

SUSTAINING A COMMUNITY NETWORK: THE INFORMATION CONTINUUM, E-DEMOCRACY AND THE CASE OF VICNET

Don Schauder

< don.schauder@infotech.monash.edu.au >

Larry Stillman

< larrys01@optusnet.com.au >

Graeme Johanson

< Graeme.Johanson@sims.monash.edu.au >

Centre for Community Networking Research, Monash University

Introduction

This article further explores a case in the sustainability of community networking initially analysed in a paper presented to CIRN 2004: Sustainability and Community Technology, in Prato Italy, 29 Sept- 1 Oct 2004¹. The present account further clarifies and contextualises the information continuum model (ICM) introduced as a framework for analysis in that paper, and brings the story of the VICNET crisis forward into the 2005 investigations and report of an Inquiry into Electronic Democracy undertaken by the Scrutiny of Acts and Regulations Committee of the Parliament of the State of Victoria (Australia).

The article analyses VICNET² with special reference to issues of sustainability through perspectives both of theory and policy. It provides an initial account of the information continuum model (ICM), a teaching and research model developed and used at Monash University since 1997³. The diagnostic potentialities of the ICM are critically explored through an application of these to the case of VICNET, the main community networking agency of Victoria which, after ten years of successful operation, finds itself at a policy and funding crossroads. The model offers a framework for analysing sustainability and transformation. In the light of a written submission and oral testimony by the Monash Centre for Community Networking Research (CCNR) to the parliamentary Inquiry into Electronic Democracy, in part based on the Prato paper, the article presents key points from the deliberations and conclusions of the committee on the value and viability of VICNET. It concludes by discussing

¹ Accessible at: <http://www.ciresearch.net/conferences/viewabstract.php?id=68&cf=4>.

² <http://www.vicnet.net.au>

³ The initial developers of the ICM were Don Schauder, Frank Upward, Barbara Reed, and Sue McKemmish. Larry Stillman and Graeme Johanson have contributed in the further development of the model.

prospects for VICNET's future as an element in the E-democracy landscape of Victoria, and proposing further development and use of the ICM as a conceptual framework and analytical tool in Community Informatics⁴.

The Information Continuum Model (ICM)

Background of the ICM

The notion of an ICM was prompted by the very successful records continuum model (RCM) developed by researchers in recordkeeping at Monash University, notably Frank Upward and Sue McKemmish (Upward 1994, 1996a, 1996b, 2001, McKemmish, Piggott, Reed & Upward 2005). The RCM has proved relevant in developing Australian and ISO standards in the field of recordkeeping. The relationship between the RCM and the ICM has been explored elsewhere (Upward 2001).

Sustainability, structuration theory and the ICM

The ICM is heavily based on Giddens' structuration theory (Giddens 1971, 1973, 1979, 1983, 1986, 1990, 1991, 1993). The notion of sustainability, as an aspect of social continuity and change, is an essential element of the theory. Giddens views human history as a continuous interplay of social action and social structure. Each both enables and constrains the other. As a result of this interplay, through time and across space, the multiple patterns of interdependence which sustain (and constrain) the lives of people are shaped and re-shaped.

In regard to the sustainability of community networking initiatives, which is one of the key issues in Community Informatics, the ICM seeks to provide a comprehensive means of auditing the situation of particular projects and programs in order to identify what factors, or combinations of factors, represent threats to sustainability. Or to put it more positively, the ICM is intended with a view to corrective action, to help policy-makers, practitioners and researchers systematically examine the status of programs concerning the creation, organisation and sharing of information as a means to identify and articulate strengths, weaknesses, opportunities and threats. The ICM is designed to be applicable beyond Community Informatics to many areas of information enterprise in the government and business sectors.

Key concepts from Giddens

The ICM synthesises a range of theoretical insights, the chief of which is Giddens' extensive body of social thought to which he gave the name structuration theory. His core works, from the perspective of the ICM, are *The Constitution of Society* (Giddens 1986) and *The Consequences of Modernity* (1990) but all his scholarly writings, including those on gender relationships (1992) and globalisation (1999) offer insights that contribute to the ICM, in that

⁴ 'Community Informatics' as referenced in this article is an emergent academic discipline and field of practice in applied Information and Communications Technology (ICT) brought to prominence and initially scoped by Michael Gurstein through the first edited book of representative papers in the field (Gurstein 2000). See also and <http://www.idea-group.com/search/index.asp?type=1&query=gurstein>.

they all in some way elucidate the mutuality of action and structure, and the role of reflexivity, in order to understand power relationships among groups and individuals in society. Empowerment and social justice are fundamental concerns in the application of the ICM to Community Informatics, hence the central relevance of Giddens' work.

Giddens explains the essence of structuration theory as follows:

To examine the structuration of a social system is to examine the modes whereby the system, through the application of generative rules and resources, is produced and reproduced in social interaction. (Giddens 1986, p.353)

To view human history through the lens of structuration theory is to discern a continuous interplay between the actions of people and the social structures that both enable and constrain action. All action influences the development of the structure in which they occur, and all structure influences what action is possible: 'social structures are both constituted by human agency, and yet at the same time are the very medium of this constitution' (Giddens 1986, p.121). The reciprocal relationship between action and structure is called by Giddens the *duality of structure*.

Structuration is from the French for 'structuring' – a continuous, ongoing process, compared to the notion of 'structure', which imparts an impression of immutability. Historically, Giddens' equal emphasis on action and structure can be seen as a corrective to the strongly structural approach to social analysis established by Ferdinand de Saussure in the late 19th century. Continuity in Giddens' sense includes change and adjustment. It therefore has much in common with the notion of sustainability.

