'(with private consumption having greater priority than citizenship activities) and the erosion of 'community spirit' (particularly in the form of shared identity with place). There is a decline in shared responsibility for place (especially natural and cultural assets) and a shift in the locus

of control away from the community, with a concomitant loss of confidence in the collective capacity to determine ends and means.

It is important to consider a community's capacity to understand the interdependencies between individual needs and collective assets. These ends and means influence decision-making about place. Yet 'capacity' is not a simple concept as it involves both internal competencies and external conditions. These both relate to motivations, abilities and opportunities. An analysis of changes in capacity to develop community responsibility for the future of rural place is summarised in Table 4. 7. The key points are discussed as below:

*Motivations*

Respondents report an increase in the 'individualisation' of rights and responsibilities and a declining orientation towards 'sharing' and 'communality', and this appears to relate to the setting of shorter-term goals. One farmer in Tasmania commented: "fast food, mobile phones, computers...you can do everything at 3,000 miles per hour...but the public generally doesn't know the situation with our primary industry". This correlates with increased adoption of urban lifestyles and consumption patterns of less cautionary spending (e.g. large 'home entertainment' technologies) and saving (e.g. increased personal debt). "There's a trend in community expectations....some demand everything", said an agricultural innovator from Tasmania. Similar changes in motivation also have an observed impact in Norway: 'some have left this area both physically and mentally' (Agricultural advisor D, Sogn).

In both cases, official visions for the future of the regions exist, but were not mentioned by the overwhelming majority of interviewees. The Tasmania Together vision for 2020 is particularly significant, as its goals and benchmarks for the measurement of progress were the result of extensive community consultation in 2000. Such an absence of longer-term regional visions in public debates may be linked to the increased preoccupation with immediate problems and an infatuation with information that is highlighted as 'new'. The reported low level of concern about the future of traditional activities could also be linked to a high level of optimism that solutions to problems will be relatively 'easy' to find, reflecting a strong faith in scientific/technological progress.

*Abilities*

Limited knowledge and skills for assessing costs and benefits (when faced with choices) may related to confusion over complex conceptual information and the complexity of the economic system. Increasing preference for simpler, easier to understand and faster answers and solutions is evident in both everyday life choices and political decisions. Local knowledge and an understanding of local issues appears to be overwhelmed by national/global information. According to one Norwegian farmer: "there's too much to think about, too much information, everywhere we go...A successful political party has a really simple message – that politically, things are not so difficult". There appears to be more risk-taking by individuals in terms of personal or financial safety. Yet this accompanies an apparent reduction in confidence about coping with change and stress at both individual and collective levels that appears to be in contrast to the general optimism that technology will provide solutions.

*Opportunities*

As the incidence of public gatherings decreases, so, too, is there a decline in tacit and experiential learning in local places. Relatively high levels of scepticism towards public agendas as being set, and controlled, by remote 'urban elites' has long been a discernible feature of value-sets in remote rural areas, and such expressions of powerlessness persist. 'There are fewer people now willing to participate in discussing a common vision', said an agricultural innovator from Tasmania. There seems to be less time to think through complex challenges and an increasing demand for faster responses. This is reinforced by the observation, made by some respondents, of a climate of continuous 'crisis' that prevails in the media, making it difficult to constructively focus on planning and options for the future. The overall situation in the case regions is more reactive than proactive, despite increases in access to information.

**Table 4.6 Changes in capacity to think and act to develop place assets.**

| | MOTIVATION | ABILITIES | OPPORTUNITIES |
|---|---|---|---|
| COMPETENCIES<br>- as consumers<br>- as citizens | Place assets for basic needs (food) taken for granted and less interest in maintaining them as communal priority.<br>Commitment to place ambiguous (increased interest in other places).<br>Identity more individual rather than communal.<br>Decline in responsibility for others, more self-reliance. | Knowledge of how systems and assets work is low (e.g. health costs of consumption decisions). Less knowledge of place history and capitals.<br>Skills to assess costs-benefits or risks ambiguous.<br>Values dialogue on complex issues reduced to simple problems and solutions.<br>More risk taking without precautions. | 'Work-life' imbalance, daily stress reducing reflective thinking.<br>Preoccupation with money/material accumulation and consumption.<br>Less face-face communication, shared experiences, common information.<br>Focus on mobility across spaces (to other places).<br>Less local ownership. |
| CONDITIONS<br>- signals (from government, business and media)<br>- prevailing 'cultures' | Basic needs (food) expected to be cheaper to allow expenditure on 'new' needs/wants.<br>Change is 'inevitable' and the only solution for 'security and freedom'.<br>Individual is 'free' and responsible. 'Voluntary' solution.<br>Optimism for easy, fast results. | Living beyond means (personal debt) encouraged.<br>Local knowledge of place reduced.<br>Codified knowledge replacing tacit.<br>Limited articulation of tolerance for diversity.<br>Over confident, simple answers to complexities. | Learning loops and feedback less certain.<br>Longer-term visions and thinking about the future not encouraged.<br>New interests through networking, learning and creativity.<br>Less dependency on *in situ* assets. |

Overall, there is uncertain confidence in the community's capacity to take responsibility for maintaining the elements of its 'quality of life'. The two crucial factors of time and space seem to be related to the weaker capacity of rural communities to safeguard the 'capital' that underpins their quality of life goals. Analysis indicates that quality of life goals are closely linked to perceptions of time

and space, although respondents did not make direct reference to these two factors, nor were they mentioned by the interviewer. There is a scarcity of *TIME* to 'give', to reflect on others, place, heritage, values and memory of lessons learned, and especially of the consequences of decisions (both positive and negative) on relationships. Time stress dominates in Tasmania. 'Everything's so quick these days', observed a regional representative from the Huon, while an educator states: "time is so short and there are many more activities...higher expectations and demands"; and a communicator: "things move faster. Everybody wants everything today". More time is now spent inside homes, shops and work sites, and in travel (commuting, holidays). While benefits, such as enhanced learning opportunities, are recognised, respondents identified 'downsides', especially reduced physical exercise in the form of 'free' outdoor activities.

Accompanying this concern about time, is an increasing 'private' notion of *SPACE* that undermines place sharing and responsibility for others in it, in the form of a shared identity and affinity with a place. Declining youth attachment to place, in particular, was a perceived trend and was related to the removal of traditional space barriers and a dramatic increase in physical and virtual mobility. Space and time intersect at points of decision-making. "Many young people are spending money faster, not saving...the ideas are flowing faster from other countries and cities", observed a business operator from Norway.

The influence of time and space is summarised in Table 4.7.

**Table 4.7 Time and space as factors effecting motivations, abilities and opportunities.**

| | TIME | SPACE |
|---|---|---|
| MOTIVATION | Instant 'results' expectations<br>Patience reduced<br>Short-term views<br>Stress from continuous demands | Global outlook, less local focus<br>Wider competitiveness<br>Broader identity |
| ABILITIES | Faster decision-making<br>Feedback delays in learning loops (on consequences of decisions)<br>Shortened memory<br>Commitment to decisions reduced | Increased 'margin for error' in assessment of risks and consequences<br>More external and codified sources of knowledge<br>Reluctance for face-face communication |
| OPPORTUNITIES | Pace of everyday life increasing<br>Less reflection (incl. memory)<br>More time at work and inside (when at home)<br>Vague longer term visions<br>Scarcity (of time) as resource | Increased physical and virtual mobility<br>More individual spaces in daily life (home, commuting)<br>Less outdoor recreation<br>Less difference between rural and urban locality |

### 4.5 Emerging gaps, tensions and assumptions

There are emerging gaps between the expected changes envisaged by policies and the levels of confidence within rural communities to cope with change. Any capacity gap has implications for democratic processes. A community needs to have a sense of empowerment to understand, negotiate and manage change if it is to form its own vision of the future. In the cases undertaken, both regional communities show a mixture of optimism and pessimism in terms of their futures.

When the perceptions of the case communities are analysed to ascertain why and how they see changes as either positive or negative, the key element is the level of confidence to set and achieve their own goals. A capacity for continuous improvement is related to a sense of 'locus of control' over change, including opportunity to freely define a 'quality of life' that motivates residence outside urban areas. Pressure to migrate affects rural areas worldwide, especially in developing countries, and creates tension between change and continuity. While youth seek urban opportunities for formal learning and social diversity, many elements of

wellbeing and security (as defined by respondents) are based upon greater quality of relationships with people and nature provided by rural places.

Individual control over means and ends is dependent upon external conditions allowing a real choice for destinies and pathways. Global competiveness, urbanised lifestyles and increased individual responsibility to cope with change, are the trends of concern to most respondents. Community confidence and hope both depend upon sensing that change is meaningful and that committed effort for continuous improvement will be rewarding. Yet the cases indicate underlying doubts about some aspects of policy rhetoric about change and overall progress in improving the quality of life for rural communities. The external forces that constrain and also accelerate freedom and security appear unbalanced.

The centralising power exercised by both government and free market forces underlies the concerns of many respondents. Dominating signals that 'big is better' - and the only viable solution in a 'globalised, competitive world' - pushes small farms and businesses into larger scale operations. The traditional alternative to individual competitiveness – cooperatives – is not encouraged, especially in Tasmania. Signals about scale also apply at the local government level, with rationalisation of shared, locally owned and managed welfare services, such as schools, hospitals and transport. There is a sense that rural voice and influence is declining as the scale of decision-making increases in politics and business. The result is a noticeable fear, especially in farming sector Tasmania, about the capacity for 'locus of control' over assets that support needs. Here the main concerns were the centralisation of ownership of the food supply chain and the urbanisation of political influence.

Many respondents expressed frustration that the future of agricultural regions was not on the agendas of the main political parties nor the main organs of mass media, even during the election campaigns:

> 'There's been efforts to focus on the future of districts but no discussion of it in the big media. It's just about big regions, only the role of Bergen in developing our future, not about SMEs and farms developing' (Regional representative, Sogn).

> 'We are having this constant diminishing population in rural regions and we're not really having any discussion about it...it seems "who cares if people move to the

cities". It makes the country much easier to run if they're all sitting in the major cities' (Agricultural advisor, Huon).

In both regions, there is declining confidence in the willingness of the regional and wider community to support local food-production assets. Most agricultural respondents saw potential conflict over the rights and roles of those involved in agriculture (as providers of food security and as sustainable managers of natural and cultural assets) with the expectations of non-farming members of the community. Many of these perceptions were also articulated by other respondents who saw changes in community thinking and acting to indicate inconsistencies between attitudes and actions. Respondents, especially those in Norway, saw increased preoccupation with private consumption occurring at the expense of public investment in the support of regional assets. This was causing tension between the roles, responsibilities and rights of the individual as a 'consumer' and as a 'citizen'.

Increased aspirations for private consumption leads to demands to withhold taxes for shared public resources in the very communities people in which reside. Responsibility for maintaining and developing assets such as schools, transport and health facilities are under stress in both regions. However, people still demand that these services be delivered at a level equal to that pertaining in populous urban areas. Thus, an increasing number of rural residents follow the urbanised consumption patterns of ever-expanding expectations. Spending on digital technologies was identified by many respondents as a prime source of stress upon household budgets, overriding even basic needs such as food. The stress flows on to growers and municipalities, as an agricultural advisor in Sogn put it:

'People working with traditional crops like apples and pears have a much, much lower income than the rest of society. The young people with children won't accept it because they don't have sufficient money for their children to be at the same level as the rest of the young people. ...Some people are not consistent. If you ask them if they wish to buy Norwegian products they say "yes". But when they come into the shop they buy the cheap brands and don't ask where they come from. The newspapers are very focussed on cheap food...It's very strange, people complain about the price of the potato but the annual consumption of potatoes costs less than a bottle of wine every weekend..."Private richness and public poverty" is a saying in the district...there is much less money in the kommunes now compared to the private economy'.

Inconsistencies can also extend to 'locus of control' and the political conditions supporting rural areas, as described by a farmer in Sogn:

> 'If no agricultural support, you would have generations going out. Some of the farmers are fed up with all the rules and regulations in Norwegian agriculture. It is so controlled on every detail that I think some farmers vote for the ultra conservative party because they think they get more freedom. But if that party really gets in power they cut all the support and agriculture will be left in the middle of the air and it will fall like a stone. The leader of that party talks in very simple ways. Well society isn't that simple but he gets through with his message and people think it's as simple as that. But it's more complicated and more complex.'

These significant 'attitude-action' gaps emerging from the data, especially in regard to making informed choices about food, and therefore supporting local assets, are also the strongest frustration within the Tasmanian agricultural sector. Many Huon respondents felt that the 'professed' attitude of community members that 'I support local agriculture' (and thereby 'traditions of and solidarity with this place') is contrary to the action many take of 'I prefer to buy cheaper imported food' (and thereby 'accept the marketing information of corporate retailers'). But as an agricultural advisor from Norway commented: "the political signals are that everything needs to be cheaper, import more...But people, even the media, don't know about how other countries' economies work".

There is also a feeling of exhaustion among those farmers who actively engage in change and self-improvement. Pursuing continuous innovation tests optimism and adds to a feeling of uncertainty. The prime reason for this is that demands for innovation manifest unevenly along the supply chain of food products and services. Growers are expected to respond to rather than lead market demand, with wholesalers, processors and retailers insisting that growers innovate continuously to manage on-farm costs. As a farmer in the Huon put it:

> 'We've given ourselves every chance, travelled the world to pick up the ideas and to learn the skills needed. We've been reasonably successful in adopting those. But it feels like you can do all the things we've got control over and its still not enough...The grower gets only four percent of the price paid by the consumer. From the farm gate to the consumer there's been zero efficiency gain, zero cost reduction....We subscribe to the idea that we've got to be continuing improving. If we're not doing it better, cheaper, more efficiently tomorrow we are not going to

survive. But we feel like the whole chain needs to be involved. It can't just be at the producer end.'

'Pessimism in the industry is affecting how people see where the future might lie. We've been initiating actions for 10 years and we don't seem to be getting anywhere. I think everyone is getting tired, everyone's burning out and probably think it's inevitable that the industry will disappear'.

Adopting further technological solutions often only adds debt and pressure on time to learn new skills. Such stress involves reduced opportunities for creative thinking and activity, especially when it comes to innovation by technology users themselves. Again, this is an issue connected to ownership of change in terms of both ends and means.

Multiple pressures test the innovative capacity of farmers and can have a negative impact on community engagement with the future of place. (This is surprising considering the relatively sound overall economic situation of both regions studied.) The youth sector in both cases manifested ambivalence over future rural prospects, including encouragement by some farmers for their children to seek less stressful careers. In the shift from collective to individual problems and solutions, anxiety levels rise in both adult and younger populations.

Security and freedom have always been in tension in everyday life, especially for children and youth. Trust within any open society requires mutually recognised rights, roles and responsibilities in both private and public spaces, but, according to many respondents, rural youth are now perceived differently by some sectors of their own communities. As a youth advisor from the Huon put it:

'Due to the broader community often having a negative perception of them, maybe based on fear, young people are experiencing a whole range of disconnection with their community...there's a lot more services with a human face in communities to build trust with young people and others. But then on the other side, I think it's a generational thing, where young people won't necessarily trust older people because they don't always tell the truth. There's a lot of historical stuff around trust.'

The consequence is a new form of stress among many rural youth:

> 'I think young people are rather confused. They are told to be individual, leave the region and the problems the parents are telling them. There are two possibilities. If you are ambitious, realistic and clever "there is no value, no future here, you must go". If you stay here, you are thinking like people did in the old times. It's a retrospective way of thinking. But if young people, even through this, learn to appreciate the qualities of the village and reflect about it, it is not normal to accept that nothing is developing... problem is that it is not a question of going or staying. A possibility is to go up (develop) and stay. It is no longer a question of being a villager fixed in one spot or being a member of the world society.
>
> In order to be successful you have to learn...how to look after yourself, your community and the bigger community; to create a common way of understanding the conditions, the challenges and the possibilities. Problem is that too many people simply don't want to understand...it is a question of taking the best of both worlds. Traditions of the past and creating new traditions in the culture. Fifty years ago my parents travelled to the city once every five years. Then roads and context got bigger. People had to cooperate. They had to find out and solve problems together and become a culture. But now we are out. We still have cooperation with neighbours and have relationships with them but now me and my neighbour have very different views of the world' (Farmer A, Sogn).

Within the two rural communities studied a number of contradictory assumptions about the capacity to manage change can be discerned.

Firstly, there is a belief that place will retain the assets and deliver needs into the future because it is capable of continuing 'self-renewal' (as ecosystems may do, without inputs). This is despite the increasing diversion of public funds and taxes into individual choices and decisions. This view suggests high optimism about community capacity to adapt, despite concerns that communities increasingly 'take for granted' the services provided by a declining number of volunteers (in, for example, sports, public event organisation and health support). However, the notion that the assets of place are strong enough to allow 'free riding' by some community members assumes that 'others' will actually continue to provide time to care and maintain shared spaces.

A second set of assumptions relates to this belief in the robustness of the assets of place, despite reduced inputs to decision-making. The belief that the community is capable of maintaining a desired identity and culture by choosing what external influences to adopt - 'select the best, reject the rest' – is an act of faith in resilience. Yet contradictions are evident, with a recognition that space and time barriers are disappearing as urban, global and more individualised and materialistic lifestyles emerge in rural communities, especially among younger populations. Although people leave to live in urban areas, they have a high expectation (especially in Norway) of returning to the region to raise children. As some respondents reported, it is almost as if rural place can be preserved, economically, ecologically and socially, with minimal input. As one respondent observed: ' youth want the landscape and the farms to be there but they are very negative to the subsidy of the agriculture...everyone wants to have a nice, open landscape, cows, sheep but they don't want to pay for it' (Agricultural advisor E, Sogn). Another agricultural advisor pointed to assumptions concerning the durability of valued cultural landscape on the part of citizens living away from the regions:

> 'You have to really see and feel the landscape. You have to go there before you ask what we are losing. People don't see what they are losing. Some people living in it might see it but it doesn't concern most people' (Agricultural advisor F, Sogn).

The issue of 'romanticising' the rural landscape is a possible consequence of tourism, especially if regions are not expected to be dynamic. Rural cultural assets in both cases are taken as the signature qualities of the wider society. As an agricultural advisor from Sogn observed, 'for the profile of the Winter Olympics every cultural event was taken from the districts. The cultural identity of the country was not in the cities' (Agricultural advisor C, Sogn). The acclaimed 2008 film, *Australia,* is another example of cultural identity continuing to be expressed through the rural areas of an increasingly urbanised nation.

### 4.6 Summary of findings

The data indicate a clear set of characteristics of place that motivate rural communities. There is strong emphasis on a quality of life derived from relationships with both people and the land, rather than narrowly economic 'standard of living' criteria assumed and highlighted in many policy communications. Social and

ecological conditions are the key elements of the assets valued by rural communities for the satisfaction of their future needs. Both 'returnees' to rural places and new settlers are motivated by place-based attributes that underpin quality of life. These indicators are the quality of relationships with people and with nature and landscape. The strongest emphasis is on qualities needed to support the development of children in secure, trusting, caring and stimulating environments. Such orientations on the part of the respondents contrast sharply with many policy assumptions about what motivates rural communities. The data from the case regions show financial aspects are means to other ends and trends reversing this are central to concerns.

In summary, the 'means-ends' equation of needs and assets, as expressed by rural respondents, is predominately to do with the social, natural and cultural dimensions of place. Geographically defined place also underpins identity, security and confidence, especially for Norwegian respondents. It is not surprising, then, that the case studies indicate that the main concerns about change processes relate to perceived risks to the conditions essential to that life quality. The future of place assets is of concern to communities, though, usually, is only indirectly expressed as such.

Several of these concerns stem from uncertainty over the respective community's likely future, especially in terms of food security and cultural heritage assets. Both rural communities, but more so in the Tasmanian case, perceive the pressures from policy trends to be incompatible with their needs and preferred place futures. They expressed a generally lower sense of locus of control over the way agricultural assets in particular are being devalued. This frustration also stemmed from a perception that the community's capacity to understand the mutual relationship between place assets and individual needs (as expressed in the quality of life sought) was not improving. A commonly held view is that trends towards individualisation and competiveness indicate complacency or disinterest in sharing responsibility for the future of physical place and people.

When analysed, both quality of life and concerns about change show strong linkages to the factors of time and space. Community motivations, abilities and opportunities to think and act for the future of place are clearly related to these two factors. Although some respondents have already made limited connections to the role of ICTs, the interrelationships between new patterns of time, space, information and communication will be explored more specifically in the next chapter. Questions to

now consider include: what do rural communities understand about the role of ICTs in the change processes affecting their preferred futures; and how do digital technologies relate to the means and ends of perceived progress (especially learning and socialisation processes)?

# CHAPTER 5: CAPACITY DEVELOPMENT AND IMPACT OF ICTs

## 5.1 Introduction

In the previous chapter, interviewees from the two case regions exhibited concern about changes in community capacity to think and act for the future of rural places. Respondents in both cases perceived strong linkages between the rise of a more individualistic orientation towards needs satisfaction and a decline in active support for collective assets. Issues of concern included changes in motivation, abilities and opportunities to have agency for responsibility for place. As decision-making becomes independent from shared assets *in situ*, the means to preferred ends are decoupled from community assets. Time and space are important factors in the way community relationships with place are changing.

This chapter further examines these issues of concern as they relate specifically to ICTs through time and space factors and also through changes in information and communication. It aims to discover connections between the capacity of communities to take responsibility for the future of rural places and the deployment of digital technologies; in particular, whether the respondents themselves perceive any direct relationship between ICTs and changes in quality of life objectives. It will also assess their capacity to undertake informed decision-making in relation to such impacts.

After examining more closely changes in place-based relationships, needs and assets, the chapter considers specific references that respondents make to digital technologies. Linkages will be further analysed for indicators of current community capacity for decision-making on the role ICT has in developing satisfactory 'means to ends'. Discrepancies will be analysed in terms of assumptions held by communities about digital technologies. This will help determine whether rural communities perceive any need to improve their capacity to negotiate and manage ICT-mediated changes.

The chapter concludes with a brief consideration of possible explanations for the current level of community awareness and understanding about the role of ICTs in shaping the future of place. Implications emerging from this data for visioning,

learning and decision-making about digital futures and related policies are also introduced.

## 5.2 Issues linked to time and space

Analysis of the Tasmanian and Norwegian respondents' preferred quality of life has shown a strong correlation between individual needs and the shared assets of place. Both rural communities noted historically significant changes in community motivations, abilities and opportunities to develop shared responsibility for the future of the assets of rural place. These perceived changes were more concrete than most generalities about rural communities' resistance to change *per se*. Concerns were specifically linked to the ends sought (quality of life outcomes) and the means to achieve these goals (*in situ* assets and relationships). Although changes were seen to be both positive and negative, there was underlying uncertainty about the processes of thinking and acting underway in the community.

Further analysis, utilising grounded theory, identified that the concerns about trends in everyday decision-making (such as food choices) were linked to increasing uncertainty about wider political and cultural issues involving responsibilities towards maintaining shared assets in rural communities. The agricultural sector in particular perceived a decline in community competency to understand and engage in decision-making about the future of place assets. This was coupled with concerns over a decline in locus of control or 'agency' over change processes. Respondents were generally sceptical about how globalisation was applying pressure on rural communities to change, as they saw the general shift in responsibility from elected governments to individuals as increasing decision-making demand in all aspects of everyday life. For example, respondents' concerns over changing community attitudes and actions regarding local food security were directly related to the trend for individuals to seek satisfaction from increasing consumption of broader material goods and services, especially for entertainment and travel. Consumption patterns were also an issue for the other sectors, especially those involved directly with youth.

Analysis has shown that perceived changes in capacity to maintain the assets underpinning many community needs are strongly correlated with changing conceptions of time and space. In the previous chapter, Table 4.8 showed how these factors link to changes in community motivation, abilities and opportunities for

decision-making about the future of rural places. Yet, when raising issues of concern, only a small number of respondents made any direct reference to time and space as elements in change. Ironically, even those who focussed on benefits of ICTs ignored the possibility that the very power of digital technologies to 'conquer' the barriers of time and space, could also affect spatial and temporal elements in other ways. Why such linkages were not expressed openly is canvassed later in this chapter.

Few respondents considered the possibility that the changes in relationships between people and place could weaken other assets beyond those (such as volunteer services) that they felt were being 'taken for granted'. These more complex assets include identity with place heritage and the resilient dynamics of culture that assist continuity of place. Three significant changes in such capacity for dynamism have been identified from closer analysis of respondents' concerns. Critical thinking, cooperation and creativity are vital components of capacity building (or learning) to guide means to ends. In Table 5.1, suggested changes in community capacity for critical thinking, cooperation and creativity are linked to factors of time and space.

The three elements of critical thinking, cooperation and creativity have complex interrelationships with time and space. In both case regions, respondents in all sectors shared common observations, particularly exemplified by the trends perceived with younger age groups:

- Critical thinking, including capacity to cope with the increasing stress in decision-making about means to ends in 'competitive' social, health and employment matters.

'A lot of young women just drop out of recreational activities. Image is a lot, it's to young men too. Fear of how they'll be viewed by others and a fear of a sense of failure too. It's increasing because there's a lot more pressure on young people these days. They have to make so many decisions so early now. At school they are predetermining their pathways at such an early stage' (Youth advisor, Huon).

**Table 5.1: Changes in community capacity linked to space and time**

| CAPACITY ELEMENTS | SPACE | TIME |
|---|---|---|
| *Less critical or reflective thinking*<br><br>(due in part to 'busier' everyday life and 'blurring' of 'work-life' boundaries). | Fewer 'quiet spaces' and more 'complex spaces' for decision-making. Public and private spaces closer.<br>Expanded information access, awareness of events and choices.<br>Mediated communication with less place context, ('body language' etc). | More 'scheduled' activities (especially for children).<br>24/7 access and expectations for instant communication, including for work.<br>Pressure to respond to complex choices faster.<br>Impatient attitudes. |
| *Less cooperation and more individualism*<br><br>(due in part to reduced physical contact in everyday socialisation) | More private space.<br>'Blurring' of rights, roles and responsibilities in shared public spaces. More anonymity in communication.<br>Access to more diverse people, external employment and recreation, yet more travel to regional shopping complexes, commuting and holidays away. | More private activities pursing changing needs and interests.<br>Less time to engage in 'face-to-face' communication.<br>More frequent communication yet 'shallower' and more 'convenience' oriented.<br>More focus on individual interests. |
| *Less creativity and 'self-entertainment'*<br><br>(due in part to convenient 'escapism' from daily stress, including work travel pressures). | 'Boredom' with local place-based stimuli (nature, outdoors and public events).<br>Pursuit of external inputs, especially through private 'home entertainment systems'. Increased consumption of 'paid entertainment'.<br>Increased mobility of interests outside of place. | Access '24/7' and increasingly wider choices requiring more decision-making.<br>Expectations of instant gratification and increased 'fears' of boredom and being 'out-of-date'.<br>Imagination and originality under pressure from faster flow of external, urban images. |

'The urban life is more attractive in the last fifteen years. It's has a cultural factor, especially among well educated girls. With boys it's not so clear. They develop problems in education but they are local patriots. They will stay....very few girls want to stay in the region. Half of girls leave and come back for families. But the well educated girls with well educated parents will never come back because they find the cultural context too restrictive. They like to play with clothes and styles but cannot do so in rural areas. Of course it's much more realistic to get a top job in Oslo but much of it is a question of style and anonymity, freedom' (Educator B, Sogn).

