

## Federal Government Policy and Community Objectives in Regional Telecommunications: A SISP-Based Study of Ballarat

W. David Wilde<sup>1</sup> and Paul A. Swatman<sup>2</sup>

<sup>1</sup>School of Computer and Information Science, University of South Australia, Australia, dwilde@deakin.edu.au

<sup>2</sup>School of Computer and Information Science, University of South Australia, Australia, paul.swatman@unisa.edu.au

### Abstract

The decline of regional Australia in terms of wealth and population during the two decades since 1980 has compelled the Federal Government to intervene. In 1997 the Australian Federal Government devoted in excess of \$A460 million to a grant award scheme called the Regional Telecommunication Infrastructure Fund (RTIF) in which regional communities identified local telecommunication problems and applied for funds to correct them. Our project examines, through the lens of a conceptual framework extended from and informed by Strategic Information Systems Planning (SISP), the effectiveness of the mechanism of this and similar schemes. The primary purpose of this paper is to present a study of the experience of Ballarat in relation to the Australian RTIF programme.

**Key words:** Strategic Information Systems Planning (SISP), telecommunications, regional Australia

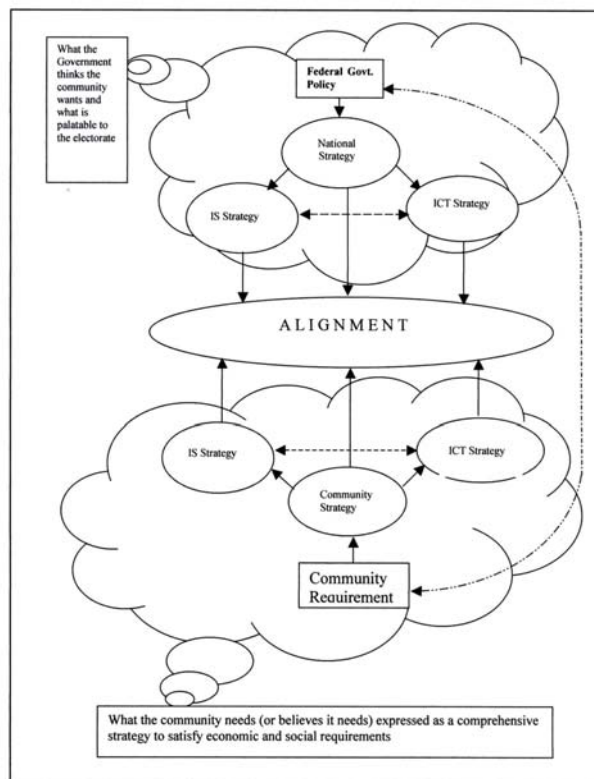
# 1 INTRODUCTION

Political and economic change, globalisation, economic rationalist policies, and retreat from the Keynesian style of economic management are amongst the changes and influences that have eroded the capacity of governments to administer in the traditional way [26,40]. A consequential change has affected the governance of regions, and in recent years many national governments in the western world have approached the pervasive problem of rural and regional decline via a philosophy known as New Regionalism. New Regionalism is a notion which seizes upon the potential of regions as economically viable and self-governing/self-determining entities. It is, however, a rather loosely defined concept, and subject to various interpretations and implementations. Australia, has adapted the notion to its unique regional circumstances and overall political context, and in doing so the Federal Government has adopted a variation incorporating two important elements:

1. no further devolution of independent revenue raising methods is to be made available to the regions [33],
2. partially as a consequence of this, the Federal Government must intervene in the case of expensive infrastructural developments [24].

The adoption of a vision underpinned by New Regionalism has had a major effect upon Government regional policy. The vision for the revived regions includes economic, social and political restructure to enable access to the information age and to the global economy. A crucial enabler is, of course, the quality of the telecommunications network. Yet infrastructure of the quality required, especially within the less densely populated regions, cannot be guaranteed by the recently privatised telecommunications industry which is both competitive and profit seeking [2,10]. The Australian Federal Government sought to contribute to the operationalisation of its vision of a modernised regional telecommunications system through an intervention strategy consisting of a grant award scheme: the Rural Telecommunications Infrastructure Fund (RTIF), later renamed Networking the Nation (NTN) [12,13].

No evaluation criteria were incorporated in the program either from the perspectives of fitness for purpose or successful outcomes. However, the focus of our overall research project concerns the former and may be defined as the effect of alignment between and within Federal Government policy and community planning and strategy development and implementation. For this purpose we have developed a conceptual model – and, on the basis of this, an analytic framework – using principles derived from a body of knowledge known as Strategic Information Systems Planning (SISP). The development of the model and framework has been described in Wilde and Swatman [45] and the applicability and utility of the framework has been validated through a pilot case study in Wilde et al. [44]. In this paper, we briefly define the theoretical underpinnings of our work and our analytic framework, then present a study of the Victorian region “Ballarat”<sup>1</sup> and its interaction with the Federal Government’s Regional Telecommunications Infrastructure Fund (RTIF) programme.



<sup>1</sup> The Ballarat case is described in detail later in the paper.

Figure 1: Conceptual framework

## 2 CONCEPTUAL MODEL AND ANALYTIC FRAMEWORK

### 2.1 An Overview of the Problem Context

The fundamental premise underlying our approach is: *Communities<sup>2</sup> in rural, regional and remote (R3) Australia face problems of economic sustainability characterised by a general population, employment and capital drift from remote areas to regional centres and from regional centres to capital cities. If a community is to prosper, it must act to stem and, where possible, reverse this drift.*

Communities exist and act within a context of opportunities and constraints offered by State and Federal Governments and within a competitive/cooperative environment populated by individuals, organisations and, of course, other communities. In practice, from the governance perspective, Governments formulate policies, and communities adapt their requirements and strategies to align with them. This is further developed in Section 2.5 but we illustrate our initial conception in Figure 1.