Through this cornerstone concept of the duality of structure – in which action and structure are simultaneously independent and dependent variables– structuration theory avoids the trap of determinism. The distribution of power, with the demarcation and re-demarcation of scope of action in society is seen as an endlessly dynamic process in which all participate. Many small actions can have significant structural effects. At all times there is the potential for 'the less powerful [to] manage resources in such a way as to exert some control over the more powerful in established power relationships' (Giddens 1984, p. 374).

There are two major bodies of work which extend structuration theory in ways that are particularly relevant to information systems. These are Adaptive Structuration Theory (AST), whose development was led by Poole and DeSanctis (1990, 1992, DeSanctis and Poole 1994), and the structural model of technology expounded by Orlikowski (Orlikowski and Robey 1991, Orlikowski 1992). Jones and Karsten (2003) have reviewed the extensive impact of Giddens on information systems research. Important as are the AST and Orlikowski contributions, the primary influence on the development

of the ICM from a structurational perspective has been from Giddens' own writings. Information systems as a disciplinary area has tended to focus on the organisational or corporate level of analysis, largely in the business and government sectors, and this is where the AST and Orlikowski extensions of structuration theory tend to concentrate. In contrast the societal level of analysis and particularly issues of empowerment in the civil society or 'third' sector are of high priority in ICM thinking, as they tend to be in Community Informatics generally. This emphasis is congruent with Giddens' main project which is a macro-theory of society, with particular focus on the distribution and re-distribution of power.

Kaufer and Carley: the communicative transaction

Another conceptual influence on the information continuum model has been the constructivist theory of Kaufer and Carley (1993), who acknowledge the work of Giddens and other action-structure theorists (p.87). Constructivism develops the action-structure perspective in a fine-grained analysis of communication, particularly across place and time. At the core of constructivism is the communicative transaction (p.87-89), from which flows an ongoing cycle of learning, action and communication that can change the socio-technical ecology in which it occurs, in a continuous process of co-evolution.

To the extent that action impacts on others, all action can be seen as 'communicative'. Giddens, unlike Kaufer and Carley, makes no conceptual distinction between communicative and other forms of action.

The notion of agency

Although arguably any system of information technology capable of 'learning' or interactive response – in Giddens' terms 'reflexivity' – demonstrates some qualities of agency, Giddens confines his notion of agency to human agents. Only human actors, certainly at the current stage of technological development, exhibit all of the criteria of consciousness identified by Giddens, namely discursive and practical consciousness, and unconscious cognition (1986, p. 7). The ICM follows Giddens in recognising true or complete agency only in human actors.

However some attributes of agency can also be discerned in what Giddens calls authoritative and allocative resources (discussed further in relation to 'modalities', below). These resources are structural patternings – often instantiated in information artefacts – which influence the scope of action available to people, and thus possess some of the attributes of agency.

Kaufer and Carley's notion of agency is similar to that in Latour's Actor Network Theory (ANT), which includes artefacts as well as humans as 'actants' (Latour 1988, Callon 1991, Law 1992). Kaufer and Carley recognise qualities of agency in books and other information artefacts (1983, p.231-3). Some of their key ideas, especially those concerning agency, are used in the ICM. Kaufer and Carley call human agents 'individuals' and artefacts 'artificial agents'. Kaufer and Carley developed their ideas in relation to print technology, and characterise artificial agents e.g. printed books, as passive. Individuals, by

contrast, are active in that they may choose artificial agents as communication partners but not vice versa. Individuals partner with both human and artificial agents in communicative interactions. The result is a co-evolution of self and society:

Because multiple individuals interact and adapt concurrently, their mental models, and consequent patterns of interaction co-evolve. As a consequence, the distribution of knowledge in the society changes and, with it, the culture; as a further consequence, the pattern of interaction in the society changes and, with it, the social structure.

(Kaufer and Carley 1993, p.147)

The interdependent typologies of the ICM

The ICM consists of a set of interdependent typologies, or spectrums of concepts. Their interdependence lies in Giddens' doctrine that all action has some influence, however small, on the social structure in which it occurs (either to reinforce or change) and conversely the prevailing structural patterns enable or constrain the scope of action.

The typology of *agency* discerns agency as residing in:

- Human Action

And also in artefacts or systems of:

- Stored memory
- Metadata
- Technology.⁵

Communicative action occurs only when knowledge is externalised as information. Externalisation of knowledge involves a typology marked in the ICM by four categories referred to as *dimensions*, namely:

- Creation
- Capture
- Organisation
- Pluralisation.

Fig. 1 is a representation of the ICM which highlights the typology of agency as powering the ever-evolving interplay of factors in the model, particularly the dimensions. A further aspect of the ICM's significance in relation to sustainability is articulated in Fig. 1, which depicts the continuous production

⁵ This listing re-emphasises that the relationship between agency and structure is subtle. Like birds and fish in the Escher print, or waves and photons in the theory of optics, the last three categories can be interpreted as either agency or structure depending on viewpoint. Taking a hermeneutic viewpoint, in which the techno-social phenomena under study are regarded as a 'text', the extent to which memory storage, categorisation/metadata and technology manifest as agent or structure in a particular social situation ('the text') depends on the hermeneutic or interpretive context of the analyst ('reader').

and re-production of information as an essential dynamic of societal continuity and change across time.