- Cooperation, including capacity to develop trust and security in daily life within private and public spaces.

'Mobbing (bullying) is a "nice" thing to do and get more satisfaction, more respect from others. Like "I'm the baddest, so you have to be afraid of me". Some people have always been like that and now they are getting more open about it, more bolder and not just young people but adults as well' (Youth advisor A, Sogn).

'There's a new big increase in bullying in terms of mobile phones. There's a lot of text messaging bullying happening, calls, especially from females. It has a big impact on young people. They wouldn't say those things to a person's face. A lot of bullying is happening by email' (Youth advisor, Huon).

- Creativity (defined here as imaginative and original thinking and acting, particularly for problem-solving), including a capacity for patience (in transforming ideas into reality) and coping with pressures to consume 'paid entertainment' as choice options rapidly expand.

'There are 17-18 year olds who don't want to start studying but start working because they want to earn money and get rich. They have this picture in the head that it is just to get a clever idea, start working and it will happen really fast. Because that's the story you hear about in the media. Millionaires in a couple of years. But the focus on the hard work is missing. The focus is on the money' (Agricultural advisor C, Sogn).

'Young get more focussed on what material possessions they can acquire. When we were growing up we made our own fun. I guess in a community environment we entertained ourselves, going out into the bush for hours, riding or walking. There's less outdoor activity now, probably because of transport' (Youth Advisor, Huon).

'Here our kids do less outside things...definitely not spending time in the hills and on the river as they did in the past' (Farmer C, Huon).

'I think young people have changed from when I was younger. That's natural. We were closer than now. Today there's much copying. I think it's difficult for them to grow their own way. In a special age they want to be like each other. I observe that one year it's that and the next year it's something else' (Farmer C, Sogn).

'Entrepreneur faith is quite naïve. In experience only one in ten survives but there's a lot of money put into it....Often there is no creativity, just copy' (Educator B, Sogn).

The complex interplay occurring between all three elements is reflected in the following example.

'Supermarkets tell us that consumers want a product that's in a container, they can lift the lid and eat it. We don't want to get our hands dirty anymore peeling an apple or scrubbing a spud. Those days are gone. Time is for other things. There are a lot of DVDs out there to watch. With the money consumers save they're buying this huge big screen they put on the wall with surround sound so they can spend more leisure time watching the latest movie, playing the latest video game. Before, Mum and the kids would have prepared food. Kids gone outside, kicking a ball around, gone bushwalking. But it's all changing. People are too busy to communicate with people now. They probably work longer hours and want to have their entertainment at home... Now they have two cars, every home now has three TVs, computers, and computer games... Look at his advertising in today's paper to win a 'X Box 360'. None of these pressures were on us when we were growing up' (Farmer B, Huon).

These three elements, all vital to the capacity to cope with change and achieve desired ends, will be further analysed in the next chapter. Community capacity for critical thinking, cooperation and creativity are also expected outcomes of all policies connected to 'the digital future'.

### 5.3 Issues linked to information and communication

As with time and space factors, the respondents made minimal direct reference to information and communication. However, there were strong indirect references focussing upon concern over the quality (versus quantity) of communication in personal relationships and of information accessed and used in decision-making. While a rapidly expanded global-urban orientation of information had obvious positive aspects (including facilitation of more diverse and wider interests) many

respondents were uneasy about the trade-offs involved, especially on youth values and knowledge. Similarly, despite more frequent and accessible communication between young people, there were also many negative references to its purpose and consequences, especially in regard to increasing bullying and aggression.

Analysis of the data shows several direct references to changes in the patterns and quality of information and communication across communities. These are related to trends suggesting reduced personal responsibility for the future of shared places. Some respondents also indicated that information disseminated by the media is often short-term and crisis-oriented, which is not conducive to effective reaction to longer-term challenges. Such information adds to overload, and it also makes it more difficult to develop knowledge about deeper, less tractable problems, to devise appropriate solutions, and to develop motivation for such action.

Several respondents expressed doubts over the quality of information available for decision-making about the future of place. This centred upon the replacement of local place information with more external and urban oriented content. While this situation applies to the community as a whole, it was noted as affecting younger members more so, as the following examples show.

> 'Everybody is presented with [the] same kind of wish now to be glamorous. The image of a good life is the same for everyone all over the world. This wish is so far from what is possible for most people' (Educator B, Sogn).

> 'We are a very open society. All communities have local sports clubs, lots of ways to use nature, which is very important. At the same time we have to find interesting things for the youngsters as the media is very focussed on urban lifestyles. There is less difference between rural and urban now because of the communication' (Agricultural advisor A, Sogn).

> 'Kids are probably not learning more about where they live. They're looking more outward and just take for granted what they've got. Most people do' (Regional representative, Huon).

Changes to the linkages between temporal and spatial factors and information and communication are shown in Table 5.2. The table also reveals how perceived changes in communication processes are connected to those of decision-making, learning and visioning.

**Table 5.2. Relationships between time/space and information, communication and other processes.**

| PROCESSES | TIME | SPACE |
|---|---|---|
| Information | Newness emphasised ('breaking news'). Increased complexities yet overload of segmented, shallower information. 'Instant' knowledge expected. | Global orientation and more diverse cultures and sources. Comparatively less access to information about place, people and assets. More codified 'place neutral' and less direct tacit knowledge. |
| Communication | Shorter, more frequent. 24/7 access and response expectations. | Wider external networks. Fewer public meetings. Face-face skills reduced. Body 'cues' removed. More private conversations in public. Identity norms less place-based. |
| Decision-making | Immediate, often rushed. Short-term focus. Instant action yet delayed feedback loops on consequences. Memory 'devalued'. Impatience. | Anonymity distorting responsibility and risk taking in public spaces. More stress in trust and in assessing costs and benefits of actions. Individual needs are less place-dependent. |
| Learning | Faster pace, more complexities and increasing demands on curricula. Less knowledge of place (heritage etc), more technical focus on skills (over communication, conflict prevention and resolution), and values shift to individual responsibility. | Fewer daily experiences in outdoors. Codified, less tacit knowledge. More privately and individually oriented. Earlier specialisation pressures (especially on youth). |
| Visioning | Shorter-term focus. Optimistic expectations of faster resolutions. | Global orientation and more complex. Urban lifestyle identities. |

In terms of their impact on visioning (thinking longer-term, views of the future and preferred ends sought), trends in both formal learning and in decision-making processes have been questioned indirectly by many respondents. Many expressed concerns over the tendency for youth to make short-term and 'easily changeable' decisions, ignoring resulting consequences, and with a strong expectation of fast, easily achieved success in any pursuit with minimal effort.

While the respondents' focus on youth is an indicator of trends into the future, this needs to balanced with the knowledge that younger people usually have a short-term view of world, especially as they tackle the considerable complexities of adolescence. This is a dynamic and turbulent period in life, and many respondents expressed an understanding of this as 'normal reality'. However, their focus was directed at what they perceived to be historically different trends and factors emerging. The situation regarding youth is especially important for learning processes and expected policy outcomes. (The factors identified in this chapter will be further explored in Chapter 6, when the wider context of the trends here identified is considered.)

Respondents' concerns about information and communication changes cast doubt over whether their expected long-term needs will be adequately supported by appropriate social conditions. Such conditions foster a well informed, open and democratic citizenship but are often taken as givens in discussions about governance. The situation can be summarized thus:

- *Communication processes*: Less time for quality communication with people *in situ* is risking a reduction in the depth and 'richness' of social relationships within physical communities, especially across age groups. In both case regions there were no strong indicators of improved trust and openness within their respective communities, or of greater shared 'neighbourhood' experiences. In contrast, some respondents suggested a rise in 'anti-social' and even aggressive criminal actions within the community, despite historically favourable economic conditions prevailing (especially at the time of data collection).

- *Information for knowledge generation (i.e. learning processes):* Common knowledge about local place (its history, customs and obligations) appears to be in decline. There also seems to be no developed sense of the common challenges facing people, despite more diverse sources of information

exchange and wider interests. No strong evidence of improved engagement in visioning processes is apparent, despite the provision of opportunities to do so. A decline in direct physical interaction with and experiential learning within the local landscape (especially recreational activities such as walking, rowing, cross-country skiing, hunting and camping/hut stays) seems to be occurring. This is changing the nature of the tacit knowledge of place according to several respondents (especially pronounced among respondents engaged in farming) as the following example shows:

'I think it is important to keep nature and take care of it...because it's a part of us. It's important not to destroy it. We have to learn how to take better care of these areas. There are different meanings of the responsibility about it with farmers. Not good but that's natural. But many farmers see that we have to take care of it for coming generations. It's about old knowledge...It will be a problem to pass on knowledge to the next generation. Young people stop farming and the knowledge will disappear. Not only the farm but also the knowledge of the place' (Farmer C, Sogn).

Overall, there is uncertainty over whether communication and learning processes are delivering improved competencies for responsibility about the future of places. Given that respondents linked their quality of life to the maintenance of effective relationships with people and nature, such competencies are potential indicators of human and social development in rural regions. The current situation casts some doubt over such progress.

### 5.4 Recognition of the role of digital technologies

Respondents' concerns about place show clear indirect linkages to digital technologies (through changes in time, space, information and communication). Many of them also initiated references to ICTs when discussing changes in thinking and acting, and the nature of the relationships people have with place.

The specific references to digital technologies initiated by respondents in open-ended questions are sufficient to indicate that some direct linkages exist. Yet, significantly, when respondents were later asked to identify any connections between digital technologies and the issues they themselves had raised, very few could clearly do so.

The general response was uncertainty or silence, and this includes some of those who had already made direct references to ICTs. On being prompted, however, some did expand upon their earlier views, with several specific connections being made to digital technologies. These have been grouped into two categories, as they relate to both the use and content of technologies:

Use - new practices replacing the 'old' tools, wherein technology is 'the messenger'. Aspects of concern were: expectations of faster and 'instant' decision-making or outcomes; observed increase in 'anxiety' with face-face communication situations; the anonymous nature of ICT communication that can distance users from the direct consequences of the impact of those communications (for example, text message bullying, privacy and misinformation on internet 'chat rooms'); and increasing expectations that digital technologies can adequately replace older forms of communication, especially face-to-face.

Content - new signals, wherein technology has the role of mediating 'the message'. Aspects of concern included: an emphasis that 'new' and globally-sourced information is 'better', with a perceived implication that local rural knowledge, skills and values were of the 'old world'; reinforcement from both new and old media to continuously 'move forward' to 'new, exciting' topics and interests, with a perceived implication that local issues and cultural maters are 'boring' and possibly inconsequential; and messages to constantly be informed about 'new' events that may develop over-dependency on these tools for confidence, self-esteem and identity. When added to the cost of these technologies, prolonged 'unproductive' periods (when the tools are 'silent') could also contribute to anxiety, especially on the part of youth. The desire for both new content and constant use could become an end in itself.

When considering community capacity to make informed decisions about the role of digital technologies in change processes, it is important to distinguish between the use of 'the messenger' and the content of 'the message'. Both aspects involve knowledge, skills and values which have an impact on competencies and conditions for learning. In Table 5.3 perceptions of relationships between ICTs and community capacity to make decisions about the future of place are analysed through both usage and content patterns, as noted by respondents.

**Table 5.3: Capacity change and links to digital technologies**

| CAPACITY CHANGES | DT AFFECT | EXEMPLIFYING QUOTES |
|---|---|---|
| COMPETENCIES<br><br>Including *Motivation and Abilities* (i.e. knowledge skills value) | CONTENT PATTERNS | 'I have my doubts that the internet is improving community capacity to discuss values. But using it can change values. By increasing peoples' ability to gain factual information much more readily, then values judgements can be formed much more readily' (Farmer A, Huon).<br><br>'You can't get the values to the next generation the same way because before our society was closed, you knew what was going on in your town, but that's not the way it works now. You have TV, internet and they are more influential so you are seeing the same thing as in Oslo or Bergen. There will be change and maybe bigger for smaller places with villages much more similar to big towns in the future' (Educator A, Sogn).<br><br>'Young people sometimes have an unrealistic expectation of a job. They now want the high wages but not necessarily have to work towards it. I think a whole different world is being created around mobile phones and stuff like that. Everything's "push button" and instant gratification. So a lot of young people are losing the traditional country value of working hard to achieve. Generally, a lot of young people are finding that in-between steps gets difficult and because they can' achieve it straightaway their self-esteem gets lowered. The media is probably giving them a "false confidence" (Youth Advisor, Huon).<br><br>'The funny thing, which is coming all over the world, is that the younger people are teaching the older people. It's all turned around. With these new technologies, the younger are much more advanced, for example with students and teachers' (Agricultural advisor B, Sogn). |
| | USEAGE PATTERNS | 'Technology is providing information that's more sophisticated, more detailed and easier to get at. The problem is that everybody doesn't respond to the way information is presented in the same way. If we go down the path of saying technology is the way we present information to everybody, we're going to lose a whole lot of people. We've got to use more traditional technologies of newsletters, field day, face-face communication. Very easy to run with modern technologies. Sometimes face-to-face lets people get things off their chest, a shoulder to lean on. How do you do that electronically? There're not the people moving around with the growers who they can really communicate with about how they feel about things' (Agricultural advisor, Huon). |

**Table 5.3: Continued**

| CAPACITY CHANGES | DT AFFECT | EXEMPLIFYING QUOTES |
|---|---|---|
| | | 'In rural districts, people are more concerned about each other. Close personal contact helps create identity. Technologies don't work as well as a replacement' (Agricultural advisor C, Sogn).<br><br>'When television came in the late '50s, there was a big change with more time in front of the box. There's always an increase for a period when new videos and games arrive but it stabilises in the long run. But with young people the saturation level is the stable level of involvement with technological games and communication with friends through e-mail and mobiles. Lot of young people would spend 24 hours a day if they could stay awake that long' (Farmer A, Huon).<br><br>'Many Norwegians are really farmers inside. Their grandparents were farmers. It's a short time ago. But not sure about young people. They are interested in sports, computers and other things. It's new and everyone has it. Many use very many hours a day looking at computers, data flows and on sites away from Norway' (Farmer C, Sogn).<br><br>'If you sit on your own computer, read the news or watch movies, and talk to those chat rooms...Well that is good but not all he time. Children won't have all the senses for living. It's not good for the body to sit for a lot of the day. You can be more aggressive or you don't react as you should do if something wrong is happening inside you. It is so important to go out and discover how good it is to be human' (Agricultural student, Sogn).<br><br>'There's risk taking with mobile phones. I ask young people "why do you need a mobile phone?". "Oh, Mum gave it to me for my birthday so I can talk to my friends, play games on it". It becomes more a form of entertainment rather than as a communication device' (Youth advisor, Huon).<br><br>'With information technology everything goes faster. There is also the trend that we never send letters, only send e-mails so it happens "now". So maybe that's a reason for the expectations from the young that it shouldn't take too long, it shouldn't be hard work until you gain results ' (Agricultural advisor C, Sogn). |

**Table 5.3: Continued**

| CAPACITY CHANGES | DT AFFECT | EXEMPLIFYING QUOTES |
|---|---|---|
| CONDITIONS<br><br>Including *Motivation and Opportunities* (for visioning, learning and decision-making) | CONTENT PATTERNS | 'Content has changed and definitely the Internet is a huge factor. Kids are not necessarily accessing local information about what's going on where they live. They're looking outside the region, to Hobart, Sydney or Melbourne' (Youth Advisor, Huon).<br><br>'People are learning more about the outside world than about Sogn and Fjordanne. But they are learning more of everything. The more they learn about the outside world, the more they want to go out' (Agricultural advisor B, Sogn).<br><br>'Technologies remove us from strong bonds with our district, in the head. ' (Farmer C, Sogn) |
| | USEAGE PATTERNS | 'If a computer line is down we think "our throats are cut". If we can't communicate, we're in trouble. Mobile phones are an essential way of life here' (Communicator, Huon).<br><br>'Mobiles and internet make another world for young people, as for everyone. Mobile phones make better communication between youngsters and the family for appointments and to know where they are. But it can be used by young people to avoid control so it's not straightforward.' (Educator B, Sogn)<br><br>'The information technologies make the whole society work faster and you get even more information all the time. I don't think anyone can manage to reflect on everything so that's why you just accept a lot of things' (Agricultural advisor C, Sogn).<br><br>'There's a lot less commitment than there use to be. I think it's the feeling that it doesn't care if I'm doing what I said I'll do or not. Someone else will fix it. Personally I blame it on the internet. It's so much easier to arrange and rearrange things and there're no consequences. It happens with small and more important things' (Youth advisor A, Sogn). |

An historical acceleration of urban cultural influences, especially on children and youth as the main users of digital technologies, was strongly noted by respondents in both regions. It was particularly strong in the Sogn case, as the following examples indicate:

> 'I don't think you see any difference between young people here and in the cities. The way they use mobiles and how much, is almost the same' (Agricultural advisor D, Sogn).

> 'Differences between young people on farms and in towns are getting smaller because of instant communication' (Youth advisor A, Sogn).

Some respondents raised concern over changes in sleep patterns of rural children. A tourism operator from Tasmania noted: 'Daily life has changed. Now many kids go to bed at nine or ten pm but then they use their mobile phones'.

The role of ICTs in adding to increased individualism and competitiveness within the community was also noted by many respondents, as the following examples show:

> 'The younger generation is certainly a lot more comfortable with technology. As you get older you find it increasingly difficult to keep track of where technology is going. For young people, the faster it is, the better it is. They're out there trying to win a race' (Agricultural advisor, Huon).

> 'I wonder really what is going to happen because it seems like with these games a lot earn on it. It's competition with rewards and lot of money prizes. Some may earn a lot of money on it but so few. It's like playing lotto....Some say that also when you are spending too much time on the computer, you don't know how to behave with other people' (Farmer B, Sogn).

Yet, despite respondents identifying (either directly or indirectly) the factors of time, space, information and communication as affecting both ends and means, their responses when asked about the impact of digital technologies were overwhelmingly non-committal. Most respondents were unsure about the role of digital technology in strengthening or weakening their community's capacity to determine preferred futures. A typical response was that they 'had never thought about it' or that it was 'progress'. What possible explanations are there for this gap of 'silence' in recognition of the linkages?

Several contradictions emerge between the perceptions held by respondents, many of which relate to their assumptions about the role of ICTs in change processes affecting their communities. These are explored in the following section.

### 5.5 Highlighted assumptions about the role of digital technologies

Data from the cases has established potential links between respondents' concerns over perceived trends in community responsibilities for place and the deployment of digital technologies in everyday life, namely the impact on such factors as information, communication, time and space. However, there is a general 'disconnection' between issues of concern and the direct affect of ICTs. To analyse why such a gap exists, further explanations need to be sought from the assumptions held by respondents about the role of digital technologies and their own capacity to adapt usage and content patterns to serve preferred ends.

Uneven recognition of the factors changing community thought and action, and the power of ICTs to contribute to such changes, relates to the attitudes of respondents themselves towards these technologies. All respondents were users of ICTs, especially in their work, and perceived benefits from their deployment. By conventional definition, no respondent was a 'luddite'. As the study intended to focus on broader issues rather than individual use of technologies, it had a premise that respondents held a generally positive attitude towards ICTs. This was not challenged by the findings, with some respondents offering positive views of the role of digital technologies in expanding community 'horizons', innovation and learning.

However, such an instrumental view of technology as a means to other ends also implies that it is 'neutral' or 'benign' in its role in the very issues raised by respondents. This appears to be the main inconsistency, which is reinforced when the data is analysed for the frequency of affirmative statements about the expected benefits of ICTs for rural community life. Despite their own usage, respondents were ambivalent towards the overall benefits of digital technologies. This is somewhat surprising, given the high rates of uptake in both regions, which would suggest that the climate of opinion towards deployment of these technologies is overwhelmingly positive.

The recognition that digital technologies affect people in different ways is summed up thus: 'All these technologies impact differently in both a positive and negative way on many different groups in the valley' (Tourism operator, Huon).

The formulaic enthusiasm for the opportunities that new digital technologies offer was not extended by most respondents to a clear analysis of these costs-benefits to

their community. Given the general climate promoting the deployment of digital technologies, and the active use of them by all respondents, any specific questioning of perceived benefits was considered to be less important than trying to identify possible costs. The benefits inherent in the rural respondents' professional use of these technologies include economic efficiencies for marketing and crop and stock management, as well as gains in overcoming 'tyranny of distance' obstacles in information access and exchange. Although no specific question was asked to expand upon the community benefits of ICTs, the opportunity for respondents to express these existed. Although all use of digital technologies involves subtle and complex interactions, Table 5.4 shows how there is an unknown impact of ICTs on the issues of concern affecting the quality of life sought by rural communities. When the widely expected and promoted benefits of digital technologies are matched with the evidence from the cases, the correlation is relatively weak.

Many respondents gave caveats to their perceived benefits from ICTs, as these two examples show:

> 'You can live where you want because you have the technological possibilities. So many people want to stay here and be employed in Bergen. But you need the physical contact also. I don't think you can solve everything with a mobile or e-mail' (Agricultural advisor D, Sogn).

> 'Business and everything's about dealing with people. You've got to know who they are and be able to look them in the eye. You can use I.T. communication once you've established this contact' (Innovator, Huon).

In addition to streamlined communication, the main benefit of digital technologies is greater information access. However, when asked about the about quality of use and content, several respondents had concerns. For example:

> 'For young people it's a big question because you have to have some knowledge to select the good things from 'no-value' information. This is chaos. You have to have basic concepts and knowledge. In educational terms there is a great and growing difference in how much help young people can get to use the internet in a creative sense. You get lost in a lot of rubbish. College students do too' (Educator B, Sogn).

**Table 5.4: Expected learning outcomes and benefits of ICTs**

| Expected benefits | Contrary Trends | Use patterns | Content (signals) |
|---|---|---|---|
| Enhanced informed decision-making about place | Less face-to-face meetings. Consequences of short-term decisions ignored or 'forgotten'. | Faster decisions, accessing of information. Consumption more than citizenship actions. | Overload of daily decisions. Anonymity. Individual responsibility to satisfy needs. |
| Increased local knowledge supply and access | Weak development of local websites. Unknown usage of local knowledge. | Web-surfing to external sites. Shorter and more focussed access to local news. | National or global information. Codified, second/third hand knowledge. |
| Effective learning for self-development (human and social) | No clear evidence of learning based on critical thinking. | Entertainment and consumption. Concerns over health and risk taking. | Entertainment and new 'wants'. Aggression rather than conflict resolution. |
| Increased confidence to act responsibly | Declining 'locus of control'. Increased stress on parental responsibilities. Doubts over trust and intuition. | Individual users given more freedom and responsibility. Constant skills updating required. | Risk taking with wider external contacts. Trust and security issues. |
| Enhanced creativity, imagination and problem-solving | Impatience. Instant gratification. More pressure to copy and consume. Focus on changing identities. | Fewer design processes used. Instant gratification of imagination. Wider choices. | Newness highly valued. Stimulation of senses. Inventiveness in using ICTs. |
| Greater cooperation - more meaningful relationships, and engaging collectively for shared outcomes | Fluid relationships and obligations. Individual rights, roles and responsibilities. Increased competitiveness. Less open sharing. | More mobility. Ownership of individual tools. Less sharing. | Individual focus on needs, desires and goals. Sharing not 'rational' in order to 'survive' in more competitive world. |
| Critical reflection on needs and on relationships with place assets, incl. people | Reduced space and time for risk assessments. Anxiety. Confusion over decisions. | Little feedback. 'Memory' provided by tools. Less tacit knowledge of place. Short-term focus. | Simple solutions to complexities. 'Auto' thinking in 'Google age'. |

There is also considerable ambiguity about the overall benefits of ICTs compared to the 'old' technologies (for example, print media) and learning methods (for example, slower yet more reflective information searching, pre-'Google') that they are steadily replacing. While the internet allows interactivity it is still dependent upon people being motivated to actively engage in issues affecting their communities, as one respondent said:

> 'But you have to do something active to participate and follow the debates. On TV and radio you are passive. You have to be more motivated and people are not becoming so motivated (Youth advisor A, Sogn).

The print media also had advantages over the internet for communicating community information:

> 'There's no demand to have a well developed website...With the paper in the house, people eventually read every word....When people use websites of syndicated newspapers, it is possible that they link into content that's further away from the region. With the links they go out, not in, because the local content would be very news related from day to day and not very topic related...Those who have a newspaper in their houses do read every single word' (Communicator, Sogn).

> 'The local newspaper is still a major tool for communication. It's good to identify the people in the photos... I don't see the internet replacing the paper' (Innovator, Huon).

However, a trend in public debate was noted with traditional media:

> 'I need the local daily newspaper. [But] there is less local letters, more by same number of people' (Youth advisor D, Sogn).

There was a low or unknown level of local information available or accessed on websites, contradicting the expectation that new self-knowledge would be rapidly generated within communities through the deployment of digital technologies. Nor is there any clear evidence of the general belief that ICTs deliver more participation in local issues:

> 'We use the internet and all young people have the opportunity for planning (input) but they don't do it. It's very difficult to let them know about it....we made a website for young people with a chat room for discussion but they don't drop in, only a few do. I think they go instead to newspaper sites for the whole country, drop into some local newspapers and then it stops. They don't use very much time looking around. ...students use internet pages, you don't have to read it all, just the headlines. It's harder to hit them with new, exciting information' (Youth advisor D, Sogn).

Respondents were vague about how community members were using the internet, including, sometimes, family. This uncertainty also extended to how digital

technologies are enhancing learning and therefore capacity for decision-making about shared futures in places, especially in relation to needs and assets. Such a generalised lack of positive feedback is a paradox for the outcomes expected by the policies under consideration in this study (those intended to promote sustainability, regional innovation and democratic citizenship).

During some interviews, particularly in Tasmania, respondents appeared slightly surprised when asked if there were any negative aspects or costs associated with the deployment of digital technologies. It appeared as if they expected a discussion about such technologies in regional development to be only interested in benefits. In both regions, the general perception of digital technologies seems to be based upon a premise that their use and content has an overall neutral or benign impact on the relationships communities have with place. Such an assumption, however, is challenged by the significant linkages found between ICTs and issues concerning changes in community responsibilities for rural futures.