### 2.2 Strategic Information Systems Planning (SISP)

Thinking from the perspective of a community developing strategies and plans for a sustainable future (one in which it thrives) we see parallels with the processes which would be followed by a commercial organisation in analogous circumstances. The conventional approach to analogous issues in an organisational setting would be informed by the strategic planning literature – and, in view of the embedded ICT within this scenario, more particularly by the SISP literature.

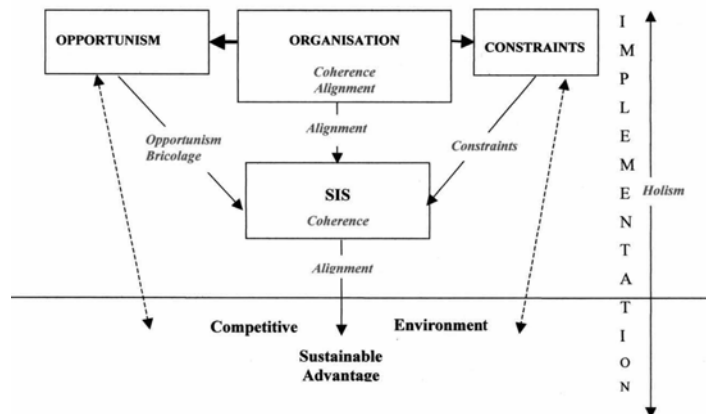


Figure 2: The SISP Factors

We justify the appropriateness of applying SISP to a community analogously to its more conventional application to an organisation in some detail [45]. Simply put, we argue that, intuitively, the parallels between organisations and communities are sufficient to justify an examination of SISP in the community context. More specifically where an organisation profits from the application of Information Systems (IS) by creating an environment in which it has competitive advantage, we argue that a community may create an environment of “comparative thrivingness” by the judicious application of IS in economic, service delivery and social areas. The literature concerning SISP is substantial, the model shown in Figure 2 being devised to illustrate the main components for the purpose of this research. The model illustrates not only the major components of SISP and their interaction with the environment but also the set of relationships which illustrate the context of the derived SISP principles. The strategic information system (SIS) [35,47,19,34] is a creature of the organisation, the overall objectives of which are directed towards

<sup>2</sup> While we recognise that there are definitional difficulties associated with the term ‘community’ [22,32], it is sufficient to take a common-sense view: that a community is geographically circumscribed, but otherwise ‘self-defining’ – that which sees itself as a community, is a community. It is also clear that communities, per se, do not ‘act’ – rather, they may *appear* to act in a coherent fashion as a consequence of the coordinated actions of individuals and organisations. Of course, the same argument can be applied to organisations [23] – which *appear* to act coherently as a consequence of coordinated actions of the individuals and groups of which they are comprised ...and so on. It is, however, convenient to adopt this conventional shorthand notion to simplify the presentation of our arguments.

placing the organisation into a position of 'competitive advantage' [8,16]. The actual process of SISP consists of "identifying a portfolio of computer based applications that will assist an organisation in executing its business plans and consequently realising its business goals" [29, p446].

### 2.3 The Concept of Alignment

Alignment is a fundamental principle of SISP and, perhaps, that most frequently mentioned in the literature. Typically and pervasively, discussion centres on the alignment of IS strategy and business objectives [19,14,43,6,5,36]. In the context of this research, however, we extend the meaning of alignment in two senses. Firstly, as shown in Figure 1, alignment has the connotation of fit, between government policy and community requirements. Secondly, as a community plans for future "thrivingness", therefore, a comparatively straightforward extension would suggest the alignment of community, information systems and ICT strategies. Thus, in Figure 1, similar 'cloud structures' representing the Federal Government and an arbitrary community are placed above and below a central ellipse representing 'alignment'. We term the two complementary notions of alignment, justified in Wilde and Swatman [45], as:

1. Intra-entity, which we term 'horizontal', alignment within each cloud structure,
2. Inter-entity, which we term 'vertical', alignment between the two cloud structures representing the Federal Government and the community respectively.

And so, by extending the context of alignment to the environment in which the community is immersed, we can usefully explore the high-level construct of Federal Governmental policy on regional issues and express this in terms of sustainability of Rural, Regional and Remote (R3) Australia. In general, we see a policy of retaining or increasing the regional population and providing the economic, social and governmental services required to do so. National strategy operationalises sustainability policy and, in the context of this paper, this would include, inter alia:

1. support for rural industries and institutions (e.g., agriculture and universities),
2. providing infrastructure to attract commercial ventures (e.g., transport and telecommunications) and
3. ensuring essential services are available (e.g., health services).

As we suggested in terms of communities, a relatively straightforward extension of the domain of applicability of SISP suggests that alignment of the Federal Governments national strategy with IS and ICT strategies<sup>3</sup> would be beneficial.

### 2.4 The Other SISP factors

We have identified alignment as the richest seam within the SISP literature and have used this concept in developing our conceptual model of the community in context. The SISP literature is not, however, restricted to issues of alignment and we now introduce four further concepts relevant to our investigation which are significantly canvassed within that literature.

The first two concepts are closely related to alignment:

**Coherence:** Whereas alignment is a state, coherence refers to processes which, in this context, lead to the creation and implementation of strategic plans. Coherence depends upon the capability of the organisation to manage and direct planning processes to achieve a satisfactory outcome and relates in part to organisational culture and maturity [38,17,39,31,42,11,37,18].

**Holism:** The concept of holism embraces the successful completion of all stages of the process from identifying strategic applications through to deriving sustainable benefit [29,43,28,7]. We use the term 'implementation' in this context to denote the successful subsumption of the other four SISP principles. The concept of holism in this sense is inclusive of all elements of SISP which properly related would form a framework.

The two remaining concepts are closely inter-linked:

**Opportunism:** The search for sustainable competitive advantage "depends on the interaction between industry conditions and the internal capacity to identify and exploit opportunities" [25]. Opportunities are a binary function between the organisation and the environment. An opportunity only exists because there is a need in the marketplace and other relevant external factors are favorably disposed [9,8,27,46,21,20].