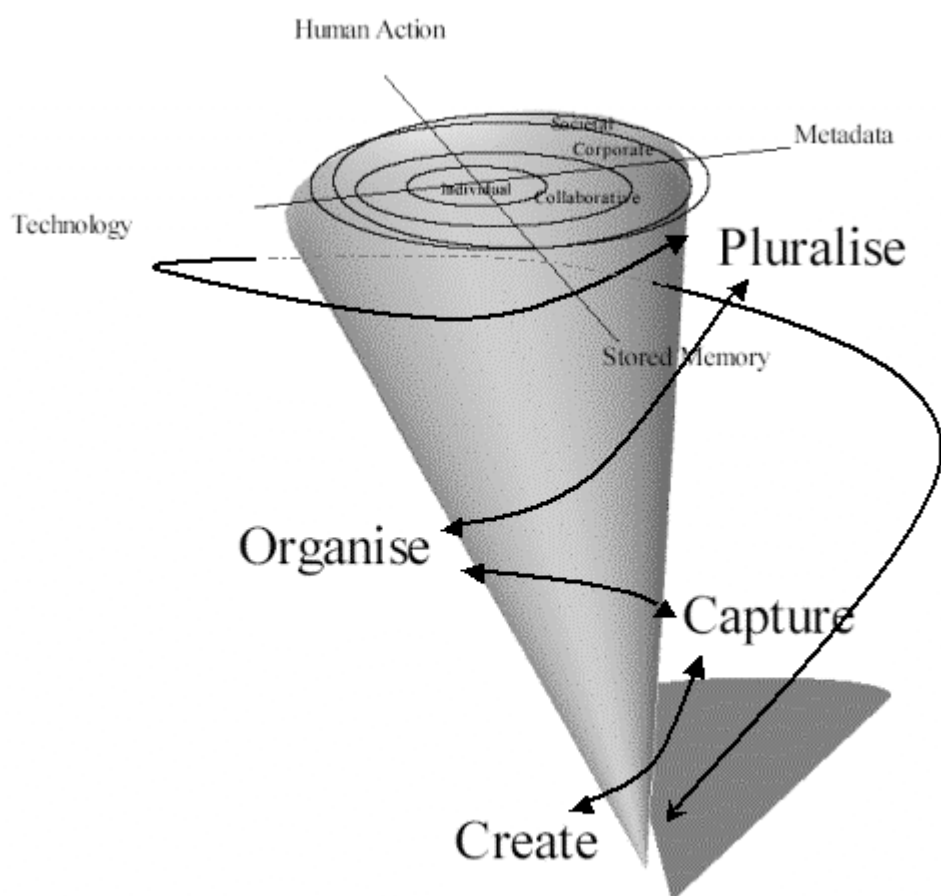


Diagram © Larry Stillman 2004

Fig. 1 Dynamic visualisation of ICM, emphasising the interplay of agency, levels of action and dimensions.

Also featured in Fig.1 are the *levels of action* resulting from (and helping shape) agency. These are represented by the concentric circles at the top of the cone, and occur along a typology marked by the categories:

- Individual
- Collaborative
- Corporate
- Societal.

One key variable that differs for action across these levels is the degree of standardisation or interoperability required in systems of communication. For example at the individual-collaborative levels e.g. in a family circle, or a closely collaborative workgroup, meaning can be conveyed through linguistic or other semiotic systems that are unintelligible to outsiders. However for information sharing to be meaningful for a widening diversity of participants at the organisational or societal and inter-societal levels there has to be a commensurate effort at standardisation of communication codes (languages, protocols such as TCP/IP, metadata systems) to accommodate all the parties to such communication.

Figure 2 is a representation of the ICM that places level of action (and therefore analysis) at ‘centre stage’:

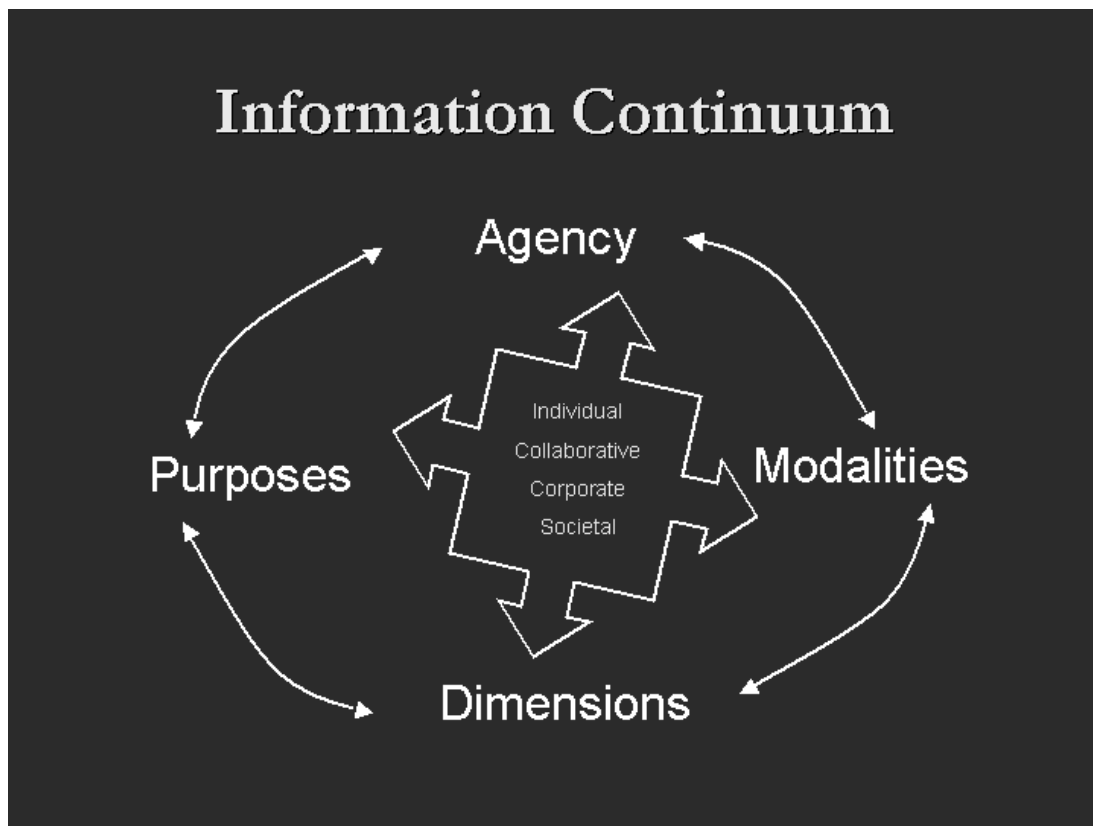


Fig. 2 Representation of the ICM with levels of action at ‘centre stage’

Action occurs to serve human *purposes*. The typology of purposes of communicative action in the ICM is marked by the following categories:

- Information for pleasure – information to enhance living
- Information for awareness – information to maximise opportunity
- Information for accountability – information to minimise risk.