Several aspects of the data prompt the tentative conclusion that community assumptions concerning their capacity to adequately assess the impacts of digital technologies may be flawed. These findings include the high level of ambiguity over whether deploying digital technologies meets community needs and strengthen assets, and the apparent 'vacuum' of structured public debate and learning about ICTs. This last finding also reflects an assumption that 'the digital future' is inevitable, including its global and urban characteristics. Many respondents in both Norway and Tasmania perceive differences between rural and urban communities to be rapidly disappearing, with implications for quality of life based on place.

Respondents still had an overall belief that the community is capable of generating perspectives on shared needs and the assets underpinning them. This would allow rural communities to be 'resilient' and to maintain a continuity, in balance with the demand for change in a global world, especially regarding social and cultural matters. Respondents also saw minimal risk to their capacity to adapt to change and shape progress to serve their visions of a future quality of life. Yet the unchallenged, or most likely, 'unarticulated', vision of 'the digital future' could suggest a deeper loss of agency over change generally.

Confidence in their capacity to negotiate social and cultural changes is inconsistent with the locus of control issues raised by many respondents, including those trends

directly linked to factors of time, space, information and communication. The lack of time and space 'to think about ICTs' was implied in some responses. Only a small number of respondents directly challenged community expectation of rural continuity:

> 'They have a picture that the change is in the city only' (Educator B, Sogn).

The 'silence' in responses to the question of digital technologies' impact can be interpreted as belief in a capacity to adapt to the mediating role of technologies. As several respondents indicated, this optimism is based on previous experience with older technologies and the prevailing cultural beliefs in everlasting progress.

The matter of 'silence' has required careful analysis. It was initially downplayed, as questions about the role of ICTs were left to the end of the interviews, making it possible that respondents were, by this time, 'exhausted'. However, most interviews did not extend beyond the agreed time (30-45 minutes) and where they did the respondents maintained enthusiasm for the questions. It was also possible that the nature of the question may have been too complex or confusing. Again, in most cases the initial question was reframed to imply simple linkages to the issues they had raised themselves. The most likely reason for the 'silence' was that people did require much more time to think. Unfortunately this was not structurally possible towards the end of a long interview. When seeking verification of transcripts, it was decide not to specifically ask any further questions, which also precluded the gathering of additional data.

### 5.6 Capacity for informed decision-making on the role of ICTs

Uncertainty over whether ICTs are strengthening or weakening a community's capacity to achieve it's own definition of quality of life indicates confusion about the technologies as means to ends. Although a small number of respondents expressed concern about being 'subservient' to digital technologies, most had confidence that these new technologies could be adapted to serve needs and enhance quality of life. Such confidence implies the presence, at least, of 'incidental' learning to do so, as little evidence exists of any structured or semi-formal learning for decision making about content and usage. Even where they expressed concern over ICTs' impact on youth, most adult respondents appeared to project their personal confidence to

'adapt' onto others, including youth. That is to say, they projected their own motivations, abilities and opportunities to make informed decisions about the costs-benefits and selection of use and content onto others. Only a few respondents raised doubts over transferring their motivated capacities onto others in the community.

It is important to remember that all respondents were active users of ICTs, with many enthusiastically encouraging their communities to use these technologies. It is also possible that confidence to adapt and manage 'means to ends' was reinforced by the virtual absence of any perceived need for more data on the impacts of digital technologies, and the general emphasis upon individual user responsibility. The case data, however, raise the question as to what communities understand about the mediating affects of digital technologies in the change processes with which they are concerned. There is a need to verify capacity assumptions about competencies and supporting conditions by further examining each of these elements.

One respondent gave a personal insight into why there was little community debate about the impacts of digital technologies:

> 'Maybe, it's that everyone has weaknesses in new things, see new possibilities. For instance, my mother wants a new, faster computer. She formerly pushed restrictions on alcohol and focussed on ethics and values, but I never hear one single word from her about internet and problems. She only sees the possibilities, technology for her own use. That's how most people look at it. They see the new possibilities but they won't see the negative things. I'm not sure how much they are used to these negative things either' (Educator A, Sogn).

Respondents indicated that there was no monitoring or evaluation of the costs and benefits of ICTs of which they were aware. In both cases, this was another 'void' or 'vacuum' in informed decision-making about digital technologies. While most respondents acknowledged many positive aspects of digital technologies, they were clearly ambivalent about negative, 'hidden costs' or unforeseen future impacts on their community. It seems probable that the reason for this uncertainty is the shortage of credible information on costs-benefits, thereby making informed assessment impossible.

In Tasmania especially, respondents indicated that there was no community-wide discussion about the usage or content patterns of ICTs. They were uncertain about

what and how such discussions could occur beyond 'random and shallow' occasional media reports. In both cases the implication was that individuals had to find for themselves the information and tools to assist the adaption to ICTs within households, work places or social spheres. There were no locally focussed opportunities for feedback, no guidelines or tools for either consumer or citizen use and vagueness in the roles of government and business in building capacity for decision-making. Even the expectations on educational institutions were unclear:

> 'There is no discussion about how prepared young people are to use the tools. I feel the school system is totally out of contact with the real world. Young people have new equipment, computers, and mobiles and when they come to school they have to show the teachers. Schools are not able to teach about risks. Also most parents don't know anything about the internet and children are allowed to do whatever. It's a little bit crazy...and there are different levels among the children as some don't have internet at home' (Educator A, Sogn).

Individual user responsibility was clearly presumed, especially for parents. Overall, there was strong faith in more 'incidental' learning to guide the development of competencies to decide on the use and content of digital technologies. The following example reflects this belief:

> 'Today we are in the childhood of this way of communicating and we first see the bad sides of using it. In time we will find ways of avoiding these bad mechanisms. Maybe it will also make people value learning to use all their abilities. The bad sides come easily, automatically. The positive sides need working at. The bad side will make people more aware and seek values of rural districts. For example, Dutch have communities in western Norway now as they can hear silence. They go outside the village just to "live". That's why people will learn to use technologies in a better way. Schools are important to develop this lifelong learning for people using all their senses, listening, feeling, using and understanding nature. I don't think they can afford not to do it because you don't create the values by sitting in front of a computer' (Farmer A, Sogn).

The situation regarding community capacity to understand the impacts of digital technologies is outlined in Table 5.5. It also provides some basic indicators for gauging the level of competencies and conditions for informed decision-making.

**Table 5.5: Capacity to understand impacts of ICTs**

| Understanding impacts of ICTs | Affect on capacity | Exemplifying Quotes |
|---|---|---|
| Level of community debate | Positive expectations. Confusion, some anxiety | 'There's no big debate about it. It's there and it has to be utilised as it is. There's no question whether it should be there or not. You can't stop progress....There is no debate among users as such. The debate is between parents that we are worried about our children. We must control it somehow. There is no political debate. It's a conflict. Computer and data is there to be used and it's important that youngsters know the technology but then you have the conflict. It's getting too much. I think that like with a lot of technology, maybe you are ruled by the technology. You must be aware of it and educate the children (Farmer B, Sogn).<br><br>'There's discussion in the media about violence of video games and effect on young people. Exposure does have an outcome. But discussion waxes and wanes in response to violent activities at any given time. As long as there's balance in life overall, these effects are modified or neutralised. It's up to families to see that there's a balance' (Farmer A, Huon).<br><br>'A lot of families with problems do say they are concerned about the Internet and young people having access to inappropriate sites. But on a positive side, in a rural, isolated community, they can access education on-line. But that itself could be isolating, as people are not participating in a classroom socially as well' (Youth advisor, Huon).<br><br>'They are not saying that technologies are dangerous but we must know more about how to use them. It's not about making some restrictions on the internet. If there's a possibility to get rid of the negative things in use, this is the main aim. Of course you take away a little bit of freedom but most people say they don't need this freedom, for instance, pornography' (Educator A, Sogn). |
| Level of information and supportive conditions | Uncertainty. | 'I don't think there is enough support information about the effects of these technologies. Its still very early days. Apart from people flying by the seats of their pants and experience, I haven't heard of any science or written discussion. There are plenty of programmes to help families to help children with drugs so maybe a package to do with videos one day' (Farmer A, Huon). |
| Responsibilities for decision-making | User and parent pressures. | 'If the parents are not following up on the children closely, those with the habit of being on the computer can be there very, very much. Being too much on the computer, then you are lost there. If you are not aware of it then maybe you don't even know how to socialise in society' (Farmer B, Sogn). |

**Table 5.5: Continued**

| Understanding impacts of ICTs | Affect on capacity | Exemplifying Quotes |
|---|---|---|
| | | 'Some parents have so many pressures on themselves. Both parents working, children often coming home when nobody is there. Problem for the child if there's an immediate need, like bullying' (Youth Advisor, Huon).<br><br>'I don't know if people are thinking about impacts and are being aware of it. My impression is that the big companies that provide the mobile phones and the big telecom companies that earn money on people using them, are so focussed on earning money and not maybe on the moral and the consequences. I don't think they think it's their responsibility. Maybe people think it's the politicians' responsibility. That's the easy view, just blame it on the politicians, so nothing happens' (Agricultural advisor C, Sogn). |
| Assumptions about capacity to adapt to DTs | Optimism in managing | 'For mature people the increased use of technology is not a problem. There's a need to have contact that is only realised when you have a mobile. Your communication level rises with the capacity and then you become dependent upon it. Often done in transit so not taking away time from involvement in other activities' (Farmer A, Huon). |

When asked who should be responsible for the usage of ICTs, one respondent raised a number of important longer-term issues:

> 'People are not thinking about that. We have expectation that there will always be new technology. It's like we expect development all the time and it's up to you if you want to use it or not. So maybe now there's a gap in Norway between the people who know how to use the information technologies and those who don't. There are a lot of older people who can't communicate through the internet and mobile phones. Maybe soon in an election you can vote on your mobile phone. What would happen then to all the people who don't know how to do it?'

And, when asked what impact such voting by mobile phones would have on decision-making, the response was clear:

> 'I think people would make the decisions so fast and you can do it whenever and wherever you are. Now, when you have to physically go to vote, you start to think as you go into a room for your own and you have lots of lists. You think more about it' (Agricultural advisor C, Sogn).

In a later interview, another Norwegian respondent (when discussing democracy) was asked specifically about community information concerning the impact of any future use of mobile phones for voting:

> 'No discussion on that. Maybe more people would vote but I think when you go to vote, you do it. You've decided what to do before'.

And, when asked about general trends in responsibility for democracies, the response indicated doubt:

> 'It's a very difficult question. We don't think about democracy and that's dangerous as we don't have to care too much about it' (Youth advisor D, Sogn).

In the context of the complex challenges facing citizens when they decide on their vote, this is a significant issue involving risk. As the deployment of digital technologies is rapidly expanding into new areas of human actions, future developments in 'e-voting' will require closer attention. Similarly, the issue of a 'digital divide' between people who have differing access and skills to use ICTs is directly linked to effective democracy. These issues will be considered in greater detail in later chapters.

The fundamental importance of critical thinking about the 'end' purpose of developing competencies for 'the digital future' was raised by at least one respondent:

> 'The most frightening thing is that I.T. specialists in education have a view that keeping up with technology is sufficient. The problem is they don't understand what this is about...the substance, what are you going to create and what jobs from the basic technology?' (Educator B, Sogn).

An analysis of the case data shows that the current capacity for informed decision-making about the impacts of digital technologies is relatively low. Even though the recognition of issues is higher among Norwegian respondents, both rural regions reflected similar assumptions about capacity to adapt, negotiate and manage ICT-mediated changes. At this stage it is possible to make several tentative conclusions:

1. Digital technologies involve issues of concern to rural communities regarding capacity to develop responsibility for the future of place. It has been established that there are indirect links to ICTs as tools mediating information and communication, and time and space, which are affecting relationships between people and place. There are also direct linkages involving usage and content patterns.

2. Community capacity to make informed decisions on the impacts of digital technologies is weak. Assumptions about community capacity to adapt are contrary to low levels of debate (communication) and access to information about impacts to assist decision making (including costs-benefits analysis and negotiating and managing risks).

3. Question of capacity, in terms of competencies (internal) and conditions (external), appear to have minimal impact on formal and informal learning processes. A general ambiguity over the benefits of ICTs suggests confusion about digital technologies as means to ends.

4. Such low capacity for informed decision-making is a major impediment to empowering communities to develop their own policy visions of the future, including that of 'the digital future'. It undermines the community 'locus of control' over change processes of concern to them and places at risk the learning outcomes envisaged in policies addressing sustainability, innovation and citizenship.

These findings are based on two cases that were selected on the basis of 'rural isolation', and provide insights into the unprecedented acceleration of changes in information, communication, time and space mediated through ICTs. However, while conditional conclusions can be drawn from the data, it is important to situate these two rural cases within their wider contexts.

This study has considered the conservative attitude to change held by rural communities and has focussed on changes over the last decade that coincide with the deployment of ICTs. Although this has formed an 'empirical worldview' of respondents in two countries that is remarkably similar, it still requires verification; in particular, whether issues of concern about the future of place are being linked to digital technologies more broadly within Norway, Australia and other industrialised

countries. The inclusion of a non-rural context will also clarify levels of capacity for informed decision making on the impacts of ICTs *within* rural communities.

Relationships between several factors identified by the case data will be explored in the wider context. These include:

- Changes in motivation, abilities and opportunities for decision-making about the future of place, and also the role of ICTs
- Confidence to adapt ICTs to serve as means to ends (quality of life)
- Levels of capacity for informed decision-making (both competencies and conditions)
- Sense of locus of control over 'the digital future'
- Perception of responsibilities for learning (capacity building).

These relationships will also be examined in the next chapter in the context of policy trends.

## 5.7 Conclusions

This chapter has shown that a significant gap exists between the indirect and direct connections made by respondents regarding their concerns over the impact of digital technologies. The mediating role of ICTs in time and space, and in their implications for the nature and quality of information and communication, are important factors in changes in community capacity for responsibility for the future of rural places. The case data indicate low recognition of the role of digital technologies, in contradiction to the linkages that have been established elsewhere in the data. Analysis of the content and usage patterns of these technologies suggests that they are important influences on community capacity for shared responsibility for place.

The level of informed decision making about digital technologies is very low, as revealed by the ambiguity of responses to the costs and benefits of ICTs in meeting community needs and the maintenance of shared assets. Yet there is a clearly discernible tension in rural communities regarding their capacity to negotiate and manage change and to determine their future quality of life. Such discrepancy suggests that assumptions regarding digital technologies as 'means to ends' require

further examination. The general belief that digital technologies are 'singularly' beneficial agents of change cannot be confirmed by the findings of the case studies. There is no clear evidence that ICT usage and content patterns are enhancing community responsibility for the future of place.

The grounded data from the two case studies gives only preliminary insights into the complex relationships between capacity to shape the future and the role of ICTs. The factors identified require, for verification, that their wider social contexts be considered more closely. A broader investigation of society's capacity to make informed decisions about the role of ICTs will therefore be undertaken in the next chapter.

# CHAPTER 6: THE CASE FINDINGS IN A WIDER CONTEXT

## 6.1 Introduction

This chapter considers the wider context within Norway, Australia and elsewhere. In particular it asks whether the trends in community capacity to take responsibility for the future of place are contrary to what is generally expected in progress towards 'the digital future'. It focuses upon trends related to everyday deployment of digital technologies, particularly in their impact on people's thinking and acting about self, others and their environs. It then examines the level of informed decision-making about the usage and content patterns of ICTs.

The rural case studies showed clear linkages between digital technologies and issues of concern to rural communities. Yet this data also showed that people were generally uncertain, ambiguous and confused about any direct evidence of such linkages. At the time of collecting the case data, public discourse about the effects of digital technologies was minimal and reflected the view of respondents that little information was available to assist their decision-making. Using the grounded theory approach, more evidence has since been located, aided by increasing media coverage about the use and content of ICTs.

In both cases, the rural respondents perceived that their communities were changing their relationship with place at the three levels of self, others and environs. When analysed in terms of needs for self development, people's relationships with place were increasingly oriented towards individual material consumption and interests. When analysed in terms of capitals to support such personal needs, people were taking *in-situ* assets for granted, de-valuing their importance and relying more on *ex-situ* support. It could be concluded that, as relationships with place become more individualistic, the community's overall capacity to share responsibility for the future of place will decline. This trend was concluded from the case data that showed motivation was more competitive than cooperative, abilities (knowledge, skills and values) were less place-based, and opportunities for engaging face-to-face were also declining. Temporal and spatial factors were particularly strong influences on people's responsibility for decisions and their consequences, as the trend was towards

private space experiences with less time to engage with wider place-based relationships.

Contextual evidence gained from the wider public discourse clarifies and also expands the factors and relationships identified in the case studies. Seeking broadly representative data limits in-depth analysis to just a few examples. However, it is important to ground the perceptions of the respondents in realities beyond their specific localities. By doing so, both the significance of the role of digital technologies in broader community concerns about the future and the present conditions for community analysis, monitoring and evaluation of the deployment of ICTs in everyday life, can be clarified.

An important qualifier for this chapter is that it does not examine research into factors related to digital technologies, except where such research has been reported by mainstream media. Its purpose is to explore the context of public discourse to verify the perception of case respondents' that little accessible information exists to assist their decision-making about the benefits and costs of ICTs. This chapter therefore focuses upon informal learning conditions, to further understand case respondents' ambiguity over the deployment of digital technologies. While the context focuses on Australian media reports, attempts have been be made to include Norwegian and international sources.

## 6.2 Issues effecting changes in needs for quality of life

As discussed in Chapter Two, indicators of successful human and social development are the attainment of basic psychological and higher needs. In the case studies undertaken, the goals of rural residents show strong social and landscape linkages to place. The assets of place and the relationships embedded within them provide the supportive conditions for needs satisfaction; they act as the 'means' to both individual and community 'ends'. In both case regions, indicators of a quality of life include a sense of identity, belonging, trust and security gained from the physical interaction with nearby people and other spatial and temporal factors of place (such as landscape and quietness). These elements were particularly important for satisfying the needs development of future generations, with a strong emphasis upon supporting a safe and healthy childhood.

However, respondents in the rural case studies perceived historically significant changes in relationships between people and place that flowed from trends towards more individualistic, competitive and consumption-oriented thinking and acting. So, to what extent are such changes in rural community perceptions of needs underway in the wider society? Are the expected outcomes for human and social development being realised as individuals and communities move further into the 'digital era'?

Although attainment (and even perception) of needs is dependent upon individual circumstances, the trends highlight the challenges facing communities as a whole. An examination of changes in how needs are both perceived and satisfied is, in effect, a study of human assets (or human capital). This is undertaken, and following this, the other assets of social, cultural, political, financial (economic) and natural capitals that support human self-development will be explored.

All assets involve relationships within communities, and in terms of human development the focus is upon the relationships that individuals have with 'self'; that is, their motivations and abilities to cope with change and their sense of responsibility to themselves and their own long-term well-being. We have seen that many case respondents felt that their communities were experiencing historically significant shifts in how people perceived needs. They also pointed to changes that could impact on the well-being of their communities, especially children. These challenges are explored within the categories of basic human needs and self development, beginning with the physiological needs of survival. Because progress towards improved quality of life is now widely perceived as dependent upon the deployment of digital technologies, those trends that are contrary indicators of human self-development will be analysed for temporal, spatial, informational and communicative factors, with direct evidence of ICT use and content highlighted.

6.2.1 Survival (basics of food, water and shelter, plus physical health requirements, such as sleep and quietness)

Throughout both case studies, respondents observed that basic needs are undergoing change, and especially so in food choices and physical well-being. How rural people adjust their food intake to a less physically active lifestyle could be a useful indicator of their general capacity to successfully adapt to the unfolding 'digital age'. A similar indicator might be the extent to which basic needs are recognised and understood as priorities for quality of life.

The most fundamental physiological requirements for the human body to function as a system are water and food. Although equitable access to safe and reliable fresh water is a vital indicator for quality of life, there are many regions in 'high rainfall' Tasmania and Norway where drinking water must still be boiled. This anomaly corresponds with a shift towards 'individual responsibility' and increasing consumption of 'quality' bottled water and soft drinks. The quantity of water consumed has also become an issue, as the costs of these drinks (together with increasing consumption of caffeine, alcohol and other drugs) is resulting in low fluid levels in the average person at any given time. Dehydration impacts overall body performance (including thinking capacity) yet are ignored in much information and communication about health.

Trends in everyday decisions about food consumption are also an area of contraction regarding basic need satisfaction. The general belief is that Tasmanians and Norwegians have access to sufficient food to sustain health, but poverty and poor nutrition remain in both countries. Despite educational efforts, individual decisions about the type and level of food to consume directly undermine many people's long-term health. Although everyday choice depends upon the financial capacity of individuals and availability of options, it is clear that at these are not simple 'rational' economic decisions to meet physiological needs. Complex social, emotional and other psychological needs are involved. Because trends in food consumption emerged as a critical issue in the cases studies undertaken it is important to give closer attention to this.

On the surface, everyday individual food choices appear to be 'free' decisions without consequences for longer-term development of community assets. However, important 'hidden costs' are carried forward in emerging negative health trends to be carried by society as a whole, such as escalating loss of economic productivity and demands for medical treatment. One clear, world-wide trend reflects this situation: the overconsumption of mainly processed food. Between 2005 and 2008, the economic costs of an increasing overweight population in Australia tripled to $8 billion with the number of 'obese' Australians rising to four million (ABC TV, *News*, 22 August, 2008). According to a 2007 OECD health report, Australia has the fifth highest level of obesity in the world - 22 percent of adults (with rural Tasmanians the most overweight) - and is fast catching up to USA at 32 percent (*Mercury*, The [Hobart], 15 November, 2007). Norwegians, though lighter by comparison, are fast becoming the most overweight people in Europe (NSD, *Nytt*, 2007). The

consequence is that life expectancy is likely to fall as diseases such as diabetes, sleep apnoea and various cancers rise (*Mercury*, The [Hobart], 15 November, 2007).

In Australia, a dramatic rise in diabetes led Queensland health officials to conclude that 'the current generation may be the first to die younger than their parents' (ninemsn.com.au, 21 October, 2008). The prevalence of 'junk food' advertising is a prime factor here, cause as it encourages reduced consumption of the healthier 'raw' produce (especially locally sourced) that sustained previous generations. For example, in Norway, potato and fish consumption has markedly declined among youth and higher income groups. In an article entitled 'The Politics of Fat', *Time* magazine linked the annual US$ 10 billion spent on food advertising to the obesity epidemic that is 'killing' a generation of Americans (2006a).

One factor in obesity is the 'incorrect perception' that many people have of their weight, with males underestimating and females overestimating their real weight. According to a Queensland University of Technology study, data from Australia's 2007 National Health Survey showed males tending to ignore information about risks, while females' negative perceptions of their weight resulted in eating disorders, including anorexia (*Mercury*, The [Hobart], 11 April, 2008). Such problems are also now reported in boys, along with increasing steroid use as young males become preoccupied with body image, ignoring longer-term health risks, including the immediate side-effect of increased anger. One in five Australian girls has an eating disorder as they try to achieve 'an image', resulting in a 'massive' increase in the problem since 2000 (ABC Radio, *News*, 20 July, 2007). An 'obsessive competition' among girls led to an 'epidemic of starvation' at a top private school in the UK (BBC Radio, *World Service News*, 20 November, 2002) and the global prevalence of pro-anorexia websites encourage such 'starvation' for fashion (*Mercury*, The [Hobart], 23 August, 2004). The 'sexualised images of thin bodies' also increasing anxiety among 5-13 year old children which 'surprised' parents and medical staff (ABC TV, *The Midday Report*, 28 May, 2008).

There are considerable risks to the well-being of individuals from these food consumption trends, especially as they jeopardise an improved quality of life for children, which, according to the case studies, is a paramount social and individual goal. However, the issue of a reversal of life expectancy from preventable diseases has not galvanised community action. The factors of time, space, information and

communication emerge in possible explanations, with the following points being made about each.

Time. There is less time spent to preparing one's own food, reinforcing the convenience of higher processed or 'fast food'. According to a report in the *British Medical Journal,* speed of eating prevents stomach feedback signals to indicate 'sufficient satisfaction'. Such acceleration in speed of eating has not allowed humans to overcome the now obsolete but evolution-embedded impulse whereby eating food fast was linked to scarcity of supplies (BBC, *Online News*, 22 October, 2008). The resulting over-consumption of all food is rarely linked to speed of eating in public education campaigns. Global attempts to generate a 'slow food movement' have not been adopted in the mass, nor have initiatives for 'school garden to kitchen' programs in Australia. The omnipresent message that 'faster is better' in the marketing of digital technologies may be negatively reinforcing messages of the 'snack food' industry: 'eat more, more often'.

Space. The use of private (home) space for 'slow' preparation of food has been affected by the trend towards 'eating on the run'. Many 'fast food' outlets are in low-income urban locations where there is less household learning about health risks, traditional knowledge of cooking or how to cope with stresses such as 'night shift' work. These locations (including some rural regions, especially in Tasmania) also often have less access to fresh food due to the centralisation of wholesalers. Ironically, 'eating alone' is increasing due in part to a 'vicious cycle' of less exercise (especially outdoors), a sense of 'shame' of being overweight in public spaces and a 'fear' for personal safety. Increasing 'home entertainment' consumption appears to reinforce this cycle, offering a 'substitute' for the human need to socialise over meals. However, it is increasingly common to observe people eating while 'multi-tasking' with technology (such as using mobile phones, online games or video/DVDs) means that both 'reserved' time and space for eating are fading.

Information and communication. The over-consumption of food in relation to the utilisation of ICTs and mobility reflects mainstream marketing of processed, 'convenience' food for 'fast gratification' or 'social image'. Compared to public education content, the supply of information about food consumption is overwhelmingly dominated by commercial interests. Governments in Australia have been reluctant to adopt 'nanny state' interventions in home kitchens or restaurants as they adhere to 'free market' principles. A former federal Health Minister, Tony

Abbott (now leader of the [conservative] Liberal Party of Australia) declared that 'fast or junk food' advertising to children was not a factor in obesity but simply a matter of personal responsibility, particularly for parents (ABC TV, *Four Corners*, 17 October, 2005). He rejected a call from the International Obesity Taskforce that 'children be protected from exploitative marketing techniques used on the internet, television and other media' (*Mercury*, The [Hobart], 6 September, 2006). In Australia, openly aggressive electronic marketing to children continues to test the capacity of parents to cope with pressures exerted by their children, while in Norway the long-standing restrictions on advertising to protect children from unnecessary commercial pressures are being 'short circuited' by global advertising on the internet.