**Constraints:** This concept encapsulates all factors which inhibit the strategic plan from being implemented and is a popular focus of research [29,30,31,14,28]. The conceptual framework which guides the interpretation strategy applied in our programme of research, therefore, might be summarised, perhaps somewhat simplistically, as follows:

*A community planning effectively for 'future thrivingness' might take a holistic and coherent approach, aiming to align its strategies (overall, IS and ICT) both horizontally (within the community as a whole) and vertically – aiming to align strategies with corresponding governmental strategies which are*

<sup>3</sup> In this context, IS strategy relates to, inter alia, systems to deliver e-commerce, systems to deliver social services such as health and welfare and systems to connect to global institutions and global systems. ICT strategy relates to the computing and telecommunications infrastructure which enables the previously mentioned systems to be delivered.

*operationalised within the community context. Implemented governmental strategies offer both opportunities for and constraints on the community. Consequently, an effective community (in the sense of “planning to thrive”) might be expected to act both in ways suggestive of coherent and holistic planning; and in constrained-opportunistic ways – and to absorb the impact of its opportunistic behaviour within a dynamic planning process.*

## 2.5 An Analytic Framework

Our broader research suggests that in the case of most communities, the existence of a formal and coherent strategic planning process or, in fact, of a formal, detailed and documented community strategy is uncertain. Community strategy may be almost tacit, that is, it may exist only in the minds of some prominent and influential citizens – and be the result of informal conversations. Larger communities, however, for example Ballarat [15] and Bendigo [4] in the state of Victoria, have economic blueprints which are explicit and detailed. Regardless of the existence of a formal strategic plan, however, all communities have some level of reliance on ICT and IS and a keen appreciation of local circumstances and the context in which they must operate is evident.

One could argue that horizontal, intra-community, alignment is unlikely to eventuate through chance or simply opportunistic behaviour. Consequently, evidence of alignment can be taken as indicative of some level of strategic planning.

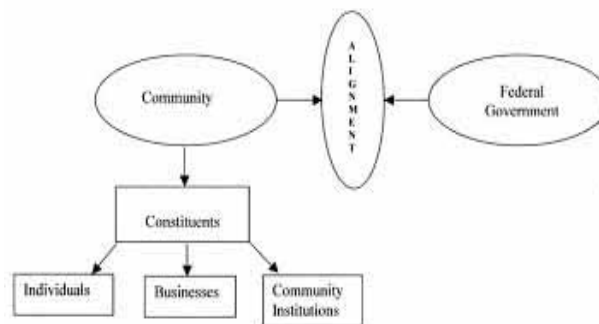


Figure 3: The context of alignment

In Figure 3, we offer an expanded view of the intra-community context of alignment as a development of section 2.1. The conjunction of Federal Government's national policy and community objectives, which are specific to localised conditions, forms a context within which the individual, community institutions and business may operate. In a sense, the community takes from government policy those aspects that are relevant to it. An extended example of context formation may be seen in the Kennett/Stockdale<sup>4</sup> Victorian government's recognition of its total lack of influence in telecommunications policy during the period covered by Federal RTIF/NTN initiatives. Its response, in furtherance of State interests, was to establish IT&T infrastructure through a State-wide network called VicOne. This forms an electronic backbone available to Victorian regional business at commercial rates which could not be justified on an individual basis. This potential for connectivity, therefore, may form part of rural business strategy.

Although the alignment phenomenon is both complex and dynamic and, indeed, may appear to take on a life of its own, it is the social and organisational elements within the community (individuals, businesses and local governmental institutions) which must adapt to the context and form their own strategies in relation to it. At an individual level, a person may be seen to form a personal strategy in relation to electronic circumstance. For example, by purchasing a PC and connecting to the Internet (a contextual opportunity) certain transactions with all levels of government may also be executed from the home. At an organisational level, business may increase its connectivity as a consequence of contextual opportunities and offer electronic tendering while libraries, as an example of a local government institution, may choose to take advantage of IT&T based opportunities for facilitating interlibrary loans.

## 3 A CASE STUDY – BALLARAT

### 3.1 Application of the Framework

We now report a study of the Victorian region Ballarat in relation to the Australian Federal Government's RTIF and NTN programmes. The city of Ballarat with a population of approximately 65,000 people is one of Australia's largest inland cities and the third largest city in Victoria. The municipal district of the City of Ballarat involves the townships of

<sup>4</sup> Jeff Kennett was Premier of Victoria from 1992 until 1999.

Learmonth (population 300), Buninyong (population 1,800), Miners Rest (population 450) and Cardigan Village (population 200) producing a total estimated population of 80,045 (2001).

Ballarat is located in western Victoria approximately 110 kilometres from Melbourne, surrounded by the municipalities of the Shires of Hepburn, Pyrenees, Golden Plains and Moorabool. Ballarat's traditional industries based upon mineral and agricultural resources have since changed considerably. Manufacturing, tourism, health and community services, education and retailing are now the key industries in the city and these, along with the banking and finance sector and government services, profile Ballarat as a regional service provider. In fact, the Ballarat region may be considered as

*"A fairly distinct region with three sub-regions. You have the Central Highlands the Grampians and the Wimmera. Now they are fairly well recognised regions in tourism sense, in an economic development sense and in a government sense to a large degree. In a business sense, a lot of the grain from the Wimmera goes down to Portland, but in a retail type sense it is still quite a coherent region. Horsham and Ballarat are the major centres. So in that respect we are quite lucky I believe. We do have a fair amount of understanding about what our region involves."* (Inty3)

The approach we took in this study was as follows. We interviewed three members of the Ballarat community<sup>5</sup> who had participated in the region's response to the RTIF and NTN initiatives, all of whom were well known to each other because of the community involvement in NTN, but each was involved in a separate project. The interviews were semi-structured. Each had received a common sample list of questions charting the direction and objective of the interviews but we stressed that this should not constrain the interview. In fact other issues were raised and explored, and opinions expressed as a matter of course. We acquired and analysed a range of associated documentation and then organised the resulting data on the basis of a two-dimensional matrix, the structure of which is derived from our analytic framework. The axes are:

1. Horizontal: Intra-Community; Intra-Federal Government; Intra-State Government; inter-Community/Government.

2. Vertical: Alignment; Coherence; Opportunism; Constraints: Holism.

Each cell of the key matrix represents a concept of significance within our analytic strategy. Within each cell of the key matrix, we recorded (meaningful) labels for concept-instances found within the body of data, then added the concept-instance record itself, with source notation, to a file linked to that cell (and thus that concept). The key (or index) matrix, populated with the data from the Ballarat case study is included as an Appendix to this paper. Guided by the key matrix, we analysed each concept individually, building a storyline, then, again guided by the matrix, we sought to identify inter-linkages between the storylines. Finally, we built a critical description of the experience of the Ballarat community in relation to their RTIF/NTN-based approach to 'striving to thrive'. However, in the interests of brevity, this paper comprises only the key matrix construction and its associated key.