The final typology used in the ICM is Giddens’ *modalities*. These modalities structure the scope of action available to people. The categories that mark the typology are:

- Interpretive – where action is structured through signs and meanings
- Facilitative – where action is structured through the distribution of power (authoritative resources) or artefactual and physical resources such as bricks and mortar, money, or ICTs (allocative resources).
- Normative – where action is structured through norms and sanctions.

Depending on the state of the relationships among the factors covered by the typologies making up the ICM model, actions may have a stronger or weaker influence on other people across space and time – a condition that Giddens calls ‘space-time distanciation’.

Identification of different states of the modalities among stakeholders is a useful aid in understanding the extent of agreement or otherwise in the development of information systems and structures.

A detailed, consolidated depiction of the typologies of the ICM, and the relationships among these across time and space, is given in Fig. 3.

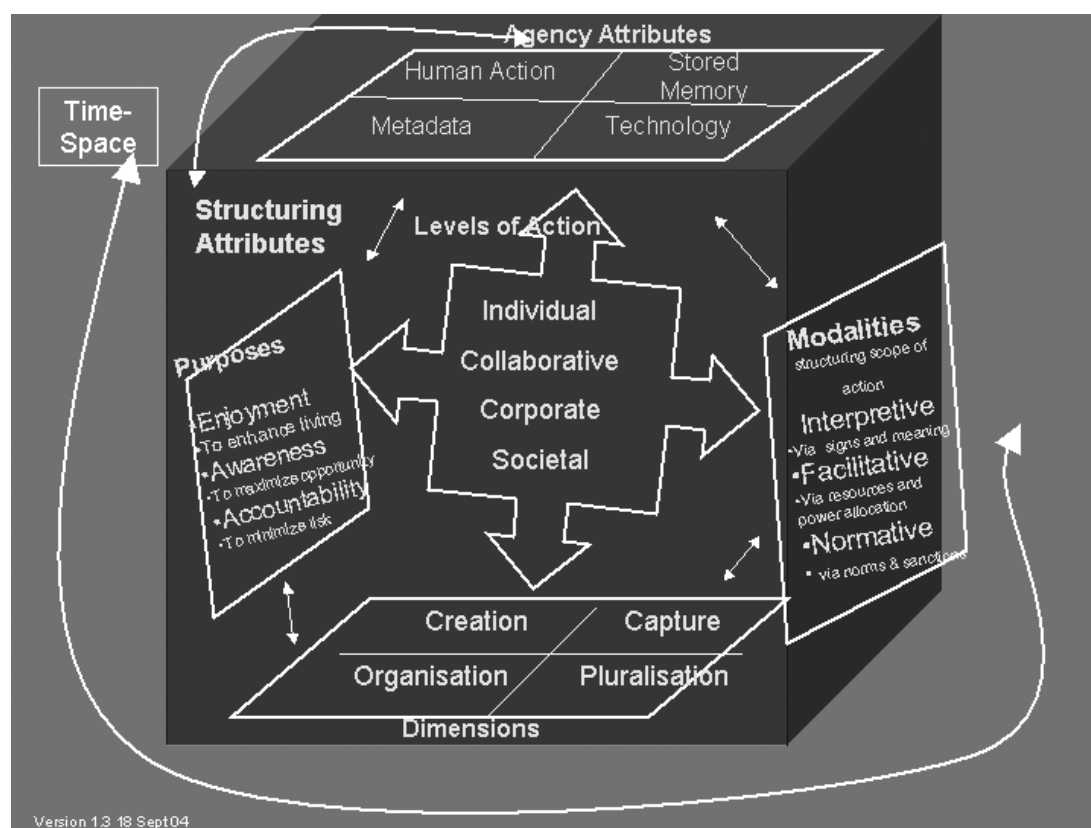


Fig. 3 Typologies of the ICM

The case of VICNET – the network for Victorian communities

This section outlines the story of VICNET, and analyses the case of VICNET against the ICM described above.

Beginnings of virtual communities and community networking

In the early 1990s the writings of Howard Rheingold heralded the age of virtual communities. At a distance of just over ten years since the appearance of his book *The Virtual Community: Homesteading on the Electronic Frontier* it is challenging to reconstruct how different was the technological condition of the information environment at that time. When Rheingold coined the phrase

‘virtual community’, there was no World Wide Web. Of hypertext, the underlying technology of the Web, and now such a widespread and practical day-to-day reality. Rheingold wrote as though of an elusive, mythical talisman:

The ancient grail quest, known as hypertext, was first proposed by Ted Nelson in the 1960s and first implemented by Englebart’s SRI [Stanford Research Institute] project, as a linked series of texts that could summon other texts for viewing. (Rheingold 1993, Chapter 3)

The enabling technologies for virtual communities at that time were listservs, bulletin boards and MUDs (Multi-User Domains), all based on the TCP/IP (Internet) communications protocol. Rheingold offered the following definitions:

The Net is an informal term for the loosely connected computer networks that use CMC [computer-mediated communication] to link people around the world in public discussion ... *Virtual communities* are social aggregations that emerge from the Net when people carry on those discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace. (Rheingold 1993, Introduction).

The founding of VICNET, and its relationship to libraries

Gary Hardy, then working in the Library of the Royal Melbourne Institute of Technology (RMIT), immediately recognised the potential of such ideas, not only for enriching communication among people, but also as a way to bring to the surface the wealth of ‘undiscovered public knowledge’ which existed in communities, for the benefit of the wider society. As University Librarian of RMIT at the time, Don Schauder shared his enthusiasm.