The most prolific advertisements in Australia and Norway are from US-based 'fast food' corporations, including one in the early 2000s that showed young Australian boys (at least one clearly overweight) competing to see who could eat the most. Most marketing of processed and 'fast' food associates the product with 'social fun and sport' (despite most consumers eating alone) and some even suggest that physical exercise is undesirable, implying that there are 'easier and instant' alternatives to 'sweat'. The concern of many rural respondents that children were generally becoming 'de-motivated' to engage in prolonged physical activity appears to be a perceptive insight. Where individuals seek to remain healthy there is a more widespread message about 'technical solutions' to the excessive consumption of food. Both commercial and social marketing of 'innovative' pills, diets and surgery (particularly stapling and stomach pumping) are considered 'medical breakthroughs' in commercial news bulletins. Yet the role played by the pharmaceutical industry in such research is far from transparent. In 2009, the Australian Government agreed to costly rebates from the tax-funded health system for 'obesity' surgery, despite it being clearly 'an end of pipe solution'.

In addition to food, another key indicator of basic needs satisfaction is access to necessary shelter. While homelessness has increased in both Norway and Australia since the economic booms of the mid 1990s, there has been a noticeable shift in public perception about what constitutes 'adequate shelter'. The dramatic increase in the size of private residential homes (especially in Australia) is a paradox as the number of people living in each household has actually fallen. The change relates to new expectations of personal comfort and possessions to satisfy psychological needs, including making the home a more important symbol of success and as private space for daily entertainment. The continuous 'updating' of digital technologies has also

created the need for expanded 'specialist' spaces (such as 'home offices') as the boundaries between work and life blur. They may also reinforce the increasing amount of time spent inside homes to 'reaffirm' decisions to invest in devices for entertainment and individual use.

The irony is that these consumption trends have caused a massive rise in personal debt. The desire for new and bigger homes has driven mortgage loans higher than they would otherwise be. Similarly, the purchase and maintenance costs of digital technologies is the most significant new factor in long-term credit card debt and 'living beyond one's means'. The financial insecurity created by such 'risk taking' has itself become a critical factor in the mental health and well-being of many people. Before addressing the psychological health dimension, it is important to check the trends in another vital indicator of physiological need: adequate rest and sleep.

Contrary to expectations that ICTs will help provide more leisure time, the number of hours worked by people in both Norway and Australia has steadily risen. Even with increased commuting time it would be assumed that humans still manage to maintain a balance between hours slept (recommended eight for adults and ten for children), recreation, fitness and personal relationships. However, the opposite is true. Most people are now 'time poor', with sleep and the important aspects of quality of life, particularly relationships with family and community, all getting squeezed. It appears that the very tools to enrich the 'standard of living' may be eroding a fundamental need.

Changes in sleep patterns constitute some of the strongest evidence of the impact of digital technologies on human needs. Lack of sleep is a factor in the rising level of childhood obesity and directly relates to the use of digital technologies and TV in children's' bedrooms (WIN TV, *News*, 20 October, 2006). A survey by the Medical Benefits Fund showed that 51 percent of Australian adults suffer sleep deprivation. This was blamed on longer work hours and other work related stresses by 12 percent of respondents, and on computers and TV by 9 percent (MBF, 2007; news.com.au, 6 November, 2007). Up to 35 percent of Australian children have a sleep problem, according to a survey by sleep clinical psychologist Andrew Fuller of the University of South Australia's Centre for Sleep Research. Fuller believes excessive use of mobile phones and the internet during the night is reducing sleep, especially for youth, due to 'the idea that you're accessible and alert 24 hours a day' (ninemsn.com.au, 13 August, 2007). An associated finding is that children's 'chronic

sleep deprivation' is compounded by the effects of caffeine and junk food consumed while being 'over stimulated' by digital technologies, all of which leads to poor learning and increasing disciplinary problems at school (ABC TV, *Four Corners*, 13 August, 2007).

In a feature article entitled 'The Sleep Nightmare', Australia's main national newspaper, *The Australian*, discussed a wide range of issues in which late nights were associated with damage to children's cognitive abilities. Included in the article was a conclusion sourced to a number of unidentified 'major studies' in the US that children of all ages sleep up to an average of one hour less compared to the 1970s. The trend is due in part (the studies show) to the 'over-scheduling and over-stimulating' of children's lives, primarily via the use of digital technologies. The impacts are 'much more severe' than in young adults and include rises in obesity and Attention Deficit Hyperactivity Disorder that result in deteriorating 'academic performance and emotional stability' (Bronson, P., 2007). Other studies (including one from Japan in 2003) confirm this trend and show that younger children are awake longer than before, going to bed two hours later than in the 1980s (reported in the *New Zealand Herald*, 2008). Issues concerning physical stamina, memory and other cognitive abilities are also directly related to the rising 'sleep debt'. The author has been told informally by parents in Tasmania and Norway that mobile phone use in bedrooms is very difficult to monitor, and by educators that sleep fatigue (including from online game 'binges') is causing school disciplinary problems.

Finally, some trends in other long-term physical health issues are directly related to the deployment of digital technologies. There are reports of increasing 'short-sightedness' (due to closer and more frequent screen viewing) and of hearing loss (due to the noise level of music played on many MP3 and iPod devices exceeding the industrial safety standard). Nearly 70 percent of 16-24 year old Australians now suffer damaged hearing and medical authorities are alarmed that youth perceive 'severe permanent damage' to be somehow 'reversible' (ABC TV, *The Midday Report*, 1 June, 2008). While 'the jury is still out' on whether prolonged use of mobile phones cause brain cancers, the media occasionally and sensationally reports research suggesting the possibility of a 'frightening situation' in the near future (for example, (Nine Network TV, *60 Minutes*, 5 April, 2009). However, some 'unexpected' results were found in the first major study into the impact of mobile phone use by pregnant mothers on their children's development. US and Danish research showed that mothers who used mobile handsets were 54 percent more likely

to have children with behavioural problems (cited by G. Lean in *Independent,* The [London], 18 May, 2008). The research concluded that 'exposure to all cell phones prenatally and, to a lesser extent postnatally, was associated with behavioural difficulties such as emotional and hyperactivity problems around the age of school entry' (Diavn, Kheifets, Obel and Olsen, 2008: 523). In discussing such findings, it is important to note that longer-term consequences of mobile phone use remain unknown, as more time is required to establish credible longitudinal findings.

6.2.2 Security (safety, absence of violent conflict, and trust in relationships)

A basic human need is to establish effective relationships with others, especially face-to-face. This has always been a particular challenge in the transition between childhood and adult life. Traditionally, in egalitarian societies such as Australia and Norway, the need has been nurtured by regular physical interaction across different age groups in public spaces, such as sporting venues and natural/outdoor areas. The case studies indicate that the provision of such safe, open and trusting environs for a child's development are more readily obtained in rural areas. Yet, the trend in levels of anxiety and insecurity, especially among youth generally, suggests that differences between rural and urban life are rapidly decreasing.

Children and young adults increasingly feel a necessity to be contactable and alert 24 hours a day (ABC TV, *Four Corners*, 13 August, 2007). Many keep their mobile phones on during the evening, with the result that sleep is disturbed, again with serious implications, as previously discussed.

Rising levels of anxiety seem to involve both perceptions and realities of increased risk to personal safety due to aggression from others. Young people in particular may respond to greater exposure to 'entertainment' images of violence in social conflict situations. Yet, in the space most expected to nurture basic psychological needs – the family home - new trends in domestic violence are emerging.

In Australia, by possibly following the 'role model behaviour' of violent (and now absent) fathers, younger and younger boys (and increasingly, girls) are becoming aggressive towards single mothers and even younger siblings. A 26 percent increase in violence against parents (including fathers) by children occurred between 2004 and 2008 (ABC TV, *7.30 Report*, 29 July, 2008). Additionally, there has been a massive surge in internet-related crimes against children. In the US, the FBI recorded a 2000

percent increase in such crimes between 2000 and 2005, and both it and Interpol have warned Australian families to prepare for greater risks as broadband speeds improve, allowing faster dissemination and access to sexual and violent communication (ABC TV, *7.30 Report*, 30 October, 2006). The internet is also linked to a dramatic increase in very young, sexually aggressive children. Australia's National Child Protection Clearing House indicated that medical authorities were 'alarmed' that 10 year olds may now be acting out behaviour from viewing 'really violent and sexually explicit material'. In Canberra, the most affluent and 'wired' city in Australia, the increase was over 2000 percent between 2000 and 2003 (ABC, *Online News*, 26 November, 2003). In Tasmania, a 'dramatic' rise in inappropriate sexual activity perpetrated by 5-10 year old boys on other children has been reported (ABC TV, *News*, 1 May, 2008).

Outside the home, school is the main space for a child's development, yet here aggression among children (and towards teachers) is rising in both Australia and Norway. In each country the frequency of bullying has increased, with one in four Australian primary school age students being repeatedly bullied (the highest rate in an international survey of 40 countries). Although face-to-face bullying has always occurred, the use of digital technologies allows new 'covert' forms that may also encourage the surging number of children suffering 'anxiety or other mental illnesses' to bully (*Brisbane Times*, 14 December, 2008). In 2009, Tasmania was reported to have the highest rate of school cyber-bullying in Australia, with 16 percent of students from grade 4-9 being bullied this way (*Mercury*, The [Hobart], 3 June, 2009), whilst simultaneously in the Arctic region of Norway, indigenous Sami communities expressed concern over the advent of cyber-bullying (*Aftenposten*, 4 June, 2009).

An increasing concern with the accelerating rate of 'cyber-bullying' among children is that it has moved from the public spaces, such as schools, to private and traditionally safe locations such as homes and bedrooms. The use of 'hate' videos, especially among girls, and increasing abuse by older boys towards younger boys, affects the physical and mental health of more and more children (ABC TV, *Four Corners*, 6 April, 2009). The filming on mobile phones of 'schoolyard brawls' by students who then post them on YouTube has alarmed educators as 'being out of character', as was a public 'rampage' by senior boys at a top Melbourne private school (*Age*, The [Melbourne], 21 October, 2008). In 2006 several reports across Australia of 'unprecedented' on-field violence among young 15-17 year old football

players, including attacks on umpires, puzzled sporting authorities. Anecdotal evidence suggests that the problem is affecting younger players, causing new forms of anxiety and withdrawal from participation. The insecurity felt by many officials in these games has also reached new levels, making it harder to recruit volunteers (such as umpires). A similar situation is also beginning to emerge in sport played by girls, such as netball and basketball.

Perceptions about personal security become reality as rates of serious violent crime increase. Across the Anglo-American world, the fear of assault is encouraging more youth to carry small kitchen knives and then to use them in an apparent 'lack of a sense of reality about using a weapon' (*Otago Daily Times* [Dunedin], 2009). While youth crime has fallen in most categories, violent assaults continue to rise across Australia, with fatalities (mainly of strangers in public spaces) indicating a 'disturbing' trend in 'the level of violence that people are inflicting on others' (*Age,* The [Melbourne], 16 July, 2009). The sense of insecurity in public places has also risen sharply in relatively safe Norway, with the number of sexual assaults (including rape, incest and pornography-related crime) increasing by 20 percent between 2006 and 2007, and rapes in Oslo doubling between 1998 and 2007 (*Aftenposten*, 21 January, 2008). Although it is difficult to locate clear references to the role of ICTs in these media reports, the trends correspond to an increase in the supply and apparent demand for culturally violent content in entertainment products and services.

One trend in insecurity that is very clearly connected to the use of digital technologies is the level of unprecedented fear of 'stolen identity', with its financial and social consequences. While digital technologies have aided information flows they also enable criminals to exploit the same spatial and temporal freedoms to violate privacy. Identity theft is explored further in the next category.

6.2.3 Identity and belonging (including affection, friendship, solidarity, tolerance, privacy, memory, personal ethics, encouragement and esteem)

The case studies indicate an increasing tendency for individuals to expand their personal activities as consumers rather than increased involvement in community issues. More competitive and self-absorbed thinking changes the way people see themselves in relation to others, which affects perceptions of public rights, roles and responsibilities. Indirect confirmation of such a trend can be seen in the amount of

information and communication now focusing upon personal lives, as 'identity' becomes more defined by image and everyday 'exploits' - the events and activities in which people are engaged - rather than such 'inner life' qualities as experiences, memories and longer-term preoccupations. The names of the main social networking sites of Facebook and MySpace reflect this preoccupation with continuous and rapid updating of everyday life. The text-messaging site, Twitter, extends the 'living in the moment' to new levels of 'self-reporting' and YouTube allows individuals to express their personality even further. And, unlike the reach of previous technologies, audiences are potentially global and instant.

While ICTs expand the freedom to create and share they also lead to greater complexity in the issues associated with identity and belonging. Online social networking sees new forms of competitiveness and dependency emerging, especially among youth, that also involve a more fluid, fretful and unstable 'self-image' at the core of which is dissatisfaction with appearance, possessions and 'lifestyle'. The opportunity to create new identities and 'live' daily life in alternative virtual worlds, such as Second Life, is pursued by many. (In this form of interactive online games, a player creates their digital 3-D 'avatar' [internet persona] as a long-term resident of an imagined place.)

However, more common is the daily obsession of many people to communicate their 'exploits' in the quest for a brief but global 'fame'. Excessive competitiveness in the crowded space of social networking sites (where millions profile themselves) leads to exaggerated and often personally damaging behaviour. The 'self-harm' risk-taking associated with 'nihilist' youth sub-cultures in American suburbia (and popularised in the 'Jackass' films and similar television shows) has moved onto the internet with round-the-clock access and interactivity. According to one media report, Australian children, including those in regional areas, now post videos of themselves to gain 'five minutes of fame' on the internet. As one 15 year old said, 'You've got to hurt yourself to be entertaining to others'. An American website involved in paying $250 for 'acceptable' videos, justified internal injuries and vandalism of public spaces as simply individual freedom 'to push the limits'. (Nine Network TV, *60 Minutes*, 11 November, 2007). Some Australian media reports of such risk-taking have also eschewed 'responsibility' by sensationalising behaviour such as driving stolen cars blindfolded and otherwise encouraging a 'blurred reality' among youth (Nine Network TV, *A Current Affair*, 17 July, 2006).

New forms of 'self-damaging' behaviour prompted by digital technologies include the posting of nude photos and sexual activities online. Over 20 percent of American 12-17 year olds admit to 'sex-ting' such images of themselves and others, often for money. Although they describe this use of mobile phones as 'fun', criminal charges of child pornography may apply (SBS TV, *World News*, 15 March, 2009). Another survey by the Seattle Children's Research Institute of young US users of MySpace indicated frequent self-reporting of substance abuse, violence and sexual risk-taking by 54 percent (Moreno, et al., 2009). It was reported that the constant and public 'bragging' by these users is encouraged by a perception that such behaviour 'must be the normal thing to do' because 'everyone looks at everybody else's profiles'. That employers and public authorities can make the same observations appears to be ignored.

The pervasiveness of digital technologies is linked to other changes in behaviour in public spaces. In Tasmania, sporting authorities were dismayed when hundreds of 'instant supporters' appeared on Facebook defending a young footballer's deliberate exposure of himself on live television as acceptable 'fun' that did not warrant disciplining or counselling (ABC TV, *News*, 25 June, 2009). Another trend observed in Australia (and shared by all Anglo-American countries) is the 'negative self-esteem' T-shirt with messages such as 'I'm a drunk' or 'I'm a slut', as part of a general reversal of traditional morality which turns 'bad' into 'good'. According to data from Nielsen Net ratings/NetView, the social acceptance of pornography is also undergoing rapid 'normalisation', with 35 percent of Australian internet users regularly visiting such websites. One in three women and one in five teenagers were doing so, reinforcing concern among psychologists and relationship counsellors of a 'a new and growing cause of relationship breakdown' due to 'compulsive' usage (Horin, A., 2007).

Dissatisfaction with self-image in Australia is also reflected in an annual growth of 10 percent in cosmetic surgery. The rate is the highest per capita in the world and is based on psychological rather than medical need (ABC Radio, *AM*, 13 March, 2008). The increasing use of photos on mobiles and web pages to define 'personality' parallels this trend. The need to compete for body image and 'looks' has become the 'biggest worry' for 14-16 year old Australian girls who report that 'lots of competition' now exist (Nine Network TV, *A Current Affair*, 12 May, 2008).

As individuals place more personal information on social networking sites and engage in risk-taking behaviour on mobile phones, the problem of 'identity theft' grows. While the loss of private information has obvious financial implications (which will be discussed later) there are also serious implications here for security of identity and belonging. Despite the efforts of online chat rooms and sites such as MySpace and Facebook, personal information and profile pages are increasingly hacked, especially in public spaces such as 'Wi-Fi hot spots' (ABC TV, *News*, 4 August, 2007). Users are either becoming stressed from having to constantly change passwords for accounts (including blogging) or are becoming complacent about the risks. In one high-profile example, the wife of UK's new head of MI-6 secret intelligence unit posted full family details and lifestyle information on Facebook. This did not surprise an internet security expert because 'people are not aware' that strangers can access, locate and break through restrictions on viewing social network pages (SBS, *World News*, 6 July, 2009).

It may also be that changes in the quality of close personal relationships can be sourced in part to digital technologies. A Norwegian Social Research study of youth has found that it is 'becoming rarer to have a best friend', especially for boys. Although mobile phones and online chatting have seen a trend towards less expression of loneliness, there has been a 'dissolution of close ties' (*Aftenposten*, 21 December, 2005). Anecdotal evidence obtained in private discussion suggests the same trend in Tasmania, with many children being more uncertain about who to trust. The increasing tendency for adults to 'express their love' by constantly checking the whereabouts of their children or partners raises doubts over the development of quality and trusting relationships, especially when such 'insecurity' or 'paranoia' extends to checking phone records and emails. In late 2009, an American company announced plans to distribute text message 'spy ware' for Australian parents to install on their children's mobile phones (ABC Radio, *News*, 29 October, 2009).

6.2.4 Self-worth (including freedom, creativity, understanding of potential, curiosity, imagination, intuition, mediation, autonomy, dissent, recreation and access to space and time)

Opportunities afforded by digital technologies for a more 'enriched, independent and free' life appear to be curtailed by a need to continuously communicate 'everyday life' online. Thinking and acting about wider relationships and longer-term issues is limited by a pre-occupation with the 'here and now' of events and activities. The

focus of immediacy afforded by ICTs can reduce time and space for thinking through the complex challenges involved in self-development. It can also unintentionally lead to self-destructive 'addictions', which reduce the capacity for creative recreation, especially within an individual's physical environs. Although many people can be heavily reliant upon ICTs without suffering emotional problems, habitual over-reliance can be described as an addiction. According to Diane Jones, many young Australians suffer 'withdrawal symptoms' of panic and agitation when they do not receive messages on their mobile phones (Queensland University of Technology, 2006). Her national survey found one in five users had an 'unhealthy obsession' with their mobile phones (ABC, *Online*, 2 February, 2007). A smaller study of use patterns of social networking sites, found that young Australians 'are becoming addicted' as they 'lose track of time', especially in a 'never ending' exploration of others' profiles. The most 'compulsive behaviour' comes from white collar workers and university students who may access sites up to 20 times a day. One indicator of addiction to online activity is the experience of 'negative psychological or physical effects when the activity isn't available' (*Age*, The [Melbourne], 5 November, 2007). Following ten exhaustion-related deaths among 'professional' computer gamers in South Korea (the world's most 'wired' country), the government issued health warnings after a study concluded it was a 'significant and growing problem' (BBC Radio, *World Service News*, 11 January, 2008).

Although only a few case study respondents indicated that the use and content of digital technologies could be 'compulsive', they did report concern about its role in the increasing dissatisfaction with 'self', especially image and lifestyle. The emotional pressure to constantly 'self-report' and 'update' appears to encourage a greater frequency of 'copying' in order to improve an individual's sense of worth. Such pressures were acknowledged by the respondents to be excessive and increasing, especially for children.

The value individuals place on themselves is also related to emerging notions of where responsibility lies for the risks associated with everyday use of ICTs (especially electronic crime and identity theft). Apart from cyber-bullying, there appears to be little reported evidence of the stress caused by becoming a 'victim'. The overwhelming signal that individuals receive from government, business, media and even education authorities (especially in Australia) is that they are personally responsible for any 'misfortune' rather than society. The implication is that if people cannot cope with the pressure to make 'sensible' informed decisions, then they are

'weak'. Financial institutions only compensate people for clear electronic crime rather than the increasing fraudulent transactions people undertake 'in trust'. With such expectations - and their self-worth at risk - many young users of ICTs may deny or ignore risks, especially the consequences of fast decisions.

Although fear of loss of privacy is a growing issue, there is a low level of awareness of the danger of losing all personal data from hacking or the theft of a digital tool, which suggests that many people 'de-value' such data. However, the question of trust in online relationships continues to widen with expanding surveillance in public and privates spaces. Although there are serious implications for self-worth, people seem to be prepared to live with such new forms of stress. A sense of autonomy and agency over changes in one's everyday life is an important need, yet, when the Australian Consumers Association examined the relationships that banks, food retailers and telecommunications companies have with their customers, it found that people are both 'complacent and disempowered' over issues such as price rises and data gathering (ABC TV, *The Midday Report*, 21 April, 2009). If this is so for individuals as consumers, it seems unlikely that the situation of the individual in the role of empowered citizen is likely to be any better (to be discussed in the section on political assets).

6.2.5 Hope (courage and visionary outlook, including, participation and calculated, purposeful risk taking)

The rapid development of mobile phones with online functions adds new pressures on individuals to cope with competing demands. A declining capacity to achieve a desired 'work/life' balance is a major factor for stress among people, according to the Australian Work and Life Index Study, with 'technology breaking down barriers between work and home' but contributing to 'rising family tensions'. The survey also showed that 40 percent believed 'the overall quality of life in Australia is getting worse' (Centre for Work + Life, 2007). A similar study revealed that, although they felt the 'least rushed', most Tasmanians did not feel that life was improving (*Mercury*, The [Hobart], 29 September, 2008). A study by American sociologist Noelle Chesley of the University of Wisconsin showed that regular mobile phone users suffered more stress as 'job concerns affected family life with negative consequences', including reduced 'support, affection and companionship from partners and children' (reported in the *Mercury*, The [Hobart], 4 January, 2006). Chesley sees a blurring of boundaries between work and home to the extent that the

distinction may become irrelevant for the next generation which 'cannot imagine life any other way' (2005: 1246). She recommended that future studies should focus not only on the use of ICTs but also 'how expectations about these tools (and control over them) structure any consequences associated with their use' (2005: 1246).

The persistence of such tensions poses challenges for the attainment of 'happiness' as an end in itself. An Australian medical health fund advised its members not to unrealistically expect happiness without working on it, warning that 'mass media and consumerism' was encouraging expectations of instant and continuous satisfaction without any commitment to quality relationships and 'chosen standards' by which to live life: 'We have more money, bigger houses and take more holidays...yet our bestseller lists are top-heavy with self-help books about happiness, while depression is on the rise' (*Living Well*, September 2004). 'Happiness' has become an industry, especially in the USA, and while economists have joined psychologists in examining the non-monetary factors of wellbeing, the social conditions for happiness are ignored (Hanley, M., 2006). As 'happiness' becomes a goal for work organisations and learning institutions other important factors, such as social tolerance, personal safety, benevolence and community solidarity require attention, according to the World Values Survey (*Business Week*, 20/8/2008). Interestingly, the small developing country of Bhutan (famous for its Gross National Happiness Index) is cautious about recent modernisation processes to improve the standard of living. Its democratically elected Prime Minister's 'biggest fear' in embracing the freedoms of ICTs is that people will begin to think that 'the individual, the self, is more important than other people and other things', but he hopes that his people will develop a capacity for people to select the best, so as to 'keep what's needed and change what should be changed' (Nine Network TV, *60 Minutes*, 8 June, 2008).

Despite having consistently achieving the top ranking in UNDP quality of life index, Norway is significantly lower (only 14$^{th}$ in a 2005 survey of 90 countries) for 'happiness' among its citizens. Scandinavian neighbour Denmark has achieved the top ranking in recent years, while Australia is between Norway and the USA. The government-funded Australian Temperament Project (which analysed the lives of 2,500 people born in 1985) indicated in its eleventh report that one in six now suffer depression or anxiety. Although most were in stable relationships and employed (but with ten percent working more than 50 hours per week), many were displaying signs of serious social and health problems. Ten percent of adolescents engaged in anti-social acts and 19 percent drank every second day or took illegal drugs. The report

suggested that this generation was 'living very different lives than their parents or grandparents' (*Herald-Sun*, The [Melbourne], 24 September, 2008). Another national survey by the charity The Salvation Army, showed that one in four Australian adults were concerned about rising alcohol consumption due to the 'bombardment of advertising, feeling lonely and with more money than self-esteem' (ninemsn.com.au, 20 October, 2008). Prosperity appears to lead to more dissatisfaction and a desire for more possessions (*Aftenposten*, 5 February, 2005).

The human need for hope encourages the confident, self-motivated and competent individual to set and achieve longer-term goals. Drug addiction and suicide are key indicators of failed hope. Both Australia and Norway are experiencing higher levels of drug abuse and suicide, especially among youth, who are most vulnerable to feelings of inadequacy and pressures to live up to others' expectations. Various studies undertaken by the Norwegian Social Research Institute (NOVA) show negative trends, including an 'alarming' rise in attempted suicide among 13-17 year olds (12 percent of girls and 6 percent of boys) in Oslo. For girls, the tendency is for self-harm with knives due to violence, bullying and often 'being forced to deal with adult problems without being emotionally mature enough' (*Aftenposten*, 12 March, 2007). Another NOVA study found that between 1992 and 2002 psychological problems in girls rose 30 percent, due in part to pressure to 'have the right clothes, a lot of friends and top grades...to be something'. It revealed that the rate for depression among boys had doubled in the same period due in part to 'substance abuse, weight problems and dissatisfaction with appearance' (*Aftenposten*, 5 February, 2007).

The youth suicide rate in Japan has also risen alarmingly, with legal websites containing message boards encouraging 'anonymous and instant' suicide pacts among strangers. Globally, the rate of such internet-facilitated group suicide rose 300 percent in 2005 (SBS, *World News*, 24 August, 2005). Many people strive to escape the emotional pressures of negativity that they experience in their daily lives by seeking 'relief' in the digital world of entertainment rather than physical or outdoor activities. However, content focussing on fear, anger, self-doubt and a lack of control is often experienced in such 'simulated happiness' spaces. The negative affect of such experiences is contested by many researchers even though their studies may produce unexpected findings. For example, while one large American study of multiplayer online gamers (supported by a major game operator) focussed on the 'myth' that players are physically unfit, it also revealed that they 'suffer more

depression and substance abuse than the average American' (*New Scientist*, 2008). The researchers could not explain this element and did not want to draw causal connections, instead recommending 'a more in-depth investigation of the correlates of mental health' (Williams, Yee and Caplan, 2008: 1012). Their paper's title 'Who plays, how much, and why? Debunking the stereotypical gamer profile' contrasts with the media report's title: 'Online gamers are fit – physically if not mentally'.