## 3.2 Expanding from the Matrix

### 3.2.1 The Community Context

#### The Concept Structure

Although there was a general local awareness of the RTIF/NTN philosophy of telecommunication infrastructure enhancement encapsulated by Inty2 when he stated *"there were very many community groups that had some understanding and some notion of the fact that they needed to plug holes in their own infrastructure"*, goals in the case of Ballarat were emphatically skewed towards IS in terms of the ICT/IS dichotomy illustrated in Figure 1. In Ballarat, the telecommunications infrastructure was already satisfactory, although within the region *"what's already there differs dramatically from some parts of the region to the other"* (Inty3). It was accepted that Internet connectivity was inadequate but this was being addressed by local industry and there emerged no urgent need to augment the telecommunications infrastructure. Ballarat had already achieved telecommunications competition and price structures had reduced accordingly. The general acceptance of the infrastructure and its capabilities, therefore, diverted attention towards its utilisation. For example, Inty1 in a general description of Mainstreet<sup>6</sup> expressed this circumstance:

*"Ours wasn't about connecting up places, given that there's infrastructure out there, it was about how can we make the Internet a relevant place for local people?"* (Inty1)

Since, in terms of the IS/ICT dichotomy, Ballarat clearly emphasised the IS, the few references to infrastructure involved a much broader interpretation than the notion of competitive carriers. For example, infrastructure according to Inty1 includes the capacity to deliver a total service:

*"In terms of the IT infrastructure side of things, that would have been hard infrastructure in terms of servers and in some cases actually securing external software. Then, also there would have been largely technical officers or technical managers, and people in terms of programming skills to augment that. That infrastructure would deliver an overall service, that was the vision."* (Inty1)

<sup>5</sup> To preserve the anonymity of the interviewees, the pseudonyms: Inty1, Inty2 and Inty3 have been adopted.

<sup>6</sup> Mainstreet was a Ballarat NTN project discussed later in this paper.

However, service delivery was Ballarat's principal strategy including awareness, training and systems. Within our analytic framework, this is classified as IS strategy. For example:

*"The Mainstreet Regional Portal project was a project to grow demand for the use of Internet technologies. It was a project to establish a regional portal across ten shire regions as the target regions and the idea was that through that portal, the region would be able to connect up the web based information that already existed and be able to access a range of services that would help those who hadn't already started taking up online services to be able to more easily, say, establish a web presence or advance and integrate, say, online payment transactions through their web services."* (Inty1)

### **Goals and Opportunism**

Opportunism is most effective in achieving community goals that have been identified and documented. Ballarat had the clear goals of developing an ICT industry and of engaging the population in the use of the Internet. Both of these had been outlined in the ICT plan which at the time of writing (2005) is in its 3rd iteration. An important part of the plan is concerned with empowerment and this implies community participation. The development of Ballarat as an ICT centre is not central to this paper but clearly demonstrates the city's general strategic direction and proactivity. The major goal of the Ballarat regional community was to educate and create an awareness amongst the population of the opportunities afforded by the Internet. So, at the time of NTN in 1998, with a set of guidelines which heavily promoted education and awareness of the Internet in regional Australia, the opportunity to implement some existing plans became a financial reality. The two successful projects that are referred to in this paper are:

1. The Regional Connectivity Project (RCP) which was a combined State, community and Commonwealth awareness and skills based initiative directed at business and the general community linking regional communities. A series of 25 Community Enterprise Centres (CECs) staffed by skilled operators and equipped with Internet connected computers.
2. Mainstreet.au -Western Victorian Region "Electronic Mainstreet" Project which was an electronic portal (Internet gateway) servicing Victoria's Golden West Region providing infrastructure for business, community, government and other participants who wish to develop their own individual websites and pages. Clients utilise the software provided by Mainstreet to develop and maintain their own websites.

Ballarat regards itself as a highly opportunistic community and highly successful at taking advantage of the available opportunities. This is clearly illustrated by the following:

*"I saw it opportunistically. I saw an opportunity to get money into the project and get things up. And I think this region became relatively good at that at various levels."* (Inty2)

*"I think Ballarat's been very good at being opportunistic."* (Inty2)

*"It was opportunistic that the NTN was available to fill some of those needs."* (Inty3)

*"I think this region if you looked at the total funds that would have come to Victoria and the total funds would have come to, say, the Central Highlands region, this particular region would have done quite well in those terms of taking the maximum out of the opportunity that was there."* (Inty1)

However, another view holds that competition within the telecommunications industry and the advent of the new technologies had created a dynamic of its own and was happening despite the impact of NTN:

*"There was a feeling within regional Australia that there was a lack of services and this was creating demand."* (Inty2)

Further, awareness of the potential of the Internet was being driven by the University of Ballarat and Ballarat City Council. The community view was that access was impeded by the lack of infrastructure even though this was improving:

*"But there was in regional areas an overall thrust that said 'we don't have enough infrastructure in this area, we do need to get better in terms of the use of things like the Internet' and NTN was also a vehicle at the time on which some of the finances could be answered in terms of getting these things on the ground. So if you like there was a parallel swell."* (Inty2)

Certainly, the view of local industry was that it was doing all it could to keep up with demand and however well it performed there always *"an insatiable thirst for more"*. This was *"not driven by NTN, what NTN provided was a potential for an accelerator"* (Inty2).