At RMIT Libraries, where VICNET was invented and prototyped (on a desktop Macintosh), it was envisaged that either RMIT Libraries might host it, or that it might be integrated with the State Library of Victoria. The idea of VICNET was seen as potentially transformative for the future of libraries, changing them from ‘one way’ purveyors of the outputs of publishers, to active participants in the creation of community-based information resources. It was envisioned that community networking initiatives such as VICNET would help transform libraries as centres for community knowledge-building in the 21st century (Schauder 1995).

Both the State Librarian and the Victorian Minister for the Arts strongly supported the latter vision. The initial submissions to establish and fund VICNET were made in 1993 to government, at a time when no-one had any clear idea of how the Internet would evolve. The commitment of public funds to the venture was in many ways an act of faith. An alliance with Australia’s Academic and Research Network (AARNET), then Australia’s only Internet Service Provider (ISP), was explored as a means of providing connectivity to

VICNET's participants. However, in the event VICNET itself became one of Australia's earliest ISPs after AARNET, as a means to build first-hand expertise and bargaining power for libraries and community organisations in the emerging data communications marketplace.

VICNET became operational under the auspices of the State Library of Victoria (SLV) in 1994, and was launched at a very public ceremony, in a vast shopping mall atrium with a giant video screen in the central city, by the State Premier, the Hon. Jeff Kennett in May 1995.

ICM interpretation of VICNET

In ICM terms, VICNET was a product of human and technological agency. While prototyped by Gary Hardy and colleagues at RMIT Library at the levels of individual and collaborative action, it quickly became a project at the corporate and societal levels.

In addition, VICNET would add value through the development of training, access, complementary content and support for the community and other public interest groups whose websites it aggregated. It sought to encourage community action, particularly at the individual and collaborative levels, in the dimensions of creation and capture of information. Knowledge and memory held in the minds of community members would be selectively externalised and pluralised (widely shared) as information resources initially on Gopher, and soon after on the Web.

The initiative reflected a particular set of interpretations of the information society, shared in some government and library management circles, which supported a new and more open understanding of library and information relationships in contrast to the traditional conception of libraries.

The agency attributes of the new technologies in supporting communication; and of the memory storage and metadata capabilities of VICNET (e.g. the menuing, indexing and archiving systems of VICNET), would amplify the efforts of community actors across time and place through the dimensions of organisation and pluralisation. The purposes of enjoyment, awareness and accountability would all be served, since all kinds of community groups would be welcome to participate,

In terms of the modalities, it was hoped that basing the network in a major library would signal its ongoing responsiveness to public needs (interpretive modality) while ensuring its institutional sustainability (facilitative modality) and guaranteeing its compliance to legal requirements (normative modality). In other words, the settings for the modality factors sought for VICNET could be characterised within a 'dynamic-democratic' systems-state context for the continuum as a whole.⁶

⁶ The ICM seeks to be equally explanatory for all information orders encountered in society. Represented in a Cartesian co-ordinate system, alternative settings for the modality factors in the model can be read as congruent with information orders ranging from authoritarian to democratic on the vertical axis, and static to dynamic on the horizontal axis.

VICNET's achievements

In the ten years to 2004 VICNET achievements included the following:

- One of Australia's first ISPs.
- Connected every library in Victoria to the Internet.
- Rated in the top ten information sites in Australia.
- Australia's biggest website –20 million hits a year.
- Thousands of community groups e-published for the first time.
- Trained over 100,000 Victorians in Internet use.
- Toured Victoria with its Internet Roadshow beginning in 1997.
- Delivered over 25,000 training hours to community publishers.
- Helped 38,000 people join online communities.
- Australian leader in multilingual internet access.
- Enabled vision impaired to access computers.
- Enabled over 500 public access sites across the state.
- Provided free web hosting and support for almost 5,000 community web sites.
- Recognised nationally and internationally as one of the first, and most influential community networks.⁷

Strengths of VICNET's positioning

However, after ten excellent years, doubts arose about the future sustainability of VICNET. In fact there were stresses almost from the outset in the area originally seen to be one of VICNET's greatest strengths, namely its embeddedness in the State Library of Victoria (SLV). Organizationally, a skilled group of people with a commitment to the community-publishing, community-networking concept came to work within the SLV. The SLV came to be seen as a respected public-good institution embarking on an exciting innovation in ICT and community partnerships. Skilled information professionals, both young and experienced, moved from or declined more lucrative jobs in the business and government sectors to work for modest remuneration on the VICNET team. Volunteers from a wide range of backgrounds added to their ranks in large part because of VICNET's commitment to bridging the digital divide, and making the benefits of knowledge sharing through ICT available to all sectors of society, a spirit very similar to that which inspired the public library movement when print technology was in the ascendant.

At the time when VICNET was established, as a legacy from the previous government, Victoria's Ministry for the Arts – called Arts Victoria– hosted a Libraries Board of Victoria, separate from the State Library Council, and an Office of Library Services whose functions included acting as an executive arm

⁷ The authors thank Gary Hardy, the founder of VICNET, for this summary of VICNET's achievements.

for the Board. This arrangement was set up through legislation which specified the roles and responsibilities of the Libraries Board of Victoria and the Council of the State Library of Victoria (Victoria 1988). The Libraries Board which had key responsibilities for the public libraries of the State, strongly encouraged statewide library network innovation (Schauder 1988). This Board saw VICNET as a key to achievement in this area.

In addition there was strong government support for community-oriented programs through Multimedia Victoria, a government agency established to develop Victoria as a centre of excellence in the development and application of ICTs.

