



## **SME networks: clustering for regional innovation purposes**

*A paper for the Small Enterprise Association of Australia and New Zealand 16<sup>th</sup> Annual Conference, Ballarat, 28 Sept-1 Oct, 2003.*

Patrice Braun, PhD  
Centre for Regional Innovation & Competitiveness  
University of Ballarat  
POBox 663  
Ballarat, Vic 3353  
(03) 5327-9465  
p.braun@ballarat.edu.au

### **Abstract:**

With the advent of multimedia, computer networks, the Internet and technological portability, novel ways of doing business have surfaced. New electronic business and commerce (e-commerce) platforms have, and are continuing to, emerge that not only increase market flexibility by reducing geographical isolation, time to market and customer response time, but also provide process efficiencies and mechanisms for electronic marketing retailing, trading and transaction. While many SME are still struggling with information and communication technology (ICT) adoption and strategic e-commerce directions, individual SME connectivity and e-commerce adoption is being upstaged by regional networking trends. Networking, (virtual) clustering, SME community building and learning are all portrayed as pivotal linkages for regional innovation, whereby policy makers concerned with the performance of regional economies are seeking to foster a networked or cluster culture among SME. This paper reports on an innovation study undertaken with a regional tourism network and discusses ICT and network challenges that impact on regional network building, clustering and innovation.



---

## **SME networks: clustering for regional innovation purposes**

### **Introduction**

In examining the ways in which and extent to which Internet technologies have affected aspects of regional networks, global, national and regional matters all need to be taken into consideration. This paper therefore opens with brief discourses on the new economy, globalisation, regional innovation and related clustering, community building, social networking and learning trends. Having set the context pertaining to regional network matters, the paper then discusses the issues and challenges that that impact on regional network building and innovation vis-à-vis a study undertaken with a regional tourism network seeking to adopt ICT and e-commerce.

### **The New Economy**

With the rise of globalisation, technological innovation and the diffusion of information via the Internet, countries, regions, institutions, companies and communities everywhere are all scrambling to reinvent their existence in the 'Internet economy', alternatively referred to in the literature as the 'digital economy', the 'learning economy', the 'knowledge economy', and the 'new economy' [Beer, 2000 #366; Hudson, 1999 #215; Lundvall, 1994 #216; Rayport, 2001 #76; Tapscott, 1996 #194]. Proponents of the new economy view today's economy as being enabled and driven by globalisation and computerisation, which in turn enable world markets and the formation of new enterprise models [Stiroh, 1999 #202]. Although not everyone agrees that we have a new economy (e.g., Porter 2001), the notion that the information age had led to network economies and increased returns has received considerable attention. As Tapscott (1996) explained in his work on the digital economy, "the new economy is a networked economy, integrating molecules into clusters that network with others for the creation of wealth" [Tapscott, 1996 #194, 54].

With economic agents operating in global networks of interaction, we can indeed now speak of a global economy [Castells, 2000 #188], but what may be different in the new economy is the "extreme rate of change in certain areas related to the production and use of ICT and the breadth of the impact across regions as well as social groups" [Lundvall, 2001 #217, 3]. In fact, much of the 'new growth' literature focuses on non-traditional forms of capital growth such as information, knowledge and research as the true forces of the new economy paradigm [Bartlett, 2000 #203; Cooke, 1998 #46; Evans, 2000 #204]. It remains to be seen, however, how any of these factors are changing the global economy and whether there is indeed measurable evidence of faster productivity growth [Stiroh, 1999 #202]. Critique notwithstanding, many economy observers continue to look to globalisation, innovation, ICT technologies and biotechnology for the next phase of new economy expansion [Gillespie, 2002 #192].

### **Globalisation**

Globalisation is relevant to regional networks in that the diffusion of ICT and the Internet directly impacts interactions between local and global forces. Giddens (1990) conceived globalisation as the stretching process between local involvement and interaction across distance whereby the "local transformation is as much part of globalisation as the lateral extension of social connections across time and space" [Giddens, 1990 #189, 64]. Applying his so-called 'glocalisation' framework, Robertson (1995) places spatial issues on an equal



footing with temporal ones by examining local and global forces in a concrete locality [Robertson, 1995 #191]. In Castells' notion of a 'regionalized, global economy' government intervention, regional (government) structures and networks play a significant role in the positioning of a region in the global economy [Castells, 2000 #188, 102].