A notable opportunity which seemed to present itself unexpectedly, but was clearly important to Ballarat, was the ability that NTN afforded to identify and build social capital. Inty2 regards *"the ability for certain individual champions to jump on board and say 'we have to push this'"* as *"the single most important thing about NTN in my view."*

### **Constraints, Coherence and Alignment**

In contrast to the frequent mention of 'opportunity' in the data, mention of 'constraints' were relatively few. Indeed, the projects proceeded very successfully, but we conjecture that the interviewees' optimism and constructive attitudes were such that constraints were considered as inevitable impediments to be faced and overcome. For example, funding for the Regional Connectivity Project (RCP) was cut back from the requested amount and the project still succeeded, yet this potential setback was not mentioned in the relevant interview.

The Ballarat processes illustrate the principle of coherence from a number of different viewpoints. Firstly, and perhaps the most conspicuous of these is the networking capacity of the Ballarat community. Evidence of networking within Ballarat is ubiquitous. In essence there were three inter-related aspects of networking:

1. Individual networking. Ballarat is fortunate to possess a number of outstanding individuals sincere in their commitment to community progress. There are *"a larger number of people who were very coordinated with each other"* (Inty2), *"who talk to each other and respect each other"* (Inty3), who display a *"remarkable lack of egotistical requirement"* (Inty2) and who are *"willing to team up"* (Inty2).
2. Institutional networking. All regions were subject to government influence to organise themselves during the 1990s. Relevant and highly effective in this case, was the Golden West Regional Forum set up by the Kennett Government in 1998 *"to look at what issues confronting the region and what were some of the key actions to address those issues"* (Inty3). The process brought together the ten local shires, and the forum itself *"consisted of 23 business and community leaders from across the region and heavily supported by the Dept of Infrastructure both Melbourne and Ballarat"* (Inty3).
3. Industry Networking. This form of networking involves a liaison between individuals or institutions with industry rather than between commercial organisations themselves. The genesis of the Mainstreet project was a university initiative intended to make industry aware of the potential of the Internet. Both the university and the Regional Forum were involved in an approach to industry to fund a business case and *"there was probably twenty organisations that said 'yes', and that raised in dollar terms ...about \$17,000. Part of that also came from the ACC, the Area Consultative Committee; I think they put in about \$4,000. And that enabled the university to move forward and look at the feasibility of the project."* (Inty1)

Networking is a complex phenomenon and the classification above cannot do adequate justice to it. The web of personal relationships and their importance in all parts of the NTN operation was recognised as demonstrated by the following:

*"So you can set up formal processes but it's the informal processes that are a lot more effective."*  
(Inty3)

Secondly, and in direct reference to NTN, the community was concerned that potential applicants were as knowledgeable as possible about the environment of their project. The intention was to prevent applicants from submitting applications that demonstrated a lack of awareness of current infrastructure and systems and to avoid duplication of effort. The Ballarat community was keen to avoid a haphazard approach to gaining awards that failed to fit coherently with the holistic requirements of the community:

*"There is only coherence in them (the award processes) if you have coherence at a regional level. When NTN first started, there was nothing really stopping someone writing an application on the kitchen table with no reference to what else was happening."* (Inty3)

This notion was reiterated by Inty2:

*"The networks and communications are very good here and I think if anything, Ballarat is probably a model of where that sort of networking can create efficiencies and prevent duplications."* (Inty2)

In addition, dialogue was continuing at the regional level and this constitutes the third form of coherence. The regional boundaries are well understood and define three sub-regions the Central Highlands: the Grampians and the Wimmera. The regional context from the viewpoint of NTN was deemed essential. Besides, the major champions and institutions that were driving regional development were intensely loyal to the concept of the region, even though from time to time interests of a more local nature prevailed. But municipal councils are independent institutions and are inclined to follow the path most likely to benefit their own constituents, for example, *"it would be fair to say that the Wimmera is fairly parochial in terms of wanting to own the initiatives that they invest in heavily"* (Inty1). Councils will cooperate if it is advantageous to do so, but more generally they are not *"a cohesive bunch but in terms of the interaction with Regional Connectivity it's all been very positive"* (Inty3). This positive interaction also tended to characterise the Mainstreet project. Initially all three Ballarat sub-regions were involved, but as it became apparent that some municipalities' interests were more local than a regional portal would afford, they separated from the main project to pursue their own initiatives. This proved to be productive in the sense that those municipalities that separated were in a position to write their own applications to NTN and, in fact, the Mainstreet management assisted them in doing so. But a high degree of coherence was maintained in that the online communities that this process produced were constructed within the Mainstreet infrastructure.

A fourth form of coherence occurred as the projects were being developed. Since the practice of networking was well developed in Ballarat and region, it was perhaps inevitable that the successful NTN applicants would maintain a dialogue, as indeed happened. A major catalyst in this process was the University of Ballarat by virtue of its early involvement with the NTN projects:

*"I think that at the time when our proposal would have gone in, the regional connectivity project was in its formative, pre-funding stage as well. So there was certainly a lot of communication between the people involved in the regional connectivity project and the main street regional portal project. There was also at least two other Networking the Nation funded initiatives that the university was involved in."* (Inty1)

From the evidence presented above it is reasonable to assert that the Ballarat community in relation to NTN, had attained a state of alignment. The two main factors that feature in this conclusion are, firstly, that networks that were already established continued to operate and grow within the period of NTN, and were inclusive of the development

of social capital. Secondly, the efficiency and competence with which the projects were managed included a substantial degree of regional involvement.

### **Holism**

The principle of holism emerges from the Ballarat data in two ways. The first of these regards the Ballarat telecommunications system as an entity that will always be imperfect. Inty2 takes the pragmatic view that the community fashions telecommunication requirements in accordance with available funds:

*"Did the policy satisfy communication requirements? I think that you will never satisfy community requirements. What did happen was that communication requirements shape themselves to fit themselves within the funding requirements."* (Inty2)

But in terms of the original aims of "plugging holes and creating level playing field across regional Australia, we're nowhere near it. We've got a long way to go" (Inty2).