The connections of Arts Victoria Office of Library Services' to the public library network of Victoria assisted VICNET in establishing the Internet public access network. The location of both the Office of Library Services and the State Library within the State Government gave VICNET an opportunity to contribute directly to the development of a number of innovative Multimedia Victoria programs, which proved to be successful examples of community ICT policy and program delivery – for example the Skills.net program (for statewide IT skills development) and the MC² – 'My Connected Community' program (to assist community groups establish themselves online).

In this way VICNET was not solely reliant on State Library Council as a support base, and this diversity of sponsors was a source of strength.

Weaknesses of VICNET's positioning

In 1998, when the Libraries Board of Victoria was re-amalgamated with the State Library Council, grassroots networking among public libraries was a secondary priority of the Library Council, whose prime concern was the governance of the State Library of Victoria. The State Library's invaluable collections were being jeopardised by the long neglect of capital investment in the physical fabric of the Library, one of the finest heritage buildings in the State and the re-development of the State Library was inevitably the most urgent task for the State Library Council at that time. This priority continued under its new name of Library Board of Victoria and as government and private donors participated generously in one of the most large-scale and complex projects of restoration and updating ever undertaken in Australia. However, and especially after the departure of the State Librarian who had adopted VICNET, VICNET was accommodated by SLV but not truly integrated.

VICNET's quandary

Successive governments' changes to library policy bodies

The previous Labor government after an extensive review process (Victoria 1987a, 1987b) had separated the Libraries Board of Victoria with its responsibilities for the wider library network from the Council of the State Library of Victoria. It did so specifically because it perceived a role overload for one body – with an honorary membership – in carrying responsibility both for the State Library itself and the network of public libraries. The SLV is a

large and complex institution, with a central role in the State's documentary heritage. The network of local public libraries was large and complex. Each public library across the State had its own set of special relationships to communities and local governments. Moreover the government of the day believed there should be closer integration with other library networks, such as school, academic and government specialist libraries. The decision was to create two specialised bodies, one to govern the State Library and the other to develop the statewide library network (Victoria 1987a, 1987b).

By 1998 the Liberal government (the same Kennett government which supported the establishment of VICNET and built up Multimedia Victoria) became uncomfortable with the idea of two library policy bodies. As part of a generally progressive new policy, entitled 'Libraries 21', the Premier rationalised the Libraries Board of Victoria back into the governing body of the State Library, which became a statutory organisation rather than a branch of Arts Victoria. VICNET thus lost a vital source of political and financial support. The re-merged body was called the Library Board of Victoria and the relevant legislation was amended accordingly (Victoria 1998).

When the governing party changed again in 1999, and Labor returned to power, it did not restore its own Party's previous arrangements for library policy and governance across the state. It also allowed the gradual running down of the community agenda of Multimedia Victoria. One of its important initiatives was the creation of a new Department for Victorian Communities (DVC), but initially community ICTs were not a priority in its agenda. Several years after the establishment of DVC it still remains to be seen whether and how it will upgrade its engagement with community ICTs.⁸

The role of Multimedia Victoria

Multimedia Victoria, a sub-department of the State government with the special role of promoting ICTs in Victorian business, government and society, has been a major source of funding for programs over VICNET's lifetime. The basic model has been a contractual, project-oriented one. There was however, a sometimes uneasy client- project-manager relationship between the agencies, reflecting what appears to be the tension frequently arising from "outsourced government". Also, the State Library felt that it bore the risks and costs of the projects managed by VICNET while MMV operated at arm's length. The latter appeared increasingly detached but claimed credit when successes occurred.

The 'steering, not rowing' position has been preserved by MMV, but recently this has not encouraged policy or program payoffs for VICNET. Change has not

⁸ However, some positive signs can be discerned in the provision of ICT funding in Victoria's 2005 budget for the network of neighbourhood houses, a grassroots network for local informal education and community support which is now part of DVC's responsibilities.

seemed well managed. Despite significant personal commitment by individual MMV officers, there has been a steady loss of energy and creative policy impetus within MMV, as it has appeared to become more and more isolated from the realities of community need as articulated by VICNET in its early phase. Programs like OpenRoad (<http://www.openroad.vic.gov.au/>) which focussed on non-English language community networking, with significant potential worldwide, have not been well supported, in spite of strong enthusiasm for it from Victorian multicultural communities and direct interest from the International Federation of Library Associations (IFLA).

Relationship between VICNET and the State Library's Board

The VICNET vision became progressively less understood by the governing body of State Library (the Library Board of Victoria). VICNET, despite continuing to attract and manage major information society projects on behalf of the State and Federal Governments, increasingly became seen as burden to the State Library. VICNET's presence was seen to add little value, and create many administrative complexities.⁹

Administrative location within the SLV, especially in recent years, had significant disadvantages for VICNET. The State Library, as one agency within the Arts portfolio, struggled with the community and commercial (e.g. as non-profit ISP) aspects of VICNET's operation. In addition, there was virtually no incentive for the SLV to engage in community or commercial activity, while at the same time members of the Board have tried to avoid doing anything that might expose the parent organisation to any future risk beyond what was seen as its core roles.

VICNET came to be regarded as a *business unit* needing to justify its existence rather than as a key element in the revised role of libraries in the 21st century. VICNET became the subject of frequent reviews and audits within the State Library, processes during which key staff departed, with a consequent disruption in the cycle of project grant application and implementation. As each project grant came to an end without replacement by new grants, staffing levels needed to be reduced bringing industrial disputation that further depressed morale. The 'problem' of VICNET became a self-fulfilling prophecy.

As an understanding of the emerging situation spread among VICNET's many community-based supporters, citizens began to place some pressure on their local Members of Parliament to 'save VICNET'. A protest site called VICNOT was established by some disenchanted VICNET staff as a focus for this disquiet¹⁰.

Discussions began about the possibility of a different organisational context for VICNET.