### 6.2.6 Summary of changes to needs and achievement of self development

The contextual evidence considered here confirms the perceptions of the case study respondents that changes in individual attitudes to 'self' have implications for people's relationships with others in their community and their environment. Several trends emerge that indicate that progress is not unproblematic. In Australia, Norway and other industrialised countries, trends in satisfying basic physiological and psychological needs are negative in many aspects. Serious physical and mental health issues emerge involving food consumption patterns and rising anxiety and depression levels. 'Lifestyle diseases' are reversing life expectancy of children. Emotional disorders flowing from poor self-image, dissatisfaction with 'happiness' expectations and destructive relationships, are leading to 'new epidemics' of self-harm, risk-taking drug abuse and 'anti-social' violence. Within the family home there are rising levels of stress and anxiety as mistrust, fear and exhaustion flow from new 'work/life' imbalances.

Every indicator examined has been shown to connect to the usage and content patterns of digital technologies in everyday life. While this wider context involves a highly complex interplay of factors, the existence of clear spatial, temporal, informational and communication linkages is more than 'coincidental'. The higher needs categories for self-development continue the trend patterns seen with the basic physiological needs. Essential psychological indicators for quality relationships with self, others and the environs (such as trust, respect and caring) are not improving. Again, ICTs are directly involved.

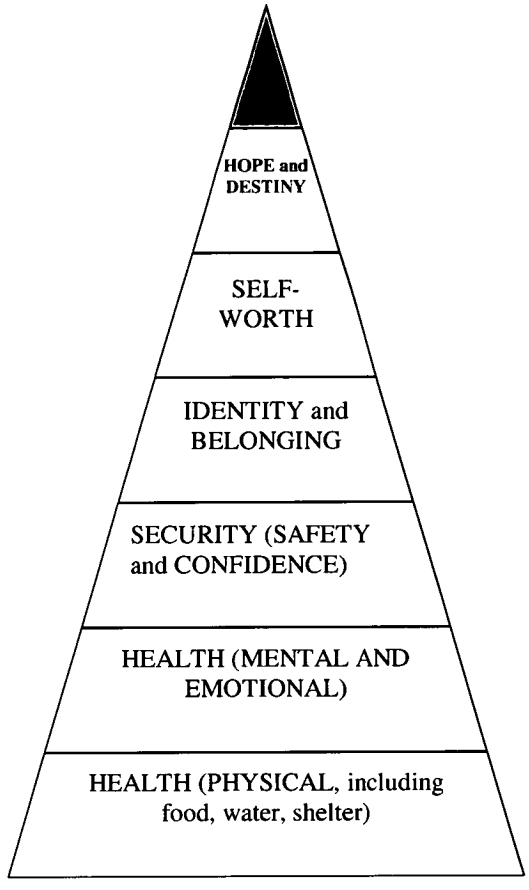
The evidence collated is diverse and represents a contradiction of the picture often portrayed – that digital technologies are associated with positive contributions to human development. There are indicators of rising insecurity that implicate the usage and content of ICTs. When collated, these indicators dispute the assumption that digital technologies only facilitate 'progress' in the human condition, such as through

improved mobility. Increasing levels of stress and a corresponding decline in capacity to cope with new pressures suggest that individuals are not functioning as well as they might be entitled to expect. This survey of contextual trends within the domain of needs indicates that a real challenge exists if individuals are to further develop their capacity to secure improved quality of life. Issue themes, such as insecurity and stress, will be further explored in the following review of the 'health' of assets that underpin individual needs.

Many key indicators of quality of life are regressive rather than improving, and all negative changes are connected to the factors of time, space, information and communication and, more importantly, directly linked to ICT usage and content patterns. Changes in individual motivation and capacity for making informed quality of life decisions are strongly connected to the role of digital technologies. For example, as individuals become preoccupied with a more competitive pursuit of image, popularity and other short-term matters, this occurs at the expense of concern for, or even recognition of, longer-term consequences. Individuals are becoming disconnected from reality, with trends towards self-absorption, impulsiveness, withdrawal and an emergence of fear and exhaustion. Identity theft and cyber-bullying are two prominent examples, whilst physical and mental health trends run contrary, in many cases, to the technological advances that support improved health outcomes.

Figure 2 shows the main factors potentially linking digital technologies to contrary trends in the development of individual needs and community assets that support human development.

**Figure 2: Issues associated with ICTs that potentially impair self development**




| |
|---|
| Declining engagement in shared visions. 'Celebrity fame' as new goal. Expectations of 24/7 entertainment. Uncalculated optimism. Increasing depression and 'damaged' capacity to cope with change. 'Locus of control' tensions. |
| Declining participation and commitments to decisions. Self-destructive actions and intolerance in public communication. New inequalities based on image and material possessions (including information). |
| Excessive image consciousness (competiveness and popularity). Declining trust in others from more fraud (including ID theft), unstable relationships and less generosity. |
| Increasing perceived fear in public and private spaces. More frequent and intense bullying. 'Invincible' risk taking with 'discounted' consequences. Greater personal debt. |
| Rising levels of stress and anxiety. 'Work/life' equilibrium lost. Increasing 'irrational' anger, aggression, recklessness and other 'emotional intelligence' failings. |
| Rapid increase in sleeping deficits and eating disorders (including obesity). Declining physical fitness. Increasing space required inside homes. Rising noise pollution and declining hearing and eyesight. |

### 6.3 Issues effecting changes in assets to support human needs

As we have seen, despite beneficial deployment of digital technologies for self development, there is evidence that their use and content also adversely impacts the quality of life of individuals. Suitable conditions are required for the attainment of basic human needs, and changes in these assets (or systems) will now be explored in this order: Social, Cultural, Political, Financial (Economic) and Natural.

#### 6.3.1 Social

One of the strongest expectations of digital technologies is that they will facilitate the building of communal social capital. The communicative function of these technologies allows unprecedented social contact in daily life. However, as our

exploration of changes in needs has shown, the concerns of some case study respondents that social assets are under stress seem largely confirmed. In both case study countries there has been a decline in overall volunteerism, despite the time-saving and communicative advantages of deploying digital technologies to encourage engagement. Anecdotal evidence from friends and associates in Norway suggests that the traditional shared responsibilities of 'dungard' are becoming much harder to maintain in urban areas. This concept is not easily translated, but it connotes a social obligation to give free time and labour for mutual benefit, such as annual cleaning or gardening around the immediate neighbourhood. It represents a 'levelling' of individuals within a community to highlight equality, egalitarianism, cooperation and cohesion, even if the occasional mutual obligations are 'inconvenient'. In Australia, such voluntary neighbourhood activities customarily attract lower participation, even in rural areas. In both countries, however, increased mobility and de-localisation creates tensions within communities as more people 'take for granted' the efforts of others to maintain local assets, including those to do with recreation, welfare and heritage.

ICTs encourage continuous communication and while they support information exchange, networking and social connection, many messages seem to lack an end purpose. Social interactivity is often measured by the quantity rather than by the quality of communication. A US market research company, Pear Analytics, found that over 40 percent of messages on Twitter were 'pointless babble', rather than being conversational or valuable enough to 'pass along' the network (reported on ABC Radio, *News*, 19 August, 2009). The excessive use of emails and text messaging has also been associated with a decline in social skills, especially for understanding body language in face-to-face situations. Social networking sites have also been linked to a competitive emphasis upon the number of friends (or 'fans'). Online 'transient relationships' are more vulnerable to collapse, which increases anxiety, depression and the risk of suicide, especially among young people (*Sydney Morning Herald*, 3 August, 2009).

There is evidence that digital technologies are changing behavioural standards in public spaces. An increase in customers continuing to talk on mobile phones while shop attendants tried to serve them forced one Australian bakery chain to instruct staff to refuse service (Nine Network TV, *A Current Affair*, 5 January, 2008). Anecdotal evidence from parents and educators in Australia indicates that the prevalence of aggressive language used in chat rooms influences real world

communication by children. Ironically, the opportunity to find new social role models and engage in communication beyond the confines of proximity could be undermining tolerance of diversity. Trends in cyber-bullying, 'hate' sites and celebrity obsession reinforce identification with 'the in crowd' that leads to social exclusion. Constantly highlighting differences can lead to a perception of individuals being 'too different'. Despite the ease and attractiveness of ICT usage, a 'general sense of withdrawal in society' is underway. According to an Australian market research company, Australia SCAN, people are spending more time indoors to compensate for a 'loss of control' in life. The private home is becoming 'the centre of the universe' as people 'seek comfort' in digital technologies (reported in *Sydney Morning Herald*, 6 November, 2006).

As discussed earlier, participation in 'virtual communities' such as Second Life has allowed people to 'live inside a fantasy' as they replace their real social persona with an 'avatar' identity. However, the freedom of a 'utopian' virtual world has not been realised in the way many envisaged. Closely following the use of real money to play, consume and trade in these virtual worlds have come all the problems of a 'laissez-faire' existence, with sexual activities dominating (Edmunds, M., 2007). These worlds give the freedom to 'experience' weapons purchasing, killing and dying, while still being able to 'return without consequence' (Nine Network TV, *60 Minutes*, 24 June, 2007). Although 'virtual' prostitution and rape 'does not have societal or moral consequences' according to the American IT industry (ABC TV, *Four Corners*, 19 March, 2007), real life criminal charges have been laid regarding attempted abductions and theft of data. In Japan a woman was convicted for 'killing' her online husband on the grounds of his data and 'identity' loss (ninemsn.com.au, 24 October, 2008). Socialising within imaginary worlds is growing, with games such as *World of Warcraft* involving over 11 million players, many of whom spend seven hours a day in them. Such pastimes undoubtedly sharpen many imaginative facilities, but there are psychological impacts. Some players feel 'downgraded in the external world' where they can find no equivalent satisfaction or reward (SBS, *World News*, 14 November, 2008). The immersion of youth in increasingly realistic digital games based on 'gloom, horror or death' is a stark contrast to the community conditions which prevail in Australia and Norway.

### 6.3.2 Cultural

Trends towards accepting and engaging in violence challenge the quality of life in many 'peaceful' countries, according to the Global Peace Index. An 'absence of violence' and a 'calm domestic atmosphere' are indicators that have helped Norway achieve its top ranking, while Australia was 25th and USA 96th out of 121 countries surveyed (*The Economist,* 31 May, 2007). We have noted that youth violence in public spaces is increasing in Norway, including unprecedented incidents during the 'end-of-school' (Russ) activities (*Aftenposten*, 15 May, 2008). In Australia, one in five girls have been involved in violent, drunken behaviour, a 'massive rise' probably due to 'competitive copying and trying to fit in' (WIN TV, *News*, 27 January, 2009).

We have also noted an increasing preoccupation in Norway and Australia with celebrities as the centre of daily cultural experience. Instead of actively engaging in creative activities, more time is now given to passive consumption of content about the lives of others. Much of the content of ICTs , especially the main online 'general news' sites (such as Australia's most accessed: ninemsn.com.au) are dominated by information about 'global celebrities', and this trend is now mirrored in content change within the 'old media'. The trend confirms case study respondents' concerns that regional cultural traditions are being lost as 'placeless' urban lifestyles are promoted and increasingly adopted. They suggested that new forms of individualism focussed people on personal wealth and material possessions as measures of status within their communities. The pursuit of images associated with the lifestyles of urban and global celebrities reinforced the motivations of young people (especially girls) to move from their home region. Yet there was confidence that 'migrating' youth would retain a sense of belonging and identity with the rural regions where their families chose to raise them. This hope seems to be based on a faith in the continuing strength of rural cultural identity and its capacity to ensure that rural quality of life will be resistant to urbanisation or, indeed, globalisation. It is an assumption challenged by cultural trends in both Australia and Norway.

National cultural assets support a number of basic needs that underpin rural quality of life, including safety and confidence in public spaces; identity with shared values, norms and role models; and self-worth from the construction of meaningful and balanced lives. In all of these areas significant cultural changes are underway and these are clearly linked to ICTs. The national values content of information and communication is changing as digital technologies allow global 'flows' across

temporal and spatial 'borders', and in both nations a loss of cohesion and shared values is apparent. These are perceived to be two of the world's most egalitarian societies, but issues of tolerance, dynamism and agency over identity and 'citizenship' are clearly on the increase. Internet 'hate sites', for example, have emerged as a challenge to the cultural values of societies such as Norway and Australia, with most of these located outside their respective national jurisdictions (eastern Europe and the USA are the most common sources of such sites). The number of internet hate sites has 'exploded' in recent years, with the USA's FBI investigating hundreds for promoting violent attacks against minorities (SBS, *World News*, 12 September, 2009). Social fragmentation, cultural distrust and spontaneous outbursts of violence seem almost inevitable consequences of this proliferation.

### 6.3.3 Political

This asset is potentially the most important in terms of the theme 'responsibility for the future of place'. Political capital includes the processes of a democratic system that enable open, free and secure participation in collective decision making. As such, it underpins the agency and ownership that communities have over visions for their future. In terms of supporting human needs development, political assets provide basic security and freedom from conflict, protection of rights (including privacy and equality) and hope and visions (with commitment and courage to seek one's own destiny). A key indicator of robust political capital is the trust in government and public institutions that encourages shared responsibility for common problems and solutions. Political assets are also central to community perceptions of self-worth and the confidence to exercise roles, rights and responsibilities as citizens, at scales from local to global.

The case respondents, especially those involved in agriculture, were concerned that decision-making was moving further away from regions as national and global business influence over government policies expanded. Centralisation of ownership at all levels of the food sector caused a 'resigned acceptance' (especially in Tasmania) as the public discourse emphasised increasing global competiveness, market forces and complexity of political processes. Although governments relied upon 'de-centralised' implementation of policies, many respondents felt that effective decision making was moving rapidly away from the local level. Such an implied 'de-empowerment' negatively reinforces a wider decline in responsibility and participation in political processes. During the course of this study, failures in the

decision-making processes of the Tasmanian government resulted in a 'crisis of trust', acknowledged by all political parties that led to the establishment of an independent 'Integrity Commission' in late 2009.

Other indicators confirm the perceptions of rural respondents that community capacity to influence policies is declining. Despite considerable rhetoric and some concrete initiatives to 'empower' communities, there is little evidence of increased engagement. From the early 1980s, membership of political parties steadily declined in both Australia and Norway. In the latter, active participation halved to just three percent by 1997, a trend that 'has been remarkable' (*Statistics Norway*, 2000). Of course, people could be choosing new forms of political participation rather than party activism. The ultimate indicator of engagement is the decision to vote, and voter turnout in Norway has also been trending lower, with less than half of young males now voting at either national or municipal level. Surprisingly, the connection between levels of education, income and voting 'is weaker than before' (*Statistics Norway*, 2000). Declining voter turn-out is a long-term trend in nearly every OECD country, although Australia's compulsory voting system cushions this country against the trend, except in regard to voluntary municipal elections where less than half vote (in 2009 in Tasmania slightly more participated). In the 2009 election in the Canadian province of British Columbia less than half voted, prompting debate over the 'legitimacy of the political system' and a 'disconnect between the focus of the parties and ordinary people' (*Hook*, The, 2009).

The 'digital era' has been heralded as reinvigorating democracy. ICTs are widely expected to facilitate more open and democratic societies through greater sharing of information across and between communities, thereby promoting community cooperation, intercommunity networks and improved governance. In particular, digital technologies should encourage more engagement by young people in the development of political assets. However, first time youth voting patterns have surprised people in many countries. In 2008, to encourage higher voting levels, Austria became the first EU country to allow 16 years olds to vote. This group joined the majority of those under 30 years who chose the far-right Freedom party, which, some have argued, provided clear, simple summations of complex issues, and which also gave reasons for a 'protest vote' against the 'globalisation policies' of traditional parties (BBC Radio, *World Service News*, 29 September, 2008). The Norwegian case study reveals a similar situation in regard to the far-right Party of

Progress (although the latter advocates an expanded free global market, especially in food).

Faith in the constructive role of digital technologies is especially high in the USA. However, though usage can be deemed innovative, the content is not as 'fresh' as has been expected. Exaggerated 'mistrust' in institutions and politicians can be fuelled by conspiracy theories circulated rapidly, supplying unverified and inaccurate information to individuals and increasingly to the main media itself. Other 'disruptive' characteristics of these technologies have not been able to overcome 'business as usual' aspects of the political process itself. In the 2008 Presidential campaign, over US$ 2b was spent by the two final candidates, including costs of advertising on 'new media' sites. Political advertisements dominate the process of constructing 'an informed decision' by voters in Anglo-American systems, with a distinct trend towards negative and personal attacks. During the US presidential election, Barack Obama was frequently portrayed as 'the world's greatest celebrity' alongside images of 'trivial' members of the 'celebrity culture'. In Australia, paid government advertising to 'inform citizens' accelerated from the late 1980s to reach a total of $1.7 billion for the decade between the mid 90s and 2005, including over $50 million prior to the 2004 election (Nine Network TV, *Sunday*, 7 October, 2007). In all recent campaigns there has been only one 'head-to-head' debate and this involved just the two larger party leaders, with smaller party leaders denied an opportunity to press their own electoral credentials. This contrasts with Norway, where political advertising in the print media is strictly controlled and is almost non-existent on television and radio. Despite calls from the far-right Party of Progress, most Norwegians are content to receive political information from 'news services' and the many multi-party debates on radio, television and new media. To ensure voters think in advance about their decision, posters and how to vote cards are also banned around polling stations in Norway, unlike Australia. However, the advent of digital technologies may be changing the situation in which the paid advertising is prevented from dominating the electoral 'learning process' in Norway. During the 2009 elections, online sites of major newspapers carried party advertising and direct links to party websites.

In order to strengthen 'political capital' governments have utilised apparent cost-saving electronic tools to facilitate better services and communication with citizens. Local and regional (state) levels of government have introduced e-services such as 'e-health' and 'e-learning'. Many authorities have sought to foster engagement in

consultation and decision-making processes, but with mixed results, often due to aggressive, discriminatory and libellous communication on online forums. 'Hate sites' in particular are negative reinforcers of active engagement in political decision-making. The bullying that the anonymity of digital technologies allows in everyday life can apply to political matters, too.

The 2009 elections for the European parliament resulted in the electoral success of more extreme parties, with narrowly nationalistic agendas based on vilification of 'others'. These parties have successfully utilised digital technologies to build their 'collective' voice, connecting isolated individuals into effective networks. The EU vote was also the lowest on record (less than half of all eligible citizens voted), despite the upheaval in people's lives from the global financial crisis.

Finally, one of the biggest issues facing governments concerns solutions to global criminal activities (including child pornography and terrorism), with most proposed solutions constituting a significant curtailment of the freedoms promised by digital technologies. However, the potential for authoritarian regulation and censorship by government or by ICT providers already exists in the form of surveillance for 'security' and data collection on financial and social transactions and relationships.

### 6.3.4 Financial

Many case study respondents were concerned that as 'new needs' proliferate, rural people increasingly adopt more 'urban' consumption habits. They suggested that people now equate quality of life and 'happiness' with material goods, and increasingly demand reductions in the tax load that is subsequently used to fund shared community assets, such as public transport and schools. The cases also identified expenditure on digital technologies as a significant new pressure on household budgets. The wider context in both Norway and Australia supports the case respondents' perceptions (Connors, E., 2006).

New financial and economic tensions within communities include rising private debt, insecurity in financial transactions, risk taking, stress in personal decision-making, centralisation of ownership of businesses and the erosion of trust. Since the mid 1990s, Australian personal debt has more than doubled to 160 percent of disposable income to become the highest in the world, five times higher than the European average (ABC TV, *The Midday Report*, 12 November, 2007). On the eve of the

global financial crisis, the Australian Reserve Bank warned that 'households were clearly living beyond their means' (*Age*, The [Melbourne], 17 September, 2008). It was widely accepted that credit cards were funding a 'lifestyle' of 'status and experience' such as home entertainment systems, because 'one generation's luxury is the next generation's necessities' (Nine Network TV, *A Current Affair*, 8 June, 2007) and 'by the time everyone gets plasma television there will be a new technology' (*Mercury*, The [Hobart], 1 September, 2007).

Digital technologies fuelled both personal debt and profit surges for retailers. Twenty percent of respondents in an Australian survey felt that excessive use of mobile phones had a financially 'unhealthy' impact as they reduced expenditure on clothing, books and food to pay for phone bills (ABC, *News Online*, 2 February, 2007). More critically, mobiles have become enabled as 'credit machines' for 'real time' purchases in any space. Such digitally-facilitated instant gratification and impulsive purchasing provides a 'false sense of security' in the global recession, as more young Australians and high income earners extend their personal debt and 'continue to live beyond their means' (ABC Radio, *News*, 22 January, 2009). According to the Australian Consumer and Competition Commission, not only the cost of purchasing new phone models but the often 'hidden costs' in complex terms and conditions for web access, downloads and 'special offers' were 'forcing' younger and younger children to experience debt (ABC Radio, *News*, 26 August, 2008). A national survey showed that 48 percent of Australian women and 30 percent of males between 18-34 years were 'obsessed with looking like celebrities and the pressure to keep up with ever changing style of the stars is driving an annual $8.7 billion credit card spending spree' (Virgin Money, 2006).

Within realms of high finance, economic assets have been spectacularly eroded through an uncontrolled sectoral addiction to greed, made possible by instantaneous flowing of global money, information and trading in 'virtual assets'. In the mid 2000s, a popular USA show, CNBC's 'Mad Money', presented investment advice as entertainment and praised extreme risk-taking. Before he committed a US$30-64 billion fraud, the Wall Street trader, Bernard Madoff, was widely applauded for his 'clever sounding' and 'innovative' financial strategies and products (ABC TV, *Four Corners*, 13 July, 2009). Iceland's failed Kaupthing bank promoted optimism for its global online accounts with a particular temporal and spatial message: 'Beyond Thinking. We are the thinking time you need. Slow down, relax...' (*Scanorama*, May 2007). It is now widely acknowledged that the 2008 global collapse of financial

assets (including many investments made by municipal authorities in Australia and Norway) involved extreme deregulation, opaque innovations, unwarranted confidence, deferral of consequences and a loss of memory about previous deep causes of problems. The wholesale collapse of trust at an institutional level also underlines the daily decision-making risks faced by consumers as money becomes increasingly 'digitalised'.

Electronic transactions of individual and community organisation financial assets have rendered such transfers more vulnerable, less secure. Internet 'phishing' continues to become more sophisticated and law enforcement agencies are fighting 'an uphill battle' against criminals who also use online virtual games to launder real money (*Australian Financial Review*, 22 November, 2006). Despite software to minimise risks, hackers use ever better technology to capture credit card and personal details and then forward these onto criminals (ABC TV, *The Midday Report*, 15 April, 2009). Innovative 'spoofcard' companies are legally trading in the USA. These sell products (globally) that allow voice distortion and fake bank or government telephone numbers to appear on mobile calls (ABC TV, *The Midday Report*, 14 April, 2009). Such scams can succeed when many people at home or at work are 'kept in a state of panic' having to respond to 'urgent' messages (ABC TV, *The Midday Report*, 21 October, 2005).

Ironically, a growing sense of 'gambling' when making electronic financial transactions these days parallels an actual development of legal online gambling. At the start of this century, the Tasmanian government was warned by numerous social welfare organisations that the growth of losses incurred by players of electronic poker machines would only rise still further as online use increased. By the financial year 2008-2009, Tasmanians had lost more than $400,000 per capita on these machines (*Mercury*, The [Hobart], 28 October, 2009). Interactive and 'round-the-clock' digital 'punting' on mobile phones is now widespread across Australia and there is increasing support for independent politicians who campaign against the dependency of state governments on revenue raised from expanded gambling. It is a paradox that the revenue is required to address rising crime, homelessness and health damage linked to gambling addiction. Although Norway maintains tight restrictions on all forms of gambling, online sports betting, lotteries and 'games' on websites based in Australia and elsewhere are attracting more participants.

### 6.3.5 Natural

Despite economic prosperity in Australia and Norway from the mid 1990s to mid 2000s, there has been questionable progress in satisfying the elementary human needs for access to food and water. The concerns of case respondents that the wider community takes place assets for granted, whilst, in Australia's case, also 'abandoning' them, are confirmed. The supply and consumption of quality, nutritious food is being steadily supplanted by processed food and increased imports from less verifiable sources. In 2006, as climate change further impacted upon Australia's 'food bowl' (the Murray-Darling Rivers Basin), the then Prime Minister, John Howard, advocated expanding food imports. By 2008, Australia's healthy 2002 trade surplus in vegetables and fruit had turned into a deficient of $315 million for vegetables alone. Australia has now joined Norway as an importer of basic food, but this has caused minimal political reaction. For example, consumers quickly came to accept cheaper processed fruit that is imported at a rate twice the value of exports. The economic risk of vulnerability to fluctuations in financial exchange rates is ignored, as is the 'death of the Australian horticulture sector' (*Tasmanian Country*, 7 November, 2008).

The passive response to Australia's deteriorating food security corresponds with declining public motivation to prevent further erosion of the natural resources base. According to the Australian Social Trends survey, the number of Australians who express concern about environmental problems decreased between 1992 and 2001, with the biggest fall, over 20 percent, occurring in young adults aged 18-24 years. This was a complete reversal of attitudes previously reported, leaving those between 45-54 years the most concerned (ABS, 2006). Compared to Norwegians, Australians are particularly complacent about food security, with the nation still lacking a government strategy in 2009. As major Australian cities continue to grow, such as Adelaide (in the country's driest state, South Australia), further scarce food-growing land is lost to city expansion. Moreover, the attitude to food wastage suggests Australians do not buy on 'need', as over 13 percent of purchased food is wasted, at an annual cost of $8 billion. Retailers dispose of even more, as they force growers to abandon crops because of 'poor appearance' (Ward, A., 2009). This situation undermines the popular myth that further technological innovation is the only solution to closing the gap between supply and demand for food.

Although Norway has government-guaranteed food labelling schemes for 'country of origin' and 'organic standards', the supply of such mandatory consumer information has been opposed by Australian processors and retailers. Confirming the views of the case respondents, Tasmanian farmers are particularly concerned that consumers cannot make informed decision-making to protect local production. Consumers focus on short-term gains in quantity at the expense of quality (ABC TV, *News*, 2 September, 2009). While the Tasmanian government pursues an innovation strategy to utilise the island's water resources to create Australia's 'new food bowl', existing production on fertile land is failing. In late 2009, vegetable and dairy farmers were forced to accept prices from overseas-owned food processors that were below the cost of production. When the established political representatives of the farmers recommended compliance and prevention of any consumer boycotts of the companies involved, many farmers were dismayed (*Tasmanian Country*, 23 October, 2009; 30 October, 2009; 6 November, 2009). The continuing push by Australia's two main food retailers for further importation of food has been joined by calls from the US for imports of apples to be allowed (ABC Radio, *The*, 2009).