### **Innovation**

Innovation has also been defined in many ways with innovation research being undertaken by a wide range of academic disciplines [Marceau, 1998 #186]. Mainstream Australian innovation researchers by and large support the view that new economy business innovation and related economic power revolves around information, learning, knowledge, productivity efficiencies, and competitive advantage [Dodgson, 2000 #541; Marceau, 1998 #186]. The definition of innovation adopted for the regional network study discussed in this paper pertains to economic business innovation and change; and supports the Freeman and Soete (1997) view that innovation concerns a wide range of issues including organisational processes, activities, knowledge and capabilities [Freeman, 1997 #562].

The emerging pattern of the innovation process is one of a complex network of interaction, according to Freeman (1991), as it includes not just cost benefits, but strategic behaviour, appropriation of knowledge, technological complementarity and sociological compatibility [Freeman, 1991 #548]. Others concur that networking and collaboration for innovation purposes is complex, as emphasis is placed on collaboration rather than competition between innovation firms innovation [Marceau, 1998 #186]. Intuitively we tend to view innovation as something that only takes place in large companies and in high technology industries As a result, "market-oriented innovation activities in low-tech manufacturing and in service sectors are underestimated" [Nyholm, 2001 #220, 256]. A series of innovative business and communication trends are emerging in service sectors, especially in sectors that are information and knowledge intensive, such as the tourism industry. In the new economy, service sector innovation includes organisational, product, service, branding and marketing changes. Increased specialisation, cooperation, networking, competition and changing relationships with suppliers, customers and learning institutions can also be considered innovation components of the new economy (ibid.). In geographic terms, systems of innovation can operate on an international, national, regional and local level. The adoption and diffusion of ICT and the Internet are integral components in these innovation changes.

Connectivity has boosted conventional reasons for interfirm networking and clustering, e.g., creating critical mass, as it facilitates the knowledge-based infrastructure network imperative for today's competitive advantage [Porter, 1998 #206]. The technology-enabled landscape provides the capacity for firms to collaborate with former competitors and potentially achieve "competitive co-evolution, enhanced by digital platform features" [Ordanini, 2001 #536, 282].

### **Clustering**

The literature is saturated with views on geographic proximity, or clustering of industries and companies, to create innovation and competitive advantage, e.g., [Asheim, 2001 #213; Brusco, 1990 #219; Krugman, 1995 #214; Porter, 1990 #205]. In the context of emerging technologies and related knowledge-economy business models, linking stakeholders in dynamic clusters is believed to enhance competition and regional innovation [OECD, 1999 #247].



---

In Australia the Federal Government has also shown renewed interest in, and support for, industry clustering, although the philosophical debate whether clustering should be government- or industry-led varies from State to State. The State of Victoria has opted for an industry-based cluster policy that focuses on attracting major national and foreign companies into the State [Enright, 2001 #474]. Victoria's policy concentrates especially on emerging technologies and market opportunities for the growth of the ICT industry [Multimedia Victoria, 2002 #163].

Even with the renewed interest in clustering, research on clusters in Australia has remained limited. Enright and Roberts (2001), contrasting globalisation and localisation, conclude that in the new economy clusters are regionally driven with local communities seeking to maintain the social, environmental and economic agendas in a global economic climate [Enright, 2001 #474]. Having identified some seventy regional cluster initiatives, Brown (2000) believes that Australian clusters have insufficient focus and lack critical mass [Brown, 2000 #475]. A cluster development and cross-industry collaboration study in New South Wales revealed much initial scepticism and lack of trust among industries and firms [Martinez-Fernandez, 1999 #209]. The limited cluster literature concurs that Australia's small firms do not a natural propensity towards collaboration. A similarly limited amount of small business network studies undertaken in Australia have predominantly addressed scope and scale-related marketing and sales issues, which generally fostered service-related peripheral involvement of businesses without affecting their core competencies and without achieving network integration [Buttery, 1999 #338; Dean, 1997 #313; Nesheim, 1996 #340]. There are, nonetheless, some recent reports on successful collaboration in the agricultural sector [Insights, June 2002]. In the Birchip Cropping Group, a farmer driven agricultural research cluster, value is created through social cohesion, the exchange of information, farmer learning and, perhaps above all, a shared vision, drive and passion [Lowe, 2002 #543].