⁹ These observations reflect the recollections of Don Schauder who was a member of the Library Board of Victoria.

¹⁰ See article at: <http://www.theage.com.au/articles/2004/05/03/1083436531911.html>

The situation in mid-2004 was well characterised by a major policy document concerning the relationship between the SLV and community libraries, entitled *The Framework for Collaborative Action*. The *Framework* document features among others a program entitled ‘Victoria’s Virtual Library’, in whose development VICNET had played a leading role. However VICNET itself—past, present or future—was not featured at all as part of the proposed framework for collaborative action (State Library of Victoria and Victorian Public Library Network 2004).

Further ICM interpretation of VICNET

Reading these developments against the ICM, it can be discerned that VICNET’s crisis is one of incongruence between its actions, and aspects of the structure in which it operates.

VICNET’s reasons for being have been repeatedly vindicated, namely adding value through

- a) encouraging the creation and capture of community-based information for all three purposes of enjoyment, awareness and accountability and
- b) systematic sharing of community-based knowledge through the organisation and pluralisation of that information.

Even a cursory examination of the VICNET site shows the richness of the coverage, contributed through the efforts of individuals, collaborative groups, and corporate bodies. While some of the sites maintained by community organisations are basic electronic billboards, many are dynamic forums of communication constantly engaged in what Giddens calls cultural production and reproduction. Scanning the categories on the VICNET site by category reveals participation by Indigenous Australians; clubs such as Rotary; groups involved in emergency relief; gay and lesbian groups; multicultural groups from Africans to Vietnamese; and groups concerned with religion and philosophy, and issues including women’s rights, domestic violence, HIV, Internet censorship, arts and culture, history, literature, movies, small business, education, gardening, sport, family support, parenting, government, health, disability, aging, kids’ recreation, agriculture, environment, travel, rural communities - the list goes on and on.

VICNET has responded to a changing socio-technical environment, while at the same time contributing to the shaping of that environment, in an action-structure dynamic that has been constructive and effective. VICNET’s engagement with those aspects of structure involving technology, metadata, and memory storage have consistently been at the forefront.

However in those aspects of structure demarcated by the modalities, fault lines have been widening with increasing urgency as time has passed. In terms of the VICNET systems-state, there has been an accelerating bifurcation between ‘dynamic-democratic’ and ‘static-democratic’ modality settings, resulting in conflict among stakeholders. Features of this polarisation are outlined below.

- **Interpretive.** In the earlier years, the meaning of VICNET was clearer to its key stakeholders, and moreover there was a greater consensus as to that meaning. Before the proliferation of ISPs and mass participation in Web, the need for a special agency to build community engagement with the potentialities of the Internet was more self-evident, even though the Internet was less understood by many people. In the exploratory decade in which VICNET has operated, limited term project-based funding made a degree of sense. Everyone was on a steep learning curve. Project funding was welcome and meaningful, even though the path to sustainability was unclear.

However, it appears to be the case that the significance of VICNET needs to be articulated anew. In this new stage the interdependence between local and global has risen in importance: community networking has become a world movement as signified by the UN's World Summit on the Information Society (WSIS) process. Also, action-learning, reflexive practice and research have risen in importance as the complexity of the community networking enterprise has grown.

- **Facilitative.** With experience, the need is recognised for reliable and in-depth support of communities for both innovative and routine use of ICTs. Project funding, even if available, only partly meets this need. Support needs to be grounded in a consistently funded institutional framework, whose objectives are affirmed by, and aligned to, government policy. So far in Victoria, experience has shown that libraries have been able to provide only part of this institutional framework, and they generally appear uncomfortable with taking a leading role in the wider endeavours of community practice. The required institutional framework needs to embody as core those aspects of community networking that have proved troublesome for libraries but where successive cohorts of VICNET staff have done well, namely consistent, close and creative engagement with community building in all its aspects. Only in this way could VICNET's special role in the informational aspects of communities be realised in depth. In summary, new institutional arrangements are needed, encompassing both the authoritative and allocative resources appropriate to the sustained development of community networking. Can such an institutional framework still evolve from libraries or must it be created anew?

- **Normative.** In the ten years of VICNET's operation, contingent regulatory and legal issues have become ever more complex. Obvious examples are privacy, intellectual property, and security. VICNET has coped well with issues arising in these areas, but in future the interface between community networking and regulatory arrangements will need ever increasing expertise and capacity. This too needs to be a feature of future institutional arrangements. Setting aside the perhaps inevitable clash of norms between the values of the young network (VICNET) and the older host (SLV) is necessary in order to realize the requirement for independent maturation in the newer organisation. VICNET has coped well with issues arising in these areas, but in future the interface between community networking and regulatory arrangements will need ever-increasing expertise and capacity. This too needs to be a feature of future institutional arrangements.

VICNET's sustainability – the policy and E-democracy perspective

It should be noted that such formative governance problems are familiar internationally. All situations are different in their details. However the overarching issue is the extent to which governments are seeking to create more effective structures to continue what they regard as a valuable asset – community building through ICTs. The alternative is to hand over the problem to market solutions, which quite evidently cannot meet the fundamental needs in community networking any more than they can in for example the areas of library services, or in the provision of public parks, life-saving, or rural fire-fighting.

The conclusion offered, based on the exposition and analysis in this paper, is that VICNET needs to be renewed within a new institutional framework with a new set of partnerships that support a 'dynamic-democratic' use of technology.

To help bring this about the Monash University Centre for Community Networking Research (CCNR) made representations to government. A public version of CCNR's submission to the Electronic Democracy Inquiry of the Parliament of the State of Victoria may be accessed electronically¹¹. In addition to the written submission, the Inquiry summoned a representative of CCNR to a formal hearing. The Hansard transcript of this hearing can also be accessed electronically¹². The Committee of Inquiry completed its work and published its report in May 2005 both electronically¹³ and in print (Victoria 2005).