The definition of holism in this research focuses on the successful completion and sustainability of the actual projects themselves and their ongoing benefits. This was certainly the case with Mainstreet, which went beyond project specifications and assumed a life of its own. It developed a systems infrastructure which the region could 'buy into' and build upon as requirements dictated or opportunities arose. A further aspect of holism was NTN's influence on awareness of the importance of telecommunications amongst the regions, the learning processes involved and the identification of those interested and capable personnel who contributed to the successful outcomes:

*"What we've done is increased articulatory, increased education, increased understanding and increased self-awareness about how to solve some of the problems."* (Inty2)

*"I think it stimulated a number of different projects at a number of different levels that that gave an accelerated awareness of the importance of the sorts of communications needs that the regions have. And it also assisted in identifying who the champions were in this area."* (Inty2)

The principle of holism covers the projects through all stages from conception, implementation to successful, continuing and sustainable operation. Ballarat rates highly according to this definition. Inty3, for example, rates the success of the Ballarat projects as:

*"Very high, extremely high. It was a combination of some tremendous people in those communities who have very strong commitment to their communities and have the ability to drive money into those things."* (Inty3)

However, Ballarat extended the meaning of success well beyond the scope of the projects. The process of attaining successful outcomes actually affected the culture of the community in that regional personnel developed the ability and resolve to capture a range of opportunities, and the growth of social capital was considered to be an extremely valuable community benefit.

### **3.2.2 The Federal Government Context**

The evidence emerging from the Ballarat case indicates that the principle of opportunism featured only weakly. Ballarat was not a distinctive enough circumstance, according to the data derived, to illustrate any opportunistic feature on the part of the Federal Government. Constraints are similarly negligible in that nothing emerged from the data that indicates that the Federal Government experienced any difficulties in its internal procedures to damage the Ballarat application procedures. Coherence and incoherence, however, were evident in several forms. Opinions were generally favourable in respect of NTN internal processes, the sentiment being that the bureaucracy made some considerable effort to concentrate on the output of the projects rather than rely on process:

*"I know he's typical. He and X are probably two people who are very typical of the types of people who were driven not by 'let's get this bureaucratic process right', but 'what's the outcome for the project'. And while they were well aware of that sort of process, they never lost that focus in terms of what would happen at the end, which was a good thing."* (Inty2)

And this concern about outcomes extended into introducing coherence into the relationship between the projects and the projects champions:

*"I think he is one person in NTN who tried to develop a network between programs that they funded. He consciously worked to try and get people in touch with each other. Now I have a number of contacts with a number of projects that have been driven by X."* (Inty3)

Where there was a possibility of State Government involvement within a project, there was certainly scope for a degree of incoherence. The State and Federal regional programmes were generally not designed to integrate but occasionally opportunities arose where communities could apply for state awards that would complement Federal schemes, in this case, NTN. For example, applications could be made to the Victorian E-Commerce Early Movers program for regional portals to fit within the Mainstreet infrastructure:

*"Yes, that meant that four of the shires potentially in implementation may have had a slightly different agenda but in some ways they would have liked to control their own initiative. And through the state government there was an opportunity for local government to apply for funding under Victorian E-Commerce Early Movers program, I think it was called. And so shires could either apply for funding individually for portal type developments, or they could group together."* (Inty1)

Inty1 considered that at that time the concept of portals was fashionable and the State Government had a desire to be involved:

*"I think at the time the concept of web portals was hot, in some ways, and I think there was some desire by State Government to be seen to be contributing to the outcomes in that area."* (Inty1)

The experience that the Regional Connectivity Project was subjected to was not so benign. Both the State and Federal Governments were involved in this project and the poor integration of their efforts threatened to affect its progress. In the event, both governments seemed to depend upon the other to demonstrate progress before making commitments:

*"Very difficult. The Regional Connectivity Project suffered from it. The Feds wouldn't do it, the State started it and then the State wouldn't do it because the Feds gave us money."* (Inty3)

It would appear, therefore, that from the Federal Government perspective, a state of alignment, in the sense of the conceptual framework in Figure 1, is marginal. It is well summarised in the following quotation:

*"Did you see any incoherence between state and federal regional telecommunications policy? Not so much incoherence but I think the focus needed to be sharpened up on both sides. I think that it was much easier for us to see the focus at state level because there was that huge level of pro-activity in Victoria anyway."* (Inty2)

On the other hand, again from the Government perspective, the principle of holism was reasonably achieved in that the awareness projects in Ballarat were very successful. Large numbers of people were trained and the feedback from both Mainstreet and RCP was exceptional.

### 3.2.3 The Conjoint Context

#### Opportunities and Constraints

Opportunism in the conjoint context has little to distinguish it from opportunism in the local context. The community used the funding opportunity made available by the Federal Government to finance a number of preconceived strategies. Constraints, however, were more volubly identified, in particular, the problems of feedback. It was strongly believed that that the information flow, especially regarding projects, was one way and flowed from the communities to NTN. Where projects might have profited from the experience of others and NTN was in possession of that knowledge, it was not divulged to the communities. The Mainstreet project, for example would have appreciated knowledge of similar web portals:

*"I think it would have been really useful for us establishing web portal type project to be able to access the other projects that were completing similar sorts of projects. And informally we've probably done quite a bit of that over the years. But you can't get the level of intelligence about it that you might if NTN was leading that as well."* (Inty1)

And this seemed to be a general:

*"One of the biggest problems I think with the Networking the Nation project is that they didn't evaluate the projects under it and the knowledge in terms of what was working and what wasn't working wasn't fed into their next round of funding, or their next."* (Inty1)

#### Alignment and Coherence

The principle of coherence arises both positively and negatively in the Ballarat case. Firstly, it is certainly arguable that the relatively smooth application and implementation processes that Ballarat experienced in its dealings with NTN rested on the quality of the relationships between the community and the bureaucracy. The coherence of the processes is largely attributable to the importance which both sides placed on the *"individuals and individual relationships within the organisations that held it (the project) together."* The basis of these good relationships and *"almost without exception we've had very good relationships with the people who were overseeing the project"* (Inty2) was trust:

*"We relied heavily on relationships with various people within NTN because they were people that we trusted and I don't recall at any time where that trust was breached."* (Inty2)

Trust was regarded as a very valuable asset since dealings with NTN were prolonged; from application through to implementation and then post-implementation when assistance was not strictly required of the NTN staff. In the first case, that is the application part of the process, *"even if there isn't a project that looks like it can get off the ground or there's just a concept, they are quite willing to help or to try and flesh it out to get it to a project point"* (Inty2). In the second case, that of project implementation, *"once a project was rolling, that's when people like X and Y became extremely involved to the point where they're almost on the team."* Accordingly, assistance was readily available in events such as conformity to guidelines.

In the final case, referring to the period after project completion, Inty2 has *"seen interest to the point where even beyond the project itself we would still get visits for various things that were associated with it and they would gladly and willingly give us their time to do that."*

Secondly, and related to the above, Inty2 advances the opinion that the Federal Government were surprised and impressed by the quality of the articulation that emanated from regional Australia. The level of understanding regarding potential outcomes took precedence over knowledge of technology. Inty2 expressed this as:

*"What you found was an incredibly articulate response to what the needs were and in some cases I think that many of the strategic bods in Canberra probably found that quite unsettling in the sense that they actually knew what they needed and wanted. They didn't necessarily know how to get it on the ground, nor did they understand necessarily what the implications of rolling out large amounts of infrastructure for companies were or how it could be done. But they were aware as an outcome what sort of needs they had and were capable of articulating that over time."* (Inty2)

However, elements of incoherence arose, firstly, in the area of feedback. The projects had a regular reporting schedule and provided information to NTN regarding progress according to schedule. A constant source of complaint was the lack of information from government to project. Inty1 was moved to comment that *"there was only one information loop. We provided information to Networking the Nation. They never provided anything back."*

On the other hand, NTN responded in some cases to criticism levelled at them about process. Inty2 was of the opinion that the bureaucracy took note of objections regarding process and amended their procedures accordingly:

*"And in many cases we fed some of that process back. I remember talking at conferences and working at panel level where our view was that there needed to be a tighter perspective on how the NTN projects were rolled off and I recall distinctly that in many cases NTN officers would be there at the time when the discussion took place. And I think that there was a learning curve that went on, certainly in the late nineties, that we saw evidence of in later projects."* (Inty2)

Other areas of incoherence are only briefly covered. Many citizens had no previous experience in working with Government at this level and *"they got bogged down by process"* (Inty2). Also, they were very inexperienced in *"the process of getting the infrastructure in place and managing it"* (Inty2). A third issue that caused at least one project some anxiety was the time lag in payments. There seemed to be no time lags in announcements, *"the time frames weren't too long in terms of announcements at that stage"* but after that, from *"knowing that the project had been funded to actually receiving the first payment might ...have been seven months after that. So for a project that's disabling in some ways, because you lose momentum"* (Inty1). A fourth area was that of sustainability. There was a strong opinion that the seeding period was too short and the time to attain self-funding was, in general, underestimated:

*"On the other hand many of us argued that if we could just get some of these projects to pull together, then there is a possibility that they could stay there longer because after the funding period was over they could earn their own money. I think the 'earning their own money' bit after the funding ran out was a harder ask than we thought. And many of us found that it was going to take longer than we had anticipated."* (Inty2)

### **Holism**

Finally, in the sphere of holism it is again pertinent to refer to the problems of Federal and State integration in the telecommunications arena. A lack of coherence in this area will inevitably affect holism in the short to medium term. Inception and completion of projects are difficult when communities must balance Federal and State funding conditions and this caused problems in the Regional Connectivity Project. Inty3 articulated this in his encapsulation of the Federal attitude:

*"Now that was simply saying 'here's some funds which we could utilise to do this sort of thing but its got to be done conditionalised getting State money to start the rest of it'".* (Inty3)

Inty2 also refers to the confusion in one project where *"the integration of what we did at State level and what we did at Federal level was a situation where we had to remind ourselves which side of the funding fence each bit fell"* (Inty2).

According to another perspective, the parallel thrusts of community demand and NTN combined to create a dynamic that generated a burst of activity but which may have happened in spite of NTN but more slowly:

*"Well I think NTN became engrained in a lot of the major thrusts and projects within the regions that we worked in. I think you need to separate NTN from the thrusts that took place, and some of them ran in parallel, some of them wouldn't have existed without NTN."* (Inty2)

But from the holistic viewpoint the general view that emerged from Ballarat is circumscribed. From the point of view of community benefit, there is no doubt that the scheme was successful and that the emphasis from all parties was on community outcomes. Inty2 who moved about widely in the NTN community was impressed by *"the individuals that I (he) met indicated quite clearly in the way that they talked and the culture of what they did and the things they were working for ultimately there had to be, at the end, a community outcome"* (Inty2). If achieving awareness and engaging regional involvement were primary objectives, then NTN afforded *"an accelerated awareness of the importance of the sorts of communications needs that the regions have. And it also assisted in identifying who the champions were in this area"* (Inty2). From the regional perspective Ballarat benefited greatly, indeed. As far as Mainstreet was concerned *"the funding that we received from Networking the Nation was incredibly critical and has generated benefits far exceeding the investment that was made by the Federal Government."* (Inty1). From the national perspective Inty1 considered that *"on the whole it was a programme where there was an awful lot of waste"* and Inty2 tended to concur because of the sheer size. *"It got bigger than Ben Hur. I think it was just really a matter of maintaining control of the individual projects as they came along."* Two related aspects summarise the Ballarat perspective. The first relates to the interpretation of the word success:

*"Well, depending on which policy you're talking about, there are a lot of things that came out of. I think it's a matter of taking what you can to fashion some evidence of success in the policy."* (Inty2)