Other positive cluster accounts come from the tourism industry. Natural resources have long provided small tourism firms with a clustering incentive around geographic icons such as a natural health spa or a national park. Natural assets in Far North Queensland, home of The Great Barrier Reef, have driven the Queensland tourism industry to concentrate on certain locations, demonstrating that the tourism industry has the potential to achieve positive economic outcomes through clustering [Roberts, 2000 #476]. On the virtual tourism cluster front, a collaborative e-commerce gateway was successfully adopted as an additional destination sales channel and supply chain booking service in Daylesford, Victoria [Multimedia Victoria, 2002 #477]. However, strongly interdependent network structures tend to exist only within a single destination or region based on complementary product, e.g., activities, accommodation, transport and food, whereby clients are referred from one organisation to another to provide a comprehensive tourist experience [Hollick, 2003 #48; Ryhänen, 2003 #585]. The structure of the destination network and the manner in which the linkages between tourism SMEs are formed and maintained can therefore be critical. In a decentralised industry climate with low entry barriers, many tourism SMEs continue to operate in isolation. Tourism SMEs that exclude themselves from these linkages may end up disadvantaged as such inter-firm connections often results in market visibility and strategic leverage [Pavlovich, 2003 #547].



## The Study

Tourism network formation in the form of cooperative tourism marketing has been in place in Victoria where the study took place since a Regional Cooperative Marketing Program (RCMP) was set up by Tourism Victoria in 1993 as part of its strategic direction to develop integrated marketing campaigns for all its Product Regions and attain competitive advantage through regional cooperation [Tourism Victoria, 1993 #24]. Each Product Region in Victoria has a Campaign Committee, made up of representatives from local industry and local government. The Committee is responsible for the marketing of the Product Region and maintaining communications with tourism industry stakeholders in their region. Membership on the Committee is voluntary.

The research evolved out of a portal development consultancy that was undertaken with the Grampians Campaign Committee, which is responsible for marketing the Grampians product region of Western Victoria, see [Braun, 2003 #586; Braun, 2002 #532; Braun, 2001 #334]. In exploring the nexus between new technology adoption and regional network structure, an action research methodology was adopted to engage network actors in building a stakeholder-owned portal solution. The research documented the change *process* that leads to an innovation (in this case the adoption of ICT and virtual clustering for e-marketing and e-commerce purposes) being adopted or rejected.

The intervention actions proposed to actors were:

- to make time to meet with the consultant in their respective shires for a reconnaissance conversation;
- to collect regional stakeholder e-commerce inquiries in their respective shires for an period of approximately three months prior to the design phase of the portal;
- to participate in a one-day forum to collectively formulate an initial e-commerce model for the product region;
- to take part in follow-up communication to finalise the portal model.

## Study Results

As described by Rogers (1995), in 'normal' diffusion networks institutional actors would have served as change agents in the innovation process. However, in this particular network, institutional actors did not use the existing communication channels to transfer knowledge or act as change agents, resulting in vastly under-utilised interpersonal communication channels across the domain, which negatively impacted on the ICT adoption and virtual clustering process. With knowledge transfer channels towards domain connectivity being vastly under-utilised, or in some cases obstructed, a chaotic ICT adoption pattern occurred across the domain. The latter is noteworthy in that the diffusion of innovations literature does not generally untangle the effects of the embedded network structure on the diffusion process and hence few, if any, diffusion studies will have previously found a diffusion process to be chaotic.

Adoption and