The written submissions to the Inquiry, the Hansard transcripts and final report provide a wealth of insight into the attitudes and perceptions of various stakeholder groups on the situation and future of VICNET.

The Committee endorsed CCNR's proposal for a definition of e-democracy which underpinned its submission in regard to VICNET (and is consistent with the conceptual framework of the ICM). This definition was:

The use of [Information Communication Technologies] by individuals and groups to extend their choices for thinking and acting as citizens, unrestricted by time and place, culminating in greater collective freedoms under law.

(Victoria 2005, p.11)

The Committee further enumerated reasons for its support of this definition, which are relevant to the case of VICNET:

¹¹ At <http://www.victoriandedemocracy.info/FormPub/frm70793.pdf>,

¹² At <http://www.victoriandedemocracy.info/FormPub/frm3452.doc>

¹³ At www.parliament.vic.gov.au/sarc

- An emphasis on new communications and computing technologies, rather than simply computer networks such as the Internet [relevant to VICNET's focus on IT literacy development, not just website skills]
- A recognition that new communications technologies can empower greater freedoms of action and association, enhancing the democratic life of members of the community [relevant to VICNET's core mission]
- A broad interpretation of political activity through the explicit use of the term 'citizens' [relevant to VICNET's pursuit of the widest possible inclusiveness]
- The retention of the emphasis on ordered and structured political activity through the rule of law [already discussed in terms of the relevance to VICNET of the Giddens/ICM 'normative' modality].

(Victoria 2005, p.11)

A key statement made by the Committee in its report was consistent with VICNET's mission:

In addition to the provision of government information online, the Committee recognises the importance of an active civil society in the creation of content that enriches local communities and supports democratic expression.

(Victoria 2005, p.57)

The complexities of the politics and bureaucracy surrounding VICNET may be adduced from the fact that the Committee failed to obtain key documentation on action already being taken by government on the VICNET issue. In evidence to the Committee the Deputy Chief Information Officer of Victoria stated that a review of VICNET had been completed and that the review 'effectively confirmed the value added by VICNET and the need to re-legitimise its role and its basis' (Victoria 2005, p.69). The Committee sought a copy of the review from the Department of Premier and Cabinet, but states in its report:

The Committee is disappointed that, following repeated requests, the information was not made available for the consideration of the Committee. This has frustrated the Committee's capacity to respond to the concerns raised by the CCNR.

(Victoria 2005, p.69)

In the absence of this report, the Committee based its analysis and conclusions on the evidence in hand. It rejected the option raised by CCNR and an influential NGO, the National Forum, that a new form of institution might be created to accommodate community knowledge creation and sharing in the ICT age. It preferred a scenario that saw existing cultural institutions, definitely including libraries, respond more effectively to the challenge. It agreed with CCNR's concerns about the sustainability of VICNET, stating:

The situation is clearly unsustainable, and the Government will need to act, in concert with stakeholder groups, to resolve the medium-term future of VICNET. In the view of the Committee the SLV will need to provide a new vision and mission for the organisation beyond its current

role if it is to continue. The Committee notes that Recommendation 39 [‘The Minister for the Arts should develop an initiative to network existing community content developers ...’] may result in an avenue for revitalisation. In addition, given the recommendations in Part III regarding the role of the DVC [Department for Victorian Communities], VICNET may have a new role in the participatory processes recommended in that section.

The Committee does not consider, however, that VICNET’s current position and trajectory is sustainable.

(Victoria 2005, p. 70)

VICNET’s sustainability – the theory perspective

Application of the ICM and its underlying theory to the case of VICNET has provided considerable diagnostic insight. The typologies which constitute the ICM appear to provide explanatory coverage of all major aspects of the VICNET situation, especially in relation to sustainability and transformation.

An audit of the VICNET case reveals a major disjunction in the realm of the modalities, especially the interpretive and facilitative modalities. Because VICNET developed so fast, and with such success, there has been a failure of stakeholder perspectives to achieve sufficient alignment among themselves, and therefore a sustaining congruence with other factors in the ICM.

While community groups can act, and have acted, among themselves to achieve an interpretive consensus on the meaning of VICNET in their contexts, only government action can make the vital connection between the interpretive and the facilitative modalities. Sustained public funding, a clear policy charter, and a workable, consultative institutional framework, are now urgently needed for the sustainable development of VICNET. It is possible that if these commitments and clarifications can occur, the library sector generally, and the State Library of Victoria in particular, may achieve better articulation with the community practice values essential to VICNET.

It is tempting to observe the changes in VICNET and its positioning as a process of gradual organisational maturation – but that is only a partial explanation of its development. The typologies which constitute the ICM appear to provide deeper explanatory coverage of all major aspects of VICNET’s survival and transformation.

The ICM as an approach and a tool needs to be applied to further cases to test its robustness, and related to other conceptual frameworks being developed in the Community Informatics research community.

Nevertheless there seem to be grounds for optimism that action-structure analysis as exemplified in the ICM has a valuable part to play in the gaining of

understanding by policy makers, practitioners and researchers, in a field as complex and diverse as community networking.

Conclusion

This account of VICNET through the lens of the ICM has attempted both to highlight a case in Community Informatics that is educative in itself, and to illustrate the capacity of an action-structure approach to help identify and explain key factors and relationships involved. Like many others who are engaged in Community Informatics, the authors see themselves not only as scholars but as activists with a deep commitment to community networking as an essential condition for human well-being and democracy in society - in this instance the society in which they live. Where passion, politics and scholarship intersect, it is particularly helpful to have a theoretical framework which serves as a guide and checklist in framing inquiry and presenting argument. It is hoped that the paper has demonstrated, at least in a *prime facie* way, that the ICM can be of assistance in achieving an appropriate reflexive balance between analytical scholarship in Community Informatics and active citizenship.

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