The context data confirm and extend the fears of many case respondents, then, that the wider community (especially in Tasmania) is 'detached' from food production and the value of the natural resource base that supports basic needs and quality of life. The community appears to be losing motivation to act in the long-term maintenance of these assets. This situation interacts with trends in other assets, particularly political, financial and cultural capital.

### 6.3.6 Summary of trends relating to assets

The case study respondents perceived changes in community thinking and acting that undermined shared responsibility for the future of place. Too many people were 'taking for granted' the assets that had been developed over time and, while benefiting from the quality of life afforded by place, they were increasingly reluctant to contribute towards maintaining *in situ* assets. The trend towards preoccupation with individual needs was linked to digital technologies, through only indirectly, by most respondents. However, as the wider contextual data show, ICTs are clearly implicated in emerging negative trends. Digital technology usage and content patterns similarly reinforce reduced motivation for collective responsibility, reduced abilities in terms of traditional place-based knowledge, skills and values, and reduced opportunities for local ownership and control over change processes.

Uncertainty expressed by case respondents over how ICTs impact upon community relationships and assets has been clarified. All the negative trends are linked strongly to temporal, spatial, informational and communicative factors. In many situations they also represent direct evidence that the deployment of ICTs in everyday life and in policy settings and strategies is negatively affecting assets. Common issues include the increasing emphasis on the role of the 'individual consumer' over that of the 'collective citizen', and the specialising of interests that reduce the common knowledge, skills and values shared between people.

The contextual data also suggest that changes underway at the national level challenge the assumptions of many case study respondents that their assets (especially cultural) will provide a bulwark against urban and global pressures. Their faith in proximity relationships to deliver trust and the security to raise children relies upon traditional regional social conditions that are more influenced than ever before by urban and global lifestyles communicated across fast-dissolving time and space barriers.

### 6.4 Capacity for informed decision-making on the role of ICTs in change processes

Given the ICT-related challenges facing communities, a conscious effort to build capacity for informed decision-making might be expected. But this appears not to be the case in terms of either formal or informal learning in both Australia and Norway. The contextual evidence indicates that, although there is increasing news coverage of issues concerning the use and content of digital technologies, the dissemination of such information is hugely outweighed by the daily marketing deluge promoting the benefits of these technologies.

Informal learning through the media is pervasive but provides poor conditions for informed decision-making, its information largely random, often sensationalised and very fragmented. Through its marketing in, and to, both new and old media, the ICT industry exercises formidable power. The media's dependence on advertising and quickly-produced editorial content encourages 'gatekeepers' of information to emphasise the benefits of expensive investments in new digital technologies.

Community learning for decision making about digital technologies within rural (or even urban) communities is not structured in any recognisable way in either Norway or Australia. As consumers and citizens, individuals are expected to explore and apply increasingly powerful technologies to their pursuit of a 'quality of life'. Possibly because ICTs are seen simply as tools to enhance temporal and spatial freedom, the quality of information and communication they mediate is left entirely as a matter of choice for the user. Communities and governments themselves are unsure how to respond to the challenges as they emerge, leaving citizens confused and lacking guidance.

The Australian situation exemplifies this. In 2005, following pressure from religious and welfare NGOs, Australia's conservative government introduced a public education programme, NetAlert, based on parental responsibility to supervise children's internet use. The following year a PC-based 'National Filter Scheme' was launched. Although both nation-wide elements were initiated in Tasmania, response in the Huon region was low, with only 14 people attending community information workshops. Within a year the program was widely considered a failure, with only 30,000 families in Australia having accessed the free filters. In addition, a 16 year old student easily hacked into the $84 million, overseas-supplied software to override it whilst giving parents the impression it was still functioning, and this incident received wide and damaging media exposure (ABC Radio, *News*, 27 August, 2007; *Age,* The [Melbourne], 25 August, 2007). In 2008, the new centre-left Australian government launched a trial for mandatory filtering by internet service providers based on an existing 'blacklist' of websites promoting child pornography, incest and rape. Within days the scheme was under attack by ultra-conservative and libertarian politicians, the internet industry and online user groups because it could potentially 'block legitimate resources' while still being ineffective when it came to chat-room content. The two main arguments used were that it would slow network speeds by over 80 percent and that the definition of 'illegal content' could be broadened in the future to cover 'all pornography, political views, pro-abortion and online gaming sites' (*Age, The* [Melbourne], 1/12/2008). The situation appears to remain unresolved.

In Norway there is also little structured community learning for decision making about ICTs usage and content. This is despite the existence of a Nordic model for 'participatory' democracy that strengthens the representative system. Methods such as consensus conferences and scenario workshops allow community participation in

decision-making processes. However, the independent Norwegian Board of Technology charged by government to facilitate public assessment of technological developments has not addressed the wider social impacts of ICTs.

As much of the ICT policy focus is on 'preparing for the future', the situation regarding formal learning in schools and higher education requires closer consideration. Educational institutions are encouraged to adopt digital technologies to provide 'a competitive edge' for students, parents and the institutions themselves. ICT tools are widely equated with more student relevance, autonomy and engagement. In Norway, Australia and elsewhere professional educators are advised by speakers at conferences to 'move on or be left behind' and, because the 'net generation craves instant involvement' even video games need to be integrated into learning to gain student attention (ISQ, July 2007). The message is that schools should supply and utilise more digital technologies, give priority to purchasing new resources, and retrain teachers. Examples such as 'all-digital' schools in the USA (such as Empire High School in Tuscon, Arizona, where laptops have replaced all books) are promoted as the future (ABC TV, *The Midday Report*, 9 November, 2005). In Norway, the planned 'Digital Virtual Library' envisages that all printed texts will be converted to electronic formats to replace the loaning out and storage of hard copies in all central libraries (*Aftenposten*, 29 September, 2008). In Australia, 'hologram teachers' may be the consequence of innovations being promoted by the telecommunication industry to utilise faster broadband speeds (*Age*, The [Melbourne], 27 May, 2008). Such profound changes in the facilitation of formal learning receive little discussion within the wider community, even though there are well-recognised tensions within the education profession as it tries to adjust decades of pedagogy to the rapidly changing technology of the 'education revolution'. A considerable number of issues that are directly related to digital technologies face schools and higher education institutions. They include the following examples.

Digital technologies are changing the basic nature of relationships between the 'learner and the educator'. As observed by case study respondents, younger and younger students are becoming the 'experts' when it comes to new tools for learning. Anecdotal evidence from discussions with many parents and educators suggest that many young people feel 'more in control' and 'superior' to slow or non-users of new hard ware and software. This unprecedented 'status' of knowing more than adults goes beyond simply possessing the latest gadget, as the competency involved concerns over usage and content in what is being promoted as learning. Many

educators feel uncomfortable with a role in the learning process that is being increasingly re-defined by rapidly evolving technical skills. The marketing messages of the ICT industry stress that such skills put people at 'the leading edge' and ahead of others in society. This is a fundamental change in relationships within formal education institutions, yet it is one that receives little attention. The traditional face-to-face relationship between learner and educator is further strained as online education replaces physical attendance at lectures and classes. It reinforces the move away from *in situ* spaces such as the physical classroom, schoolyard, family home, neighbourhood and community open spaces.

Wikipedia (the online, user-edited encyclopaedia) has further extended easy access to a vast amount of online material that has also made plagiarism much more difficult for educators to detect and raises issues of trust in unverified sources. The dramatically increased use of search engines such as Google and Bing creates a new problem of diversity as well as accuracy of information. The two dominant search engines mediate what people find, as content is ranked as much by commercially owned websites and locations as by the relevance of the information being sought. Assumed access to diverse and open information is misleading because users are directed to sites selected for financial gain. The Australian Consumers and Competition Commission took the world's first legal action against Google for showing sponsored links at the top of results pages in the same format as the rest of the search (*Australian Financial Review*, 13 July, 2007).

Language is undergoing a process of truncation to accommodate the text abbreviations of SMS communication. In New Zealand, pressure has been applied to education institutions to allow such abbreviated spelling in national examinations, even though ambiguity over the meaning of some abbreviations requires more reading time (ABC TV, *News*, 11 November 2008). In the continuous criticism of poor school results in standardised literacy tests, it is rare to see mention of this issue. Similar observations can be made concerning numeracy skills. The broad expectation that students should use advanced calculators in examinations is overlooked in public debate about 'deteriorating' competencies. There are also calls for schools to allow full, free use of mobile phones by students because restrictions are 'useless' and ignored by most students (WIN TV, *News*, 2 February, 2009). Yet schools are under enormous pressure to control the increase in cyber-bullying, especially by 'silent' text messaging during class time (*Mercury*, The [Hobart], 30 June, 2008). The solution most commonly advocated for the problem of learning distractions posed by

digital technologies is to simply further incorporate those technologies into teaching. This appeals to many parents as a boost to motivation and ICT literacy. The lack of time and space in curricula to expand skills development to incorporate ICT use highlights the absence of informed debate over the direction and purpose of learning.

Public calls for compulsory history, road safety and general knowledge 'gaps' to be addressed in school curricula, pose serious dilemmas for schools. In Norway, school reform that reduced the teaching of history to accommodate more 'digital presentations, internet publishing, exhibitions and use of digital communication tools' was widely criticised (*Aftenposten*, 25 November, 2005). With much of the research supporting more intense application of ICTs in learning originating in the USA, the question of effective outcomes is often overlooked. American schools remain some of the most 'disciplinary disrupted' in the OECD, with, for example, many issues related to the 'freedom' to use mobile phones at any time for 'security and privacy' reasons.

Compared to the USA (and Australia and Norway), Finland has consistently achieved outstanding results in international benchmarks of skills and knowledge learning. This educational success is attributed to the 'higher status of teachers, more traditional classrooms and less use of computers' (*Aftenposten*, 16 January, 2008). Though one of the most digitally connected societies in the world, Finland nevertheless emphasises equity and socialisation in its education system. Australia, by contrast, aims to effect a major reorientation of budgets towards ICTs and to increasingly shift educational effort from the public to the private sector, thereby de-emphasising the principle of equity.

While online learning offers advantages for student learning it is also implicated in a 'distortion' of homework and new tensions within school communities. The increasing demand for individualised, 'project based' homework designed around the use of a computer and the internet emphasises quantity over quality. It is also time-consuming, and at the expense of 'family time'. Parents have been warned that 'cognitive overload' occurs when too much information is sourced and this risks undermining both long-term memory (ABC TV, *Catalyst*, 2007) and motivation for learning as information overwhelms understanding (ABC TV, *7.30 Report*, 10 April, 2007). The observations of several case respondents regarding competitive pressures and apparent 'memory loss' by young people are valid here.

The enthusiasm behind the deployment of digital technologies also encourages further 'multi-tasking', despite research from Massachusetts Institute of Technology suggesting that this 'is linked with forgetfulness, stress and taking an impractical approach to problems' (Hatch, 2004; the research reported by Hatch can be found in Jiang, Saxe and Kanwisher, 2004).

In both Australia and Norway, high school graduates aspire to career paths that reward them more financially and are 'celebrated' by society. In Australia, the 'glamour' courses such as sports management and journalism are now preferred, with tertiary courses in fashion often requiring a higher entry score than science. 'Global competiveness' emerges in all discussions about international comparisons and standardised tests. Learning outputs are primarily measured as literacy and numeracy 'ends' rather than the 'means' for thinking and communication. For example, knowledge is generally equated with facts, skills with technical rather than creative problem solving, and values are fixed, sidelining the importance of dialogue. Despite ICTs being applied in schools, there is little evidence of learning about the temporal, spatial, informational or communicative aspects involved, nor of the direct impacts of digital technologies on relationships with self, others and the environs. Capacity for complex qualitative decision-making regarding consumer and citizen behaviour, personal health choices and ethical capacities for information evaluation is given little priority, with emphasis overwhelmingly on the acquisition of technical skills.

## 6.5 Conclusions

The two cases studied were selected on the basis of 'rural isolation' to provide a specific insight into the unprecedented acceleration of changes in time, space, information and communication mediated through ICTs. The conservative attitude to change held by rural communities was tempered by focussing upon perceptions of change that coincided with the advent of digital technologies. Although this has formed an 'empirical worldview' of respondents in two countries that is remarkably similar, it required verification; in particular, whether issues of concern about the future of place are linked to the deployment of digital technologies more broadly within Norway, Australia and other industrialised countries. The inclusion of wider evidence, beyond the perceptions of the rural case respondents, reveals further

dimensions to community issues in which the use and content of ICTs are significant, if not the only, factors.

The contextual evidence adds depth and breadth to rural community perceptions that potentially historically significant changes to the relationship between human needs and place assets are underway. The wider evidence also confirms the case data that link these trends to the usage and content patterns of digital technologies. In particular, it reinforces observations that there is a generally poor capacity for informed decision-making about the impacts of ICTs on quality of life factors. Even though the linkages were better recognised in Norway, both countries evinced similar confidence about the community's capacity to adapt, negotiate and manage ICT-mediated changes. External factors, such as signals from marketing and government, generally downplay the negative role of digital technologies. The tendency to emphasise the opportunities afforded by digital technologies constrains public discourse for open, informative and critical analysis of how usage and content patterns affect everyday life. There is no facilitation of comprehensive, systematic community learning, even in Norway where there is a tradition of public assessment of technology.

Despite expectations of improved ICT-generated quality of life, the wider context indicates a comprehensive range of emerging stresses in the conditions that enable individuals to achieve their needs (i.e. the development of self or 'human assets'). Trends within the other five assets (social, cultural, political, financial and natural capitals) also suggest significant tensions to address as 'the digital future' unfolds. These findings not only confirm the issues raised by the case study respondents regarding social and natural capitals but also challenge assumptions of resilience and self-renewal in the domains of cultural and political capitals. The trends do not encourage excessive optimism, with assets eroding in terms of capacity to support the achievement of quality of life outcomes communities seek. The erosion of trust, empowerment and confidence to negotiate and manage change threatens to undermine investments in building these assets, perhaps especially in building the capacity of communities to be responsible for the future of place.

The examination of the wider context confirms the case study respondents' views that there is little accessible information on the affects of digital technologies to assist decision-making about their use and content. The ambiguity over the benefits and costs of deploying ICTs is not surprising. The necessity for the wide-ranging scan

undertaken in this chapter is itself further confirmation of a 'vacuum' in public learning. There are no clear sources providing an overview of either the conceptual or instrumental knowledge required for communities to engage in informed decision-making about digital technologies.

There are sufficient issues emerging to suggest that it is no longer appropriate to consider the 'unexpected consequences' of digital technologies to be marginal, and the implications of this for rural communities may be profound. In the next chapter the risks to rural community resilience and policies for sustainable, innovative and democratic futures are explored. The chapter identifies gaps in current research, notes new questions that are emerging in a number of fields, and considers why the current low level of informed decision-making about the role of ICTs is a risk in itself.

# CHAPTER 7: GAPS, RISKS, SOLUTIONS, AND CONCLUSIONS

## 7.1 Introduction

The aim of this chapter is to discuss how the study findings relate to current research and theory. By placing the case and contextual data from the previous chapters back into a theoretical context, the final interpretations and conclusions can be drawn.

The chapter considers whether the connections established between digital technologies and unexpected changes in community needs, assets and quality of life are validated by any recent research or theories. Assumptions about the role of digital technologies and human capacities to deploy them for self-determined ends will be further analysed to identify gaps in current research into the issues highlighted by this study. The implications of the findings to policies for achieving sustainable, innovative and democratic rural futures, especially in terms of learning outputs, will be discussed. This will highlight weaknesses in assumptions held by both policy-makers and by rural communities themselves concerning the relationship between (a) a capacity to assume responsibility for the future of place and, (b) a capacity for informed decision-making about the role of digital technologies to that end.

The chapter offers a brief consideration of opportunities to strengthen the potential of ICTs to serve as means to community ends. It also presents the final conclusions.

## 7.2 Results to date: key factors and relationships

The findings from the combined case and contextual data suggest that the widely heralded benefits of deploying digital technologies for economic prosperity, education and democracy should be viewed with a degree of scepticism. The interactions of most significance to the research problem have been:

- Trends in needs and asset development for quality of rural life.
- Trends in motivations, abilities and opportunities for shared responsibility for the future of place.

- Effects upon *in situ* relationships of changes in information, communication and how time and space are experienced.
- Capacity for informed decision-making about the role of digital technologies.

In exploring the main theme of the study - the capacity of rural communities to exercise responsibility for the future of place – several issues have emerged. These point towards new challenges in the development of place assets and, indeed, in the meaning of basic needs. The evidence suggests that needs and assets are eroding, contrary to expectations of their enhancement. The usage and content patterns of community deployment of digital technologies directly contribute to factors that jeopardise the future quality of life of rural communities. Two of these are:

- Replacement of basic, local fresh food with highly processed or imported substitutes and a reorientation of consumption priorities to 'entertainment wants', with the effect of declining physical health; and
- Replacement of broad public *in situ* relationships with more private 'interests', reducing shared experiences and collective responsibility, and inducing a corresponding rise in fear of social 'identity' risks, anxieties, depression and general insecurity.

The data indicate that significant actors within rural regions perceive that their communities are 'decoupling' their needs from assets of place. This challenges assumptions about community capacity for developing agency over change processes affecting quality of life. Such capacity involves two sets of competencies: for longer term responsibility for shared assets, and for effectively deploying digital technologies to meet preferred ends.

The findings can potentially clarify the complexities involved in theories regarding the role of new forms of media in declining social, political and cultural capitals. The rural case studies revealed demographic changes of younger populations leaving, new residents moving in and more diversity in livelihoods. While these factors may help explain the perceived decline in shared experiences, knowledge and identity, they all remain closely associated with the deployment of ICTs. It is the reduction of direct, physical interaction with place that has been raised by respondents as an underlining factor. This also suggests that the 'easy' substitution of external

'communities of interest' may further erode the motivation, ability and opportunity for people to build broad and effective *in situ* relationships. As such, the advent of even more mobile and interactive forms of digital media may make the individualised, physically 'remote' and high consumption lifestyles linked to television by Putnam and others, even greater in the near future.

The data shows clear contrary trends in responsibility for self, others and the environs that are connected to the digital mediation of relationships. They also indicate that both formal learning (education) and informal learning (media) weakly support the building of community and personal capacity to exercise informed decision-making about the use and content of digital technologies. There is also little learning for decision-making about the vision of 'the digital future' itself.

The empirical data show how communities are ambivalent about the costs and benefits of deploying digital technologies in relation to their quality of life. It is evident that informal learning about ICTs is confusing, given the contradictions between media reports of problems associated with ICTs and the massive marketing of these technologies. Public debate is replete with ambiguity and is characterised by confusing signals as to who is responsible and what 'trade-offs' in freedom and security are involved. There is little public debate about a possible conflict of interest between the main gatekeepers of information - the 'old' media and governments promoting policies as the 'digital education revolution'. Much of the information disseminated to the public is based on research studies and a closer look at these and the theories that inform them is required.

## 7.3 Current research and theories on the role of ICTs

### 7.3.1 The relevance of other research to the findings

During the course of scanning public communication about the impacts of digital technologies, as reported in the previous chapter, many issues of risk were reported from a variety of sources, including public surveys and statistical trends. However, many of the ICT-specific research findings distributed to media and government policy makers do not raise such issues to the same degree. A highly 'defensive' position is often taken by exponents of digital technologies, including those employed within business and government. As most media reports are too brief to

provide details about the funding sources behind research projects, it is difficult for the public to ascertain the 'starting positions' of such information. The situation is further complicated by the increasing reliance of commercial media on expanding advertising revenue from the ICT sector. While such inputs are dominated by optimistic promotion of the benefits of deploying digital technologies, the relatively 'piecemeal' media coverage of contrary information is often sensationalised and shallow, reinforcing public perceptions of polarisation between 'positive, progressive techno-enthusiasts' and 'negative, luddite technophobes'. Such generalisations do not provide a constructive climate for discussing the complex issues involving ICTs.

Anglo-American research findings are widely reported in the Australian media. Norway also accesses Nordic and other non-English language studies, but in term of education research, it is equally influenced by American findings that advocate accelerated adoption of digital technologies, including computer games, into school curricula. The Pew Internet and American Life Project and the Pew Research Centre supply many reports to media, governments and academics. Nearly all emphasise positive benefits, especially for social relations, informed decision-making and deliberative democracy from the use and content of ICTs. Even researchers who support the role of Pew in countering 'cyber-sceptical' critics of digital technologies acknowledge that there are shortcomings in its simplistic quantitative data, with 'unresolved questions' about the interplay between democratic society and these technologies, including whether the online practices of youth 'could prospectively lead to social fragmentation and the balkanisation of knowledge' (Wojcieszak, 2006).

Another source of widely disseminated and generally enthusiastic research is from the Oxford Internet Institute which has the aim to 'help people enrich their lives and communities through the effective use of ICTs'. As with Pew, much of the research has focussed on distinctions between individual use of the internet for information and mobile phones for personal communication. Researchers associated with Oxford have acknowledged that the convergence of mobile, internet and gaming devices has challenged such a distinction (Wajcman and Haddon, 2005).

An online scan of research findings from both Pew and Oxford confirms what appears to be the general case; that several gaps exist in the studies that inform media and policy-makers about the impacts of digital technologies. These include:

- Minimal reference to outputs of knowledge, skills or values beyond those with a utilitarian application and a focus on technical information processing.
- Very little monitoring and evaluation of decision-making about use and content, especially in regard to satisfying needs and quality of life ends.
- Few empirical studies have a rural perspective (and those that do mostly imply that rural communities are 'disadvantaged', to the extent that needs and assets will only develop with wider adoption of ICTs); and
- Little analysis of either direct or hidden economic, social or cultural costs from replacing 'old media' with new digital technologies. This also extends to formal learning processes.

Limitations in most research include the unexamined assumption that coping with change flowing from the deployment of ICTs is an elementary extension of experiences with previous technological innovations, such as the printing press, radio and television. But such an assumption is at odds with the belief that these technologies have unprecedented power to 'change the world' or, in the words of the Premier of Tasmania, David Bartlett (a former ICT professional), when launching the first phase of Australia's high-speed broadband network, to 'transform society' (ABC TV, *News*, 21 October, 2009). It also ignores the rapid development of mobility, interactive capabilities and the pervasiveness in all aspects of everyday life of new technologies. Temporal and spatial boundaries are 'dissolving' faster with the emergence of new devices such as internet 3.0 and generation 4 mobiles. The current development of 'intelligent' devices, including 'the semantic web' (in which the internet will search to replace words based on their meaning rather than spelling), will be an even greater challenge for human adaptation. These developments also further challenge 'assumptions of control' over the accelerating rate of 'knowledge turnover' (Shepherd, 2004).

The complexities involved in developing human capital are too often forgotten in the optimistic focus upon 'simple infrastructure and skills' (Maleki, 2003). The premise of 'equivalence' ignores the unprecedented demand for the learning of the new skills, knowledge and values needed to ensure digital technologies serve preferred ends. While technical skills can be acquired relatively quickly, the more important critical thinking skills required to ensure effective decision-making about use and content need time and space for reflection, adjustment and assimilation. Many researchers

marginalise the risks to human agency from a lack of time and space in which to effectively manage these unprecedented powerful tools. Yet the empirical data of the previous chapters indicate that people (and their governments) are significantly 'lagging' in terms of competencies and conditions to understand, respond and own change.

This study has used a number of indicators (such as motivation, competence, opportunities, needs and assets) to identify possible impacts of ICTs upon community capacity to exercise responsibility for the future of place. But these indicators are poorly reflected in current learning about digital technologies. In large part this can be traced to the widely accepted view that individuals are responsible for 'incidental learning' and that that there is no concrete case for government intervention, nor tools or guidelines to assist more informed decision-making by consumers or citizens.

With research into digital technology competency almost exclusively focussed on technical usage skills, there is little concomitant research into knowledge about the impacts of ICT use upon time and space management or upon the impacts of information and communication content upon personal relationships. This is despite clear linkages made to these factors in the findings of this study. Furthermore, as part of its *Inquiry into the Future for Lifelong Learning*, the UK's National Institute for Adult Continuing Education (NIACE) concluded that it was imperative to rethink what constitutes ICT literacy in order to enable people to be involved in 'creation and action as opposed to passivity...the increasing ubiquity of computers gives us little choice regarding whether we are affected by their presence and functionality[and we] need to better understand the implications of this, so that future societies are the ones we seek rather than the ones we end up with' (Mauger, 2009: 6). Such expanded competencies include understanding that:

> Computer technologies are not neutral – they are laden with human, cultural and social values. For example, the development of neural networks, recognition algorithms and data-mining present contexts for human behaviour that will be central to how we live our lives...[it is] all changing as a result of how we use social networking tools, home entertainment systems, health monitoring systems, mobile communications technology and so on (Mauger, 2009: 9).

### 7.3.2 The relevance of emerging theories to the findings

One reason why there may be little research to confirm the findings of this study is the premise that digital technologies, if not inevitably beneficial, are at least 'benign' or neutral in their impacts on human and social development. As discussed in Chapter Two, the polarised theoretical debate includes those who believe that a public discussion of 'unknown consequences' is unnecessarily 'alarmist' and pessimistic. Sonia Livingstone argues that theoretical and public debate has yet to move 'beyond a polarised language of public and private freedom and constraints, opportunities and dangers' (2005: 168). She sees a significant challenge in assisting young people to effectively participate in the wider public sphere as they use digital technologies to supplement or replace traditional relationships with the adult world. There are implications to consider:

> that participating in a common culture – sharing experiences, reaching decisions, negotiating values – depends ever less on the co-location of participants. Rather, the media serve to displace participation in time and space, permitting new forms of collectivity but perhaps also inhibiting old forms of deliberation, or introducing new grounds for exclusion (2005: 177).

Livingstone co-authored a Europe-wide survey of children's use of online technologies which identified serious gaps in research about emerging issues and challenges. The survey revealed a lack of multidisciplinary, multi-method, contextual and longitudinal research:

> We found only two, current, longitudinal studies, most research being concerned simply with the short term nature and consequences of internet use. Some studies are repeated a few years apart, providing the possibility of trend analysis. But more tracking studies are required to understand the wider implications of online technologies in the long term (Staksrud, Livingstone and Haddon, 2007: 43).

Some of the possible 'unforseen consequences' of deploying digital technologies may already be emerging. According to neuroscientist Susan Greenfield, 'harmless' social networking sites are causing such psychological problems in children as such attention-deficit hyperactivity disorder. She argues that the sites 'are devoid of cohesive narrative and long-term significance' and 'as a consequence, the mid-21st

century mind might almost be infantilised, characterised by short attention spans, sensationalism, inability to empathise and a shaky sense of identity' (cited in Wintour, 2009). Elsewhere she argues that if the human environment radically changes, so will the brain:

> What I am suggesting is that the environment now for children in the West is different from at any other time. Technology can mean that for a large part of their time children can inhabit a two dimensional environment, that is, on the screen. I think we should at least query whether that will actually force changes in the brain in a way we haven't experienced in the past.
>
> It will only be a threat if we sleepwalk into it and say 'well, that's technology for you, that's human nature, there's nothing we can do' – or, worse – 'no one's going to change my brain, I'm inviolate, everything is fine (2008).