The second relates to a recognition of the fast moving technology in the telecommunications area:

*"It's changing, a rapidly changing environment so even if there was enough money to invest and get broadband, say for example, into every conceivable place where there were people, it's possible the technology would still be superceded in a relatively short space of time."* (Inty1)

As a final comment the situation which included the emergence of this whole dynamic NTN scheme, the champions that emerged to fly with it and the amount of money that came into the community is encapsulated by Inty2:

*"I'm not sure that in many cases the community knew what hit it."* (Inty2)

## 4 SUMMARY AND CONCLUSION

In this paper, we have briefly described an analytic framework appropriate for guiding studies of the effectiveness of ICT/IS initiatives in support of economically sustainable communities. This analytic framework is described in detail and justified in Wilde and Swatman [45], validated in Wilde, Swatman and Cavill [44], and underpinned by conventional theories of Strategic Information Systems Planning, (SISP). The domain of applicability of these theories has been extended through logical argument, from conventional organisations to encompass such geographically bounded communities as Ballarat.

While our analytic framework is informed by SISP theory – and we argue that it is productive to analyse outcomes through this lens – it is important to note that we do **not** argue that SISP processes are adopted by communities or governments. While both governments and communities **may** operationalise policy through the kinds of coherent and inter-linked strategically planned actions which a domain-extended application of the Strategic Planning/SISP literature describes, documentary evidence of such a process has proved difficult to identify. Indeed, Spencer [41] has argued convincingly, on the basis of actor-network theory underpinned case studies, that ICT policy development (and operationalisation of that policy) within governments occurs primarily through a web of influence 'focused from' specific individuals.

For our current purposes, however, the way in which the planning process actually occurs (the operationalisation of the "planning process") is not, in itself, significant. Significance for our research is to be found in evidence that a community gains (or fails to gain) leverage from actions which are consistent with:

1. a horizontal (intra-entity) alignment of its strategic planning,
2. a vertical (intra-entity) alignment of each of the three strategies with the corresponding Federal governmental strategy.

In this paper, we have presented a study of the case of Ballarat together with the councils of the surrounding municipalities in the region of Western Victoria, Australia. Ballarat had developed a set of coherent strategies to create awareness of the Internet throughout the region and to engage the regional population in its use. The strategy clearly fell into the IS as opposed to the ICT classification of the conceptual framework and emerged from the very effective networks that are a feature of the Ballarat community. Since the strategy aligned perfectly with the NTN guidelines, the opportunistic availability of finance was rapidly seized and the outcomes in Ballarat were predictably successful. The approach we have taken to the analysis – guided by our SISP-based framework – clearly identifies the main streams of cause and effect which determine the ultimate outcomes. The analysis quite clearly identifies the factors that feature in Ballarat's success, particularly the emergence and identification of social capital throughout the region. Equally significant is that the analysis identifies the shortcomings in Federal Government policy, its difficulty in clearly defining strategy which could be construed as waste and the lack of any form of feedback. In Ballarat's case the positives are clearly in the ascendancy and highlighted by the SISP based analysis.

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The Analytic Framework

	Community Horizontal	Federal Government Horizontal	Government/Community Vertical Conjoint
<b>Alignment</b>	a) Positive state of alignment resulting from the coherence activities below [5]	a) Marginal state of alignment [11]	a) Excellent relationships between applicants and bureaucracy, but problems with feedback [16]
<b>Coherence</b>	a) Networking capacity [1] b) Community awareness of NTN environment [2] c) Dialogue at the regional level [3] d) Dialogue between projects [4]	a) Bureaucracy attempt to integrate projects [12] b) Difficulties in Federal/State integration [13] c) Lack of feedback to the projects [14]	a) 'Trust' between NTN and applicants [17] b) Community lacked knowledge of bureaucratic procedures [18] c) Lack of feedback [19]
<b>Opportunism</b>	a) Identification of social capital [6] b) To engage people with the Internet [7] c) Funds to implement [8]		a) Funding as in [8] [20]
<b>Constraints</b>			a) Lack of NTN feedback [21]
<b>Holism</b>	a) Result depends on the means [9] b) Community much more Internet aware [10]	c) Internet awareness as an NTN objective achieved [15]	a) Internet awareness [22] b) Fast moving technology [23]

**Key to the Analytic Framework**

Key	Explanation
1	Networking power in individual, institutional and industry levels combined to conceive and implement NTN projects
2	Community was concerned that potential applicants were as knowledgeable as possible about the environment of the potential project
3	Dialogue at the regional level ensured region wide involvement in NTN projects
4	Project participants maintained dialogue as projects were implemented
5	A state of alignment resulted from networking, awareness and dialogue as in 1-4 above
6	The identification of the region's social capital is regarded as a great NTN outcome
7	There was a region wide involvement with both Mainstreet and the RCP
8	Funds became available to implement regional plans
9	Ballarat achieved as much as they could with the available means
10	Huge step forward in community Internet awareness
11	Due to Federal/State lack of integration over schemes in which they were jointly sponsoring, Federal Govt alignment was at best partial
12	NTN attempted to integrate and rationalize at the project level to achieve coherence
13	The problems of attempting to integrate projects with mixed Federal and State Govt caused incoherent behaviour at both levels
14	NTN did not supply general feedback of like projects since it seemed to have no criteria for evaluation
15	A degree of holism achieved from the Federal perspective in the success of the Ballarat awareness projects
16	The relationships between NTN and Ballarat were excellent and so a state of alignment was achieved in this regard. The lack of feedback [14] detracted from it
17	'Trust' between NTN and applicants was regarded as a crucial ingredient in the project implementation and it was never breached
18	Many people found dealing with the bureaucracy confusing
19	Lack of feedback from NTN to the community can be regarded as an incoherent element in the project implementation processes (see [14] above)
20	Funding as an opportunity (see [8] above)
21	Lack of feedback from NTN to the community can be regarded as a constraint (see [14] above)
22	Internet awareness was regarded as a great success by the community
23	Fast moving technology renders holism from the technical perspective impossible