Greenfield also makes an observation that reinforces the views of many rural case study respondents:

> Real conversation in real time may eventually give way to these sanitised and easier screen dialogues, in much the same way as killing, skinning and butchering an animal to eat has been replaced by the convenience of packages of meat on the supermarket shelf. Perhaps future generations will recoil with similar horror at the messiness, unpredictability and immediate personal involvement of a three-dimensional, real-time interaction (cited in Wintour, 2009).

Greenfield's cautions and her calls for more research have received criticism in many online blog sites. Nevertheless, Japanese psychiatrist Himanshu Tyagi has warned that the negative as well as the positive impacts of social networking sites must be investigated:

> People used to the quick pace of online social networking may soon find the real world boring and unstimulating. It may be possible that young people who have no experience of a world without online societies put less value on their real world identities and can therefore be at risk in their real lives, perhaps more vulnerable to impulsive behaviour or even suicide (Tyagi, 2008).

It seems that the expectations of 'the digital future' are either too sensitive for wider public debate or pose too much of a dilemma. 'Hype and the noisy clamour of future projections are indispensible and central to the shaping of technology', writes Brown. 'And yet, on the other hand, we want to avoid the costly price of disillusionment, overshoot, hype and overselling' (2003: 5). Brown argues for a more critical understanding of temporal and spatial features of digital technologies so that their potential problems can become more transparent, yet he warns that such a 'reflexive engagement...cannot logically rule out hype but only become more sensitive to the many hidden futures that hype so often silences' (2003:18).

According to Harmut Rosa (2007) the pace and scale of change is accelerating. If so, then communities may not have much time to begin understanding the causes, characteristics and consequences of an accelerated 'life tempo'. One possible outcome is a 'forced exclusion' as people become disconnected, lacking the resources to keep up with the dynamics of technical and social change affecting their quality of life. David Harvey is generally critical of 'speed' theories, but he also sees 'uneven geographical development' linked to the inability or unwillingness of communities to fully engage with the pace of global, economic change: 'whole populations, cultures and territories are thereby presumed to be incapable of shaping their own history, let alone influencing developments elsewhere' (2006: 72). The implication for policies for sustainable, innovative and democratic futures (at both local and global levels) is that opportunities for deliberative decision-making may contract rather than expand.

A former Attorney-General in the Australian government, John Faulkner, called for a public debate about privacy protection and technology, with government playing a central role. He argued that:

> We can hardly be surprised that technological developments often seem to trade privacy for convenience, for profit, for uncensored, unregulated speech, or for efficiency in law enforcement. Too often, privacy is considered at the end of the process, when debate starts about how the technology will be used (cited in P. Hudson, 2008).

Similarly, the tensions between security and freedom manifest in issues such as criminal use of digital technologies is leading to fear and exhaustion by government agencies responsible for protecting citizens. A frustrated superintendent in the

Queensland Police's Fraud and Corporate Crime division, Brian Hay, stated: 'I expect to see at some stage in the future that there will be a real debate on the benefit of the internet. Should we turn it off?' (ABC TV, *Four Corners*, 17 August, 2009). The risk of resolving complex challenges by simple political solutions is a possibility if public disillusionment with the promises of 'the digital future' is ignored. (Unfortunately, neither of these comments received broad media attention and were delivered to conferences of legal professionals rather than in any wider public fora.)

Internalising responsibility at either the individual or collective level requires an ability to respond actively to change rather than passively defer to others (including 'legitimised' experts) or to engage in 'blame games' (including issues concerning 'private benefits but public costs'). It also has a moral and ethical dimension - decision-making is not a simple rational process (Schwartz, 1977). Knowledge awareness of the consequences of decisions comes from personal experience as much as from information. A study of environmentally-inspired action taken by consumers showed that proximity to, or dependency upon, natural environments gave 'knowledge about the state and rhythm of nature' that acted as 'cues' for connecting people to issues requiring responsibility (Soler, 1995: 266). This supports the concerns of case study respondents that people are increasingly 'isolating' themselves physically and mentally from place, with a consequent negative impact on personal responsibility for changes in assets that support quality of life. The importance of tacit knowledge rather than codified and global information for decision making in *in situ* relationships was also supported by the empirical evidence.

While the political emphasis on individual responsibility appeals to instincts for freedom and independence (particularly potent for people attracted to rural lifestyles) it requires a capacity to think critically and reflect upon consequences. However, the evidence of both case studies and the wider context suggests that this capacity is lacking, with demands for faster and more frequent decision-making at the expense of reflection upon issues, options and consequences. The dramatic increase in the quantity of instant responses in digitally-mediated communication observed in everyday community life is likely to be contributing significantly to the growing deficit in such a capacity for responsibility.

A good indicator of whether people are capable of adapting to digital technology with all its pervasive interactivity is the issue of mobile phone use on public roads.

Although private cars were never intended to be mobile theatres, the use of videos (including filming) further adds to driver distraction and inattention to conditions in real time. Young drivers filming themselves travelling at over 200 kmh and then placing the images on YouTube have been reported in both Tasmania and Norway (*Age*, The [Melborne], 30 November 2006). Many films and online content from the USA show drivers talking and texting while using phones because it is still legal to do so in two-thirds of that country (SBS, *World News*, 28 July 2009). Australian road safety authorities have reported increasing use of mobile phones by drivers despite tougher regulations because 'the message is not getting through' about such 'high-risk distraction and inattention' (ABC, *Radio News*, 29 October 2009). Such 'immersion' in the use of this technology, when combined with the blurring of private and public spaces, has serious implications for the principle of shared responsibility by all road users. It is a particular risk to rural quality of life where people must increasingly rely upon private transport, especially in Tasmania.

The capacity for shared, collective responsibility is very much dependent upon motivations, abilities and opportunities exercised in everyday life. Motivation to take wider responsibility may be undermined by a 'culture of fear' promoted by media and political interests, including over the risks posed by ICTs. Yet such 'moral panic' is a likely result of people feeling inadequate to 'cope with and negotiate the problems they face' (Furendi, 1997). The link between responsibility for personal developmental needs and community assets is critical.

The question of community capacity for self-determination of futures involves owning the ends and the means to achieve them. The ambiguity of the case respondents about a coherent sense of benefit from the emerging 'digital future' is reflected in the following view:

> Neither optimism nor pessimism is prevalent in visions of the near future these days; it seems fundamentally open and uncertain. A main cause is that the present is oblique and difficult to conceptualise. It could also be said that no particular direction emerges from this present time, narcissistically obsessed with itself and terrorised by the demands of the next moment (Eriksen, 2001:129).

The increasing scarcity of private time and space in people's lives has emerged as a strong indicator of trends contrary to expected improvements in quality of life, including for rural communities.

### 7.3.3 Needs and assets

There are flaws in the theoretical assumptions within most discussion about ICTs in relation to needs development. Both the case and context data suggest significant changes in how communities perceive needs to satisfy human and social development. These changes directly involve ICTs and affect individual motivation, abilities and opportunities to take responsibility towards self, others and their environs, especially in terms of physical and mental health.

The contextual data particularly show evidence of an erosion of such basic needs as caring and confidence. This supports the warnings of Finnish technologist, Pekka Himanen, that the real challenges of the global information society arise from the exhaustion and fear that undermines the benefits of societal and economic transformation (2004:8).

As the 'global market' facilitated by ICTs continues to offer seamless and 'unlimited' opportunities for consumption choices, perceived needs move further away from place, with the risk that the nexus between human needs and *in situ* assets will be broken. This also risks reinforcing the widely promoted perception that individuals must be responsible for any adverse consequences of failing to adapt to new technologies – a view that encourages even further 'self-absorption' with individual interests and challenges.

Both the case and contextual data indicate that community assets are being taken for granted. Although policy-makers and researchers do monitor and evaluate some assets (notably financial, social and natural capital) there is little research into other assets that are regarded as intangibles or givens. Cultural and political assets are often presumed to be stable enough that few questions need to be asked about their continuity and resilience. Yet, with a declining sense of shared responsibility for *in situ* assets that underpin desired qualities of life, such assumptions need to be challenged.

Cultural assets, such as the creation of stories based on *in situ* events, experiences and world views, are undergoing significant changes. The supply and demand sides of content accessed through new media involve a market distortion as the global sources of faster, cheaper, mass-produced information (such as 'celebrity news' and marketing presented as 'infotainment') constrain the space and time consumers have to access local sources. This is clearly observed in Australia's most popular news websites, such as ninemsn.com.au. Knowledge about place, especially of place-specific challenges facing citizens, is in danger of being lost as newspapers close and a capacity for local investigative reporting disappears. This is one of the 'unexpected consequences' of the digital age.

The new media are thought to promote an increased diversity of choice, but this may be illusory. According to the Australian Consumer and Competition Commission's chairman, Graeme Samuel: 'the internet is simply a distribution channel. It hasn't shown any signs of providing a greater diversity of credible information, news and commentary'. In addition, the 'repackaging of existing content' from existing media further reduces diversity of information (ABC, *Online News*, 28 September, 2006).

Case respondents considered regional newspapers to be essential assets, yet their assumption that local media will be being able to share the expanded digital market is at best not verifiable. A rare study into the viability of community newspapers moving online was undertaken in the American state of Oregon. It found a decline in local content as increased technical and commercial pressures made it difficult to compete with the websites of larger newspapers (Cassady, 2005). The massive scale of external competition inhibits the development of many regional online sites. The present study's case respondents noted that young people especially expect a constant supply of new content on websites or they will choose other sites. They also acknowledged that little was known about the actual reading patterns of online users in regards to content, with the likelihood of fast skimming and increased movement onto links to external content.

In the initial deployment of mobile phones, security through more accessible communication was a key factor in the rapid domestication of these devices (Ropke, 2003). Yet such a basic need was supplanted in the marketing of the 'next generation' wireless internet phones by Australia's largest telecommunications company (Telstra) as it pushed for an early closure of the regional analogue network in 2007. The compromising of security by 'entertainment' frustrated many rural

people. As one New South Wales farmer expressed it: 'we don't want all the gadgets, internet, etc. We just want a phone that works' (SBS, *World News*, 28 April, 2008). The marketing of these entertainment services ignored the estimated additional cost of $100 a month to consumers (ABC TV, *News*, 21 February, 2008). Similarly, but less reported, was the main 'demand' for high-speed broadband in which 65 percent of the content on Telstra's second cable from the US is music and video downloading (Nine Network, *News*, 8 April, 2008). Telstra envisages that faster broadband will also allow 'hologram' teachers to be beamed into Australian classrooms beginning in 2013 (ABC TV, *News*, 27 May, 2008). Whether it is consumers, citizens, governments or industry driving these 'needs' is rarely investigated in the research fields associated with ICTs.

The issues discussed in this section have implications for democratic citizenship, especially regarding competencies to engage in shared responsibilities for assets underpinning needs. They are also pertinent to the 'end' purpose of learning.

## 7.4 Implications for policies for learning

### 7.4.1 Potentially weaker learning outputs

As we have seen, there is evidence to suggest that the impact of digital technologies may be contrary to general expectations of improved community competencies. Despite policy and marketing rhetoric, there is no compelling evidence that the benefits derived from deploying ICTs outweigh the costs of replacing traditional learning experiences, especially those delivered face-to-face.

Even those advocating greater adoption of ICTs in formal learning raise questions. Thus, the UK's *Futurelab*, seeking to 'challenge and disturb some of the assumptions' in discussions about education in the digital era, asks:

> To what extent are we prepared, as a society and as educators, for the massive changes in human capabilities that digital technologies are likely to enable?
>
> To what extent are our future visions of education based upon assumptions about humanity, society and technology that are no longer valid?

> To what extent can we, as educators, help to shape the developments of technology in order to enhance human development? (2007a).

It argues for a rethink of the 'digital divide' as 'a social rather than "simply" a technical or economic issue', in which 'skills, informed choice, content and community' are important dimensions involving both users and non-users (2007b: 31). The question of improving human agency over change processes is central to the 'learning society'. Although the deployment of digital technologies is intended to counter marginalisation of disadvantaged groups (including some rural communities), understanding the conditions for social exclusion is essential. A study in urban Sweden and India found that active mediation between government ICT visions and community-based organisations helps prevent people moving from being socially 'anchored' (confidently engaged) to being 'outcast' (dis-empowered) (Beck, Madon and Sahay, 2004: 283).

As discussed in the previous chapter, several issues concerning unforseen consequences for learning processes are overlooked in research and policy-making. A sustainable, innovative and democratic future for rural communities requires improved community capacity in regard to three essential learning outputs: creativity, cooperation and critical thinking. These abilities should be seen as intangible 'human assets', though unfortunately they seldom are.

### 7.4.2 Creativity

Creativity involves imagination and problem solving that leads to innovation. It relies upon a diversity of ideas and perspectives, often flowing from varied and direct experiences in everyday life. The close observation of plants, wildlife, domestic animals and seasonal changes has inspired many human inventions and cultural endeavours. Such direct linkages to first hand, un-mediated sensory experiences have been integral to human creativity for thousands of years. These 'real world' conditions may also be the source of the human 'instinct' which guides risk assessment, in ways not yet fully understood.

Ironically, increasing immersion in virtual 'worlds' to learn about 'reality' may constrain the future development of creative competencies. This affects the potential for maintaining and enhancing existing assets for innovation in rural communities.

The globally successful trilogy of the *Lord of the Rings* films was made in New Zealand, with a conscious decision to employ rural residents rather than urban-trained experts from Hollywood. To produce the innovative special digital and physical effects, Richard Taylor of *Weta Workshop* tapped into 'rural culture' to give the film its most important human attribute:

> It's an almost intangible innocence, unhindered by what the rest of the world thinks; it is the necessity to make your own fun... to think on your feet, invent as you work...(and) they have nothing to dictate over them, or telling them that they shouldn't be inspired'. Important for successful creativity and cooperation is 'modesty in your personal life...its all about a life experience state of mind (interviewed for Competitive Advantage New Zealand [see Finlay, S., 2006]).

These rural strengths stem from the everyday experiences necessary to learn self-reliance in relative isolation with limited resources and close proximity to people and nature. Such ingenuity, when mixed with new technology, created innovations acclaimed by the global film industry (including the 2009 3D film, *Avatar*). The question that arises, however, is whether such traditional rural attributes can survive if everyday life becomes immersed in urban thinking and acting mediated through digital technologies.

The potential loss of human attributes for creating value from ICTs needs careful consideration. The rural case study respondents anticipated increasing urbanisation of the rural 'lifeworld' and a decline in key capabilities among children due to more passive, indoor consumption of entertainment and competitive, materialistic pressures. In 2007, the rural-based Danish toy maker, *Lego*, abandoned computer games to promote its traditional building blocks to counter the trend towards children being 'hooked on video games' and 'short on time for free-spirited, creative play'. It will be a challenge, as 'age compression' is making children abandon traditional toys for digital technology products intended for adult life (Hatch, B., 2007).

Several youth trends converge in the issue of creativity, including a general decline in outdoor experiences and in a capacity for patience. Creativity also requires tolerance for a diversity of ideas and of ways to learn, which are as important in fostering imagination as to social, cultural and political diversity. Excessive competition, which appears to be emerging in rural communities, is contrary to this, as it is to both

cooperation and reflective thinking. The rural tradition of sharing responsibility for the resolution of problems is also an example of how all three essential attributes mutually interact to deliver the underpinnings for not only innovation but also sustainability and democracy.

### 7.4.3 Cooperation

Shared, open dialogue for problem-solving requires the motivation, ability and opportunity to engage in such behaviour. Yet the case and context evidence suggests that ICT-mediated relationships encourage individuals to become 'self-absorbed', with an ever-expanding range of perceived needs flowing from more consumption options. Personal digital devices help encourage an unprecedented sense of 'being in control' in satisfying immediate needs (especially by children) which can lead to impatience and a feeling of less dependency upon others *in situ*.

Two examples of unexpected trends in behaviour cast doubt on expectations for an improved capacity for cooperation. In all countries, optimism about local government online sites expanding engagement and cooperative dialogue within the community has been dampened by disruptive, polarised and aggressive communication and, in extreme situations, site hacking. Although associated 'e-government' online services are increasingly utilised there is no evidence that they have facilitated any greater trust in relationships, despite replacing face-to-face communication.

The second example highlights a significant challenge to efforts to build cooperative conditions at home, school, in the workplace or in public spaces. The increasing prevalence of Attention Deficit Hyperactivity Disorder (A.D.H.D.) among children and young people results in 'over-stimulated' and 'impatient' individuals disrupting relationships and adding to stress at home and elsewhere. Although the causes of A.D.H.D. are complex there is a correlation between its increase and the pervasive role of ICTs in daily life. A US study found that natural settings had a positive influence on A.D.H.D. children, with a 'dose of nature'. (such as a walk in a park) helping their ability to concentrate (Taylor and Kuo, 2009: The initial findings were reported in the *New York Times*, 17 October, 2008 [see Cummins, 2008]). And as we have seen, the trend away from spending time in natural, outdoor environs was a major concern of case respondents.

7.4.4 Critical, reflective thinking.

This competency is not only a key adjunct to cooperation and creativity, but also for developing responsibility. Time and space for reflective thinking is essential, yet there is widespread evidence of an increasing scarcity of these 'resources', leading to the stress that short-circuits critical, reflective thinking. Thus, a series of studies of the users of elevators in the USA by the Crown company showed declining patience as people 'continuously hit the lift buttons to save a few seconds' (ABC TV, *The Midday Report*, 10 June, 2008). The trend is compounded by the 'necessity' to simultaneously use multiple digital technologies. The competence to make informed communication decisions and judgements on content (including seeing bias in unfamiliar online information sources) appears to be less important than technical skills.

A declining capacity to recall decisions and consequences was a concern to case respondents. The speed and quantity of 'real time' information exchanged on 'short message' networking sites such as Twitter could have implications for how human memory is formed, although, as with many aspects of the rapidly changing digital landscape, research is currently missing. Similarly, the impact on observation and memory formation of the reliance on GPS digital satellite devices in private cars also constitutes a research void.

There is uncertainty over whether the essential competencies of creativity, cooperation and critical thinking will be developed through current trends in ICT use and content. This has implications for the overall capacity of communities to achieve human and social development, as well as for policy outcomes. Although sustainable, innovative and democratic rural futures require supportive conditions for creativity, cooperation and critical thinking, there is minimal monitoring and evaluation of these processes and outputs.

## 7.5 Risks to sustainable, innovative and democratic rural development policies

The findings indicate critical flaws in overall visions of 'the digital future'. There is no compelling evidence that the deployment of these technologies in everyday life is building community capacity for shared responsibility for the future of place - either

at the local level or globally. Specifically, each policy area needs to address the following risks.

### 7.5.1 Sustainability

There is emerging evidence that new patterns of extreme weather events risk the stability of natural assets (especially basic food and water supplies) and subsequently all other assets. To prevent global warming from severely affecting the quality of life of humans, new thinking and acting is required. Yet the data from this study show that shared responsibility for the future of place - at the global level - is unlikely to occur if trends in excessive individualism, competitiveness and consumption at the local level continue. An orientation towards satisfying ever-expanding personal needs is contrary to the basic message of 'thinking globally, acting locally' to safeguard the needs of others, especially future generations.

The consumption of energy is at the heart of the global warming dilemma, yet there has been a failure of public understanding, response and action on the impact of digital technologies on global energy demand. The high energy draw of ICTs is the fastest growing cause of escalating energy consumption, with domestic and personal use most complicit within this (BBC, *Online News*, 4 July, 2007). The expectation that ICTs will deliver sustainability outcomes will remain flawed whilst this singularly fundamental factor remains unchallenged. For example, IT experts have conditioned people not to switch off PCs and neither the media nor educational institutions have adequately moved to correct this high level of unnecessary energy consumption. Community understanding of the overall energy load of innovations, such as plasma televisions, digital radios and digital 'photo frames' (which replace printed photos) remains poor. In Australia, a national scheme to recycle 'e-waste' from the increasing numbers of obsolete PCs and mobile phones was only introduced in late 2009.

Even though climate change issues dominate politics, the inconsistencies in informal and formal learning about such issues are notable. For example, the deployment of 'continuous energy use' digital technologies to replace 'once off energy use' newspapers is ignored. The energy load involved in transforming libraries to store e-books is also not openly discussed, nor even the longer-term security questions over central databases replacing physically individual books. Throughout the public discourse on 'the digital future' there is an assumption that sufficient energy supplies

will continue to support these new forms of recording and sharing knowledge and ideas.

Digital technologies pose a 'double jeopardy' as not only their use but their content encourages increased personal consumption. Case respondents directly implicated digital technologies in the increasing preoccupation with personal consumption. The rural adoption of urbanised lifestyles based on global images of the 'rich and famous' appears contrary to the traditional rural value of living within one's means. The maxim of the Norwegian philosopher, Arne Naess - 'rich life, simple means'- now struggles to gain traction as a guiding principle for human thinking and behaviour (Naess and Rothenberg, 1989). The traditional capacity of rural communities to analyse the 'means to ends' for quality of life is undergoing unprecedented change as people adopt the ICT-mediated, standardised global patterns of consumption. As the content of the new media becomes increasingly commercialised and the speed of promoting new fashion, images and products accelerates, the pressure for instant gratification of 'needs' will only increase. As many case respondents indicated, so too may 'dissatisfaction' with rural places increase.

Inge Ropke argues that 'the lack of reflexivity in routine practices' reduces the likelihood of the environment having important meaning in everyday activities (2009: 2496). The challenge of reducing the impact of increasing consumption will depend, in part, on understanding how higher material-intensity practices result from the pressure to do more in less time: 'focussing on the composition of practices rather than the composition of consumption categories turns the attention towards different dynamics and highlights, for instance, the environmental relevance of the scarcity of time' (2009: 2496).

In her earlier study into consumption dynamics and technological change, Ropke concluded:

> The socio-technical development, in which the mobile can be seen as a core symbol, continues the trends towards increased fragmentation, mobility and individualisation - trends that have proved to be environmentally costly in the past. Even if many people meet these trends with ambivalent feelings, there are few indications that they will slow down (Ropke, 2003: 187).

According to Eriksen, who laments the loss of slowness and coherence in everyday life, 'the pollution of time and space, more difficult to quantify than the pollution of

air and water, is not yet on the environmental agenda' (2001:164). Public debate (especially in Australia) about the complex question of who is responsibility for the future of place is fragmented and polarised by 'long-term collective security' versus 'short-term individual freedom' tensions. The capacity for the community to think and act in terms of the needs of future generations and the assets to support them remains an unknown quantity. It parallels the debate over individual food choices, obesity and collective health costs. The challenge is compounded by the unknown, long-term impact of the 'filtering out' of the immediate environmental context by increasingly individualised technologies and their personalised content (Lair, 2005/2006).

### 7.5.2 Innovation

Several case respondents indicated that the constant pressure to innovate is undermining their sense of agency over the future of place and the role of agriculture in it. Collective assets such as social capital (with the social relations that produce altruism and trust) have been found to be vital for dynamic learning and economic development at a regional level (Lorenzen, 2005; Lee, et al, 2005; Crowe, 2006). Trust in regional economic systems is related to space 'partly through places embodied in trust and partly through trust embodied in places', including 'through a socially constructed need for face-to face meetings' (Orderud, 2007). Capacity building in rural communities requires cooperative processes for dialogue, trust and active participation. These are the values that support self-confidence for the future:

> Self-confidence means that the community has faith in its own possibilities, its inhabitants, its resources, its know-how and its social system. At the same time the community must learn new ideas and co-operate with other communities and institutions as regards activities that can develop the community without making it dependent and destroying its strengths (Amdam, 2000).

This view reflects the much greater application of what the Norwegians call 'retro-innovation': building upon the strengths of existing assets, such as for food growing. It also helps explain the lower sense of confidence in Tasmanian farmers who have been encouraged to move away from regional cooperative, small-scale production to become dependent upon high-cost technological investments and contracts with centralised processing and retailing corporations. It is also important to recognise that

there are 'untraded assets' of place, including knowledge that supports a 'culture for cooperation' (Floysand and Sjoholt, 2007).

In the search for innovation some needs may not be readily articulated: 'needs that are difficult to express are situated in the user's context and are experienced by the user as a perceived lack of satisfying solutions' (Ericson and Stahlbrost, 2006). The case data showing ambiguity and contradictions over the benefits of digital technologies exemplify this situation. As we have seen, the compulsory replacement of Australia's analogue mobile phone system in rural areas by a less reliable yet more expensive 3G network is an example of ignoring needs. The entire process is likely to be repeated with the industry push for a 4G network within a few years.

Lundvall argues that the new economy for regional development requires extensive and comprehensive competency building, as 'any strategy that gives technology an independent role as a problem-solver is doomed to fail'. He suggests that vital lessons are overlooked in the 'hype' of much of the 'pro-market, anti-government' discourse surrounding new ICTs, including that 'the historical success of the radio and television might have been less impressive if service content had been left completely to private market competition' (2004). A case can be made, then, that the active intervention of government to support comprehensive community learning for decision-making about ICTs is an extension now warranted.

### 7.5.3 Democratic citizenship

The capacity to think and act in accordance with open, transparent and informed democratic processes depends upon information, communication and learning. Yet the increasingly powerful technologies that mediate such flows are themselves removed from mainstream political deliberation. There is a strong tendency in political discourse to defer to technological and social expertise rather than to build the capacity of the public to integrate everyday issues with macro policy formulation. The narrow range of 'stakeholders' represented and the absence of wider public consultative processes in formulating the 'digital revolution' raises the question of effective ownership of both the means and the ends in this 'great transformation' of society. This 'vacuum' in public discourse undermines the potential of ICTs to enhance democracy. There are critical issues at stake when the community is not equipped to make informed decisions about the development of digital technologies.

Foremost is the weakening of the role and power of citizens to influence, manage and negotiate change.

The question of 'digital divide' in the 'network society' in which only those who can afford access 'have the privilege of cosmopolitan placelessness in, and dislocation of, their communicative lives', affects economic, social and cultural opportunities (Barney, 2004: 48). The increasing cost of 'upgrading' and using ICTs, especially for regional communities, remains an issue of equity. Barney highlights the challenge to equitable economic and political power from the increasing dominance of network technologies by more consolidated industry owners, such as Microsoft, entertainment industries and retail chains. This trend casts doubt on assertions of a 'revolution' in power relationships within and between societies (2000: 106). He adds that there is a 'profound misunderstanding' that individual users of computer networks are 'challenging' the influence of corporations and governments in their lives. The 'mistaken belief' that people are independent ignores the reality that the networks that link computers, and the hardware and the software, are all supplied and have to be paid for (2004: 109-110). The growing concentration of ownership of ICTs also sees vertical integration of digitalised design processes and products, 'contrary to beliefs that everyone will be an equal producer of network content', whilst horizontal integration between old and new media is rapidly increasing worldwide (2004: 114-115).

Couldry, Livingstone and Markham argue that a bigger issue than trust in politicians is the question of 'voice (knowing, through being heard, that your trust is not being taken for granted)' (2007: 193). While there are opportunities in online communication, face-to-face interaction is still required to 'restore belief' in politicians (2007: 193). Couldry *et al.'s.* research has focused on rethinking 'mediated public connection' in terms of citizens' sense of agency in the 'public world'.

> Our primary focus has been on the many people who sense they have a social responsibility to engage, yet are gradually losing trust in political institutions and, especially, losing faith that their contributions to issues they themselves consider require public resolution will be adequately taken into account by governments. From that perspective, what matters most is sustaining the broader *action-contexts* in which paying attention to the world of public issues through media seems a useful thing for citizens to do. Nothing less

> perhaps is required if the legitimacy of the democratic process is to be maintained under today's conditions of increased complexity and uncertainty (2007: 195).

The case studies presented here indicate that such a challenge is imperative. In Tasmania, especially, a sense of disempowerment among farmers has continued to grow as overseas-owned corporations obtain support from industry and the political representatives of the agriculture sector itself to effectively pay farmers below the cost of production (*Tasmanian Country*, 23 October 2009; 6 November 2009; 23 November 2009; 27 November 2009). As with media ownership and policy-making about digital technologies, the rise of centralisation, opaque power relationships and weak consumer engagement reinforces a loss of agency over change processes in rural regions.

Despite the opportunities to be more informed and to engage in reflexivity that are afforded by the individualisation of digital media, there appears to be a significant percentage of the population interested mainly in 'celebrities'. A UK study found 14 percent of adults (averaging 32 years) to be in this category, and that it also correlated with the lowest voter participation rate. The most distinctive characteristic of this cohort was 'low news engagement, high disengagement [in civic life] and high media trust' that suggests 'a willingness to accept the media's version of the public world along with a disinclination to challenge or engage in it' (Couldry, Livingstone and Markham, 2007:169). The findings also contest the popular view that youth preoccupation with 'celebrated popular culture' will renew democratisation (2007: 182). Other evidence is emerging that contradicts the belief that ICTs are expanding the percentage of politically engaged citizens (Debicki, 2005/2006).

The development of digital technologies advances at a pace and scale to which most people are oblivious until the actual marketing of new products and services commences. Web 2.0 will soon be replaced by Web 3.0, the platform of mobile phones will soon enter a 4G era and gaming devices will rapidly expand their inter-activeness and mobility. Yet the design and deployment of these more powerful devices involves very little public discussion. This involves a crucial issue for democracy, notably the expansion of 'e-voting' that moves beyond simply replacing paper ballots by electronic machines to replacing the dedicated polling location itself. The implications of using individual home-based computers or, most likely, personal mobile phones, to vote are far too ranging to discuss here. Yet, as the case data

indicate, the subtle elimination of moving to a designated physical space could adversely affect the quality of critical, reflective thinking in the most important decisions of democratic citizens. The context data also reveals unexpected patterns among young voters that could become more intense with e-voting, especially after 2011, when the 'digital generation' can vote in Australia and Norway. In the UK, experiments with e-voting have not resolved disengagement and are 'beset with their own problems' (Couldry, Livingstone and Markham, 2007:18). When Finland amended its *Election Act* in 2006, it specifically excluded internet or mobile phone voting because 'the secrecy of the vote cannot be ensured...nor is it possible to prevent the purchase of votes' (eFinland, 2006).

Contrary to those who see digital technologies as 'equivalents' to previous technologies (such as the telephones, radio and television), these devices have no real precedents, especially as they converge into new powerful forms. While their 'limits are as yet unknown...whether the democratic promise of the internet fades as did earlier visions of social transformation...remains to be seen' (Lenihan, 2001:39).

### 7.5.4 Specific risks to rural communities

The findings support the view of Karen Evans that a more open and informed public debate about the push to transform societies through digital technologies is required. Although her research was grounded in marginalised urban communities, her argument concerning hype and rhetoric is applicable to rural regions.

> [T]he importance of locality, of "situated knowledge", of networks built around trust and shared experiences have been largely disregarded and the global, the expert and disembodied community unconstrained by the limits imposed by place, have been perceived as the most significant relationships ... the result has been a disproportionate interest in technology and its powers to transform and a concomitant disregard of the human potential and abilities which enable technology to work and the personal and social relationships which will inspire its use (Evans, 2004: 174).

Several additional implications specific to rural communities arise from the findings of this study. Foremost is the risk to the prime motivation for rural people to remain in place and to engage in shared responsibility for its assets - the quality of life that place provides. In both Norway and Tasmania, the satisfaction of basic needs from

the assets of rural places, especially through trusting, secure social relationships, was seen to be vital to the raising of children. Although respondents perceived some negative changes in community thought and action, they were confident of the continuity of valued capitals and assets. For the most part they believed that the assets of place, such as social, cultural and political identity, would continue to guarantee resilience by consciously 'selecting the best, rejecting the rest' among the many externally-driven changes. Given the contextual data and the evidence presented here, such an assumption may not be warranted.

Despite respondents' ambivalent views about the role of digital technologies in the perceived decline in community responsibility for the future of place, the use and content of these technologies is implicated in all negative trends regarding the development of needs and assets. The increasingly ubiquitous deployment of digital technologies, and the climate of optimism over the capacity of individuals to adapt or domesticate them, appears to have constrained public debate over their impacts. Such conditions help explain the low level of competency for informed decision-making about the role of ICTs in shaping thinking, acting and relationships with place.

The risk to rural communities is that the accelerating pace at which more powerful emergent technologies are coming on stream will not only cause public debate about policy responses to further 'lag' behind such developments, but rural perspectives are likely to be condemned to a 'vanishing periphery'. It would be ironic if devices that are potentially spatially and temporally liberating actually deliver a more centralised, monochromatic future for rural communities, but deterministic attitudes behind the fast approaching 'digital future' may close out the space and time for rural communities to evolve their own destinies. The current public debate suggests a passive equating of 'progress' with a quality of life defined by global, urban and increasingly commercialised interests. Arguments for equating 'positive' rural development with an embrace of 'cosmopolitan regionalism' (see, for example, Amin, 2007) reinforce the narrative, as do suggestions that ICT-based rural education should seek not only to 'modernise' agriculture but also to expand 'entertainment' industries (Kozma, 2005).

Without an improved capacity to question, analyse and decide upon the impact of digital technologies in all aspects of life, rural communities may also find traditional knowledge, skills and values replaced (or even appropriated) by de-contextualised and codified competencies. This study has given some insight into changes in what

and how rural people learn about place. The trends suggest less variety in ways people learn about themselves and their immediate world, with fewer first-hand, *in situ* experiences. Once knowledge assets about place are eroded, the capacity to think and act according to grounded memory is severely weakened. This is a risk embedded in the 'digital learning revolution' that promises further liberation from the constraints of place, but what is potentially lost in the transformation to a 'globalised life' also needs to be considered:

> Merging mobile technology with internet access will vastly expand the potential and dynamics for an almost unimaginable interconnectivity. The fact that those transacting will be without knowledge of, or control over, the technology infrastructure that supports them may become the single most important issue for lifelong learning to address (Mauger, 2009: 26).

The fundamental question on which rural communities seek assurance is whether 'the digital future' is pluralistic enough to empower them to shape and own the 'means and ends'. This question was not addressed in this study, and the only way it can be is through improved formal and informal learning about the role of digital technologies.

This is an argument supported by Barney as he addresses the implications for civic education of technological trends:

> There is also the matter of public engagement in political judgement, including judgement about technology itself, not just as a means but also as an end. Citizenship of this sort runs counter to the current of contemporary technological society and also, it would seem, to current priorities for an education system designed to serve that society. This is a serious political problem, one that calls for an equally serious political effort on behalf of the priority of citizenship in the educational agenda of the technological societies in which we live (2005/2006: 112).

## 7.6 Solutions

### 7.6.1 New knowledge, skills and values

The assumption that competencies and conditions are adequate for informed decision-making about the impacts of digital technologies has not been verified by this study.
There is a need to build competencies to address rural policy challenges, especially to support expansion of the learning outputs of critical thinking, cooperation and creativity.

In addition to earlier calls for new forms of digital competency, there is also a specific one for media 'literacy' to support citizenship competency attainment. Silverstone argues that the infrastructure and space of global communication has become a 'moral space', as a 'mediated world' - a 'Mediapolis'- is not only changing lifestyles but is 'challenging what it means to be human' (2007: 164). As more people become consumers and also producers of online content, understanding the need for a responsible and accountable media culture is even more essential. Unfortunately, media literacy as a critical civic activity to counter the 'blunderbuss of media regulation' has been generally ignored (2007: 176). There is also a need to develop community understanding of the 'non-transparency' of media mediation with its 'moral implications' (2007: 180).

The challenge to build the decision-making capacity of the community is immense. In a 'period of transition, with the media environment diversifying, globalising and commercialising ahead of both an updated regulatory framework and of public understanding of these changes...we are witnessing a series of dilemmas where private and public values clash' (Livingstone, 2005:178). The concept of 'literacy' should be expanded to include 'the powerful post-print media that dominate our informational landscape' so that people can develop the 'ability to analyse, augment and influence' interaction with media' (Merilampi, 2006). In particular, critical evaluation skills for usage and content of ICTs are required from a more 'responsive and adaptive education to develop young people's understanding of human rights, roles and responsibilities in their relationships with new media' (O'Connell and Bryce, 2006). While it is also arguable that children gain such media competencies as they engage directly with a rapidly changing media environment, the effectiveness and adequacy of 'incidental' learning is questionable.

The cycle of continuous lag and reactive response to problems associated with digital technologies in everyday life needs to be broken. A solution would be a positive, learning intervention that empowers, minimises risks and maximises potentials of digital technologies to serve the development of individual needs and collective assets. A refocusing of both formal and informal learning on broader 'non-technical' abilities would strengthen motivations and opportunities for informed decision-making about the role of digital technologies. The domains in which these reforms need to occur are as follows.

7.6.1.1 Conceptual knowledge:

- Basic psychological and physiological human needs and how they influence decision-making about ends and means;
- Basics of how systems of assets work in theory and practice (for example, financial) to 'demystify' the expertise that often inhibits agency over complex issues. Closer attention to the roles of social, cultural and political capital;
- Points at which assets interact with each other and especially the role of *in situ* assets in underpinning basic needs;
- Connections between individual and shared responsibilities, rights and roles.
- Basic indicators of quality of life;
- Time and space and the impacts on thinking and acting (including how spatial and temporal factors influence how people learn - and unlearn - behaviour);
- How ICTs mediate human experiences of the world and therefore relationships with self, others and environs (ranging from daily use of senses to observation of seasonal and longer-term changes); and
- Basics of visioning, learning and decision-making processes.

7.6.1.2 Instrumental knowledge:

- How to convert information to knowledge for decision-making;
- The use of 'situated knowledge' (locally contextualised), tacit and codified knowledge;

- Engagement in 'double-loop learning' for feedback on the consequences of decisions made after undertaking basic risk assessments and cost-benefits analysis (including into 'hidden' costs); and
- 'Balance' points of learning from direct (real), virtual and outdoor (nature) experiences.

7.6.1.3 Skills:

These are in effect 'new tools' to assist the use of digital devices, with an emphasis on the three core skills discussed throughout the study: critical, reflective thinking; creativity; and, cooperation. In addition, skills are needed for face-to-face communication (to build confidence, minimise anonymity, mistrust and other issues); problem solving (including cost-benefit determination of content and use); decision-making patience; and, producing knowledge (to overcome passive consumption).

7.6.1.4 Values:

As discussed, all forms of responsibility have clear moral and ethical dimensions. Understanding that all information is formed and accepted in terms of the values embedded within it is important for critical thinking. The passive consumption of increasingly realistic and gratuitous violence as entertainment is an example where the cultural context of the source is important. Images affect behaviour, otherwise all forms of human expressions and emotions used in successful marketing would be pointless. The use and content of digital technologies involve inherent decisions about values and cannot be excluded from capacity building.

The failure to develop ethically-based protocols for behaviour is a significant problem as the deployment of digital technologies enters new spaces. An example is the censorship controls adopted by US airlines (and later by Australian airlines) as a result of passengers accessing extreme violence, pornography and abuse sites when internet access was introduced in 2008. With the new media becoming increasingly centralised in terms of ownership and supply sources, conflict over values embedded in 'market-driven' content will increase. The irony for the optimistic view that digital technologies help create 'happiness' is the emergence of more psychological warnings that 'constant exposure to apocalyptic and terror-filled' content can 'depress, flatten the spirit and make us pessimistic' (*Mercury*, The [Hobart], 26 September, 2009). Such a development would undermine the capacity of humans to

enter into the sort of cooperative values dialogue needed to maximise conflict prevention or resolution. The ability for tolerance of diverse perspectives, needs and ideas is essential if learning is to be a discursive process, based on listening and understanding situational complexities.

#### 7.6.1.5 Media, consumer and citizenship education

Finally, it is recommended that both formal and informal learning opportunities be created to develop the following competencies:

- Content-focussed skills, especially for critical thinking about needs development;
- An understanding of the structure, ownership and connections between new and old media networks;
- An understanding of both consumer and citizen rights, roles and responsibilities regarding use and content of ICTs;
- An understanding of planned developments in digital technologies and their likely usage and impact on everyday life, longer-term quality of life and community assets; and
- Learning for decision-making about alternative visions of a 'digital future'.

### 7.6.2 Implications for further research

The explorative nature of this study has unearthed more questions than it has answered. As shown in this chapter, there is a need to investigate a number of issues that are overlooked in current research. In particular, a closer examination of the relationship between the development of community capabilities for responsibility for the future of place and for decision making about the role of digital technologies is needed. Most research to date has not considered how digital technology usage and content supports individual needs and collective assets.

The data presented in this study warrant further research into the obstacles that currently constrain the decision-making capacity of individuals, communities and governments. Why there is low motivation, ability and opportunity to critically analyse the impact of digital technologies on needs and assets – and quality of life

itself – is in urgent need of investigation. Acceleration in the pace and scale of new technologies will have both positive and negative impacts human and social development. Scenario studies would assist the understanding of how forces shaping current technological trajectories could deliver further unexpected outcomes.

Although the deployment of digital technologies is central to policies intending to deliver sustainable, innovative and democratic futures, there is little monitoring and evaluation of broad community learning outcomes by those implementing such policies, including policies for the 'digital education revolution'. It is essential to expand the current narrow range of quantitative studies (such as time-use patterns) into qualitative research on issues such as physical health and social and cultural risks (including aggression and depression) that undermine positive developments.

The study has also identified a lack of research with a specifically rural or regional perspective and more, especially of a qualitative nature, could be undertaken into the following:

- The production and usage of local, *in situ* knowledge through online sites and the supply and demand sides for this knowledge compared to external sources;
- Indicators to monitor and evaluate development of quality of life needs and *in situ* community assets; and
- Indicators to measure unforseen 'exclusions' from information, communication and learning due to individual, community or policy factors.

Finally, it will be important to develop practical guidelines and tools that individuals and communities can apply to confidently meet the challenges of more complex decision-making as digital technologies become even more pervasive and ubiquitous.

### 7.7 Limitations to the findings

This study is intended to be a broad, explorative investigation into uncertainties regarding the impacts of digital technologies on rural community relationships and responsibility for place. The complexities involved in gaining such insights required the study to be multidisciplinary, theoretical and empirical. With ICTs now

ubiquitous globally, the choice of case sites that are culturally diverse yet geographically similar was important. Ideally the number of case respondents (averaging 15 in each region) would have been greater. However, to address this problem care was taken to select respondents who represented active users of the technologies engaged in the processes of learning and communication across their communities.

To allow generalisations to be made from the interpretations of the case data, it was necessary to expand the contextual element as widely as possible. This detail was also prompted by the case findings indicating poor availability of information about the role of ICTs through either formal or informal learning channels. Not only did such contextual data verify respondents' perceptions but it extended it into national and global trends.

It is the unexpectedly strong correlation between the Tasmanian (Australian) and Norwegian situations that suggests that these findings are potentially applicable, even if limited, to other rural communities. As the suggestions for further research indicate, this study must only be considered a provisional insight into a highly complex and rapidly changing field of inquiry.

## 7.8 Conclusion

The study has investigated the capacity of comparable Norwegian and Tasmanian rural communities to understand and own the emerging 'digital future' - a prominent and visionary term in government policies, especially in Australia. It examines issues of change, continuity and responsibility for the future of the geographical places over which citizens potentially exercise most agency. It argues that the development of community responsibility for *in situ* assets is essential to the provision of basic needs that underpins quality of life at all levels, from local to global. Such a capacity for learning and decision-making is vital to the sustainable, innovative and democratic outcomes envisaged in 'the digital future'.

The absence of empirical data needed to critically examine the assumed outcomes of deploying digital technologies - especially from the perspective of rural communities - motivated this study. Despite policy acknowledgement of the unprecedented transformative power of digital technologies, minimal monitoring and evaluation

exists on how their mediation of relationships with place is affecting a community's self-defined quality of life. The precise impacts on the capacity of people to actively share responsibility for the future of geographical places is unknown - in particular, how the expected enhancement of skills, knowledge and values (including the competencies of critical reflection, cooperation and creativity) is being realised. The study provides insight into the learning challenges facing rural community ownership of 'the digital future'.

The study proceeded via inductive, qualitative research that applies elements of case study methodology and grounded theory to explore the connections between changes in community relationships with place and the deployment of digital technologies. The many utilitarian benefits of digital technologies, such as expanding social networking, accessing information and e-services, is taken as a given. (Such obvious benefits of ICTs are confirmed by the case study respondents, who were all work and home users.) Instead, the study has analysed issues of concern to case respondents that are perceived to be new ways of thinking and acting about place. By focussing on the patterns of usage and content, the study has tried to avoid, in large part, the polarised debate between 'optimism and pessimism' regarding these technologies.

The analysis of changing community relationships with place in terms of physiological and psychological needs and the assets that support their attainment indicates a trend away from traditional collective responsibility in rural communities. Needs are increasingly motivated by consumerism, individualism and competitiveness and are de-coupled from *in situ* assets, which are either being taken for granted or associated with dissatisfaction with, and lack of interest in, rural place. Such trends run counter to the community's articulation of desired place attributes, especially those deemed desirable for raising children.

Although respondents were generally confident about adapting to further change, their optimism is based on a trust in the capacity to 'select best, reject rest' in maintaining such community assets as social and cultural capital. Yet, despite greater access to information, respondents reported no evidence of increased community understanding of the complex, integrated problems impacting upon place. In Tasmania particularly there is a sense of dis-empowerment and marginalisation in the face of centralising pressures, including some exhaustion from having to cope with constant innovation demands. Along with a perceived decline in local knowledge assets and the identity base, there is a fear of false expectations of 'continuity' of

place on the part of exiting youth. The latter often express a desire to eventually return, while manifesting disengagement over decision-making about the future of rural places. Rural communities, and particularly its young members, were perceived as constructing new views of place-based needs, assets and relationships. Urbanised/global lifestyles are fast displacing the cultural traditions (plus memory and knowledge) of geographical place. Competencies are perceived to be shifting away from physical activity, patience and place-based entertainment, with doubts raised about capacities for risk taking and problem-solving, especially in public spaces.

In both case regions, these concerns were related to temporal, spatial, informational and communicative factors, and many were related to the use and content of digital technologies. But the current capacity of communities to make informed decisions about such impacts is very low. Respondents were ambivalent about their capacity to determine the overall benefits and costs of replacing conventional information and communication processes with mediated digital usage and content. Although some expressed concern about essential competencies being lost, there is a very low level of informed opinion on the overall impacts of digital technologies.

Insights from the case data concerning changes in needs and assets are confirmed and placed within an expanded context by examining the information available in the public discourse of media reports, public surveys and broad-based public communication. These wider data show little evidence of community competence to negotiate and manage the digital mediation of *in situ* relationships. They also suggest that governments are struggling to formulate effective responses to an ever-expanding range of 'unforeseen consequences' that have significant individual, and, therefore, collective costs. The broader data cast doubts on the extent of added 'security' in everyday life and 'agency over change' from deploying digital technologies. They also suggest that increasing 'freedom' to control time and space is not providing greater opportunities for the quality reflexivity, creativity and cooperation that are anticipated within the policy realm. There is no positive trend in community capacity for 'learning for decision-making' within the anticipated 'digital future'. Individuals are struggling to find the time and space within which to make informed longer-term decisions about their own future and that of their shared place. There are rising levels of anxiety, depression, bullying, image competitiveness, sleep/eating disorders, risk taking, violence, personal debt and fraud, especially among youth. At the same time there is no evidence of improved capacity to manage

the constant skill and decision demands involved in deploying new digital technologies, either voluntarily (through consumer choice) or by government intervention (to accelerate their adoption).

Although digital technologies do overcome many of the disadvantages of rural communities, this study demonstrates greater complexity and ambiguity. There are significant implications for the assumptions that underwrite key policies and for those made by rural communities themselves. The potential of digital technologies to enhance individual engagement with others to shape the future of place is not likely to be realised if people cannot openly examine the causes for the obvious decline in motivations, abilities and opportunities to do so. The increasing demand for short-term, everyday decision-making reduces the time and space for reflective thought and action on the complex time-lag issues shaping the future. The de-coupling of needs from *in situ* assets reduces motivation to maintain and develop these collective assets, as citizens. Accelerating pressure on time is compounded by the rapidity of change in new media technology that requires more adaptation at a pace and scale unprecedented with earlier technologies, such as television. The real possibility that fear and exhaustion will emerge in more individuals risks not only new forms of exclusion but also constrained learning for decision-making about the future of place. The likelihood of achieving policy outcomes of sustainable, innovative and democratic rural communities will be reduced.

The picture that emerges from the broader contextual study reinforces the case data indicating inadequacy in the community monitoring and evaluation of relationships between digital technologies and the recognition and realisation of responsibilities *in situ*. The supply of learning tools to support individual consumers and citizens in this challenge is, at best, mediocre. Unstructured debate, random and shallow information, and mixed signals are not helping communities claim ownership of 'the digital future'. This situation undermines deliberative democracy, civic culture and citizenship education. Government and media supply increasingly centralised information on consumer and citizen satisfaction levels (especially in Australia) and it is difficult to separate neutral expertise from commercial interests. There are generally poor feedback mechanisms and this in itself is a significant risk to social, cultural and political systems (as the 2008 crisis in the financial system clearly demonstrates).

The widespread view that the deployment of increasingly powerful digital technologies is 'low risk' reinforces community confidence to adapt through 'incidental' learning and, thereby, limits the recognition, understanding and action required for informed decision-making. However, it is essential for democratic citizens to have both critical technological literacy and a capacity to ask questions of ends, as well as means. This study provides no evidence that accelerated deployment of ICTs, in the current vacuum of informed decision-making, will deliver the ends that the means promise. The potential of digital technologies to assist communities meet high-impact, collective challenges (such as global warming) may not be realised without further 'precautionary' research into the kind of learning that is really required for 'the digital future'.

The challenge is further highlighted by the failure of policies (and much of the research that informs them) to invest in broader learning to ensure competency in decision-making about the use and content of ever more powerful digital technologies. Both the integration of the internet with the mobile phones, and the growing consolidation of ownership of wireless ICT networks, will further push the abilities of communities to adapt to the devices and, more importantly, to have agency over the content. It is possible that the increasing convergence of new media may weaken the 'knowledge society' as private consumption overtakes social and economic life, and the knowledge assets of place are replaced by more codified, globally-sourced information.

The low level of awareness and understanding of how ICTs affect the capacity of communities to actively engage in determining the future of place is a critical risk. The current low monitoring and evaluation of the role of ICTs in change processes undermines democratic processes of informed civic decision-making and learning. The only solution to avoid either 'panic' or 'denial' over risks associated with a continuation of poor community competency is learning to recognise, understand and act on the uncertainties of 'the digital future'. This study has shown that ICT use and content patterns are complicit in the erosion of needs and assets that are essential to quality of rural life expectations.

## Appendix A: Geographic elements of the Sogn and Huon case regions

| FEATURES | SOGN AND FJORDANE | HUON VALLEY |
|---|---|---|
| GEOGRAPHY | 18,634 km2 (5.8 percent of Norway's total of 307,800 km2) 110,000 people (2.4 percent of 4.8 million). | 5,497 km2 (Tasmania's total 68,400 km2, incl. islands). 15,000 people (of Tasmania's total 495,000). |
| | County with 26 small municipalities (kommunes) in three distinct sub-regions, culturally and economically. | One regional municipality following a three-council amalgamation in mid 1990s. |
| | Close proximity to Norway's second largest city (Bergen) with improved transport for commuting (traditionally by water, increasingly by rail and road) | Close proximity to capital city (Hobart) with new road (opened in early 1980s) replacing last of traditional water transport. |
| | Sogn refers to the main fjord (world's longest) and 'fjordane' means 'the fjords' (referring to two others in region). | 'Huon' refers to French explorer of 1792, Huon de Kermadec. First permanent European settlement in 1835. Descendants of indigenous peoples still live in area. |
| | Temperate waters of fjords support significant horticulture with extensive ocean fisheries and aquaculture. | Once world's third largest exporter of apples. Aquaculture, ocean fisheries. |

## Appendix B: Interview Guidance Questions

The following set of questions provided a common structure for the interviews in the Sogn and Huon case regions. Supplementary questions used are also shown (in brackets).

In all interviews, questions related to the roles and impacts of digital technologies were not raised until the closing stages of the interview. However, if respondents raised ICTs directly at an earlier stage, then a supplementary question was asked to clarify or expand on the information given.

1) What is most valued about living in the region?
   (...the essential attributes of place?)

2) What changes and trends are noticeable in the last 10 years?
   (...community thinking and acting?)
   (...interactions and relationships with place?)
   (...any particular trends with children and youth?)
   (...how differ from past change periods?)

3) Are there any concerns?
   (...level of participation in decision-making about place/region?)

4) What are the main pressures behind changes and trends?

5) How capable is the community to decide the future of the region?
   (...understanding the challenges?)
   (...level of responsibility and confidence?)

6) Are ICTs/digital technologies a part of the changes (and if so, how)?
   (...connected to any issue raised?)
   (...significant effects on quality of life?)

7) How are the impacts of ICTs/digital technologies discussed in the community?
   (...level of communication and debate?)
   (...availability of information on costs and benefits of use and content?)
   (...extent of monitoring and evaluation of impacts?)

8) How capable is the community to make informed usage and content decisions?
   (...negotiate and manage these technologies?)
   (...any need to improve capacity and how/why?)

The average length of an interview was 50 minutes in Tasmania and 70 minutes in Norway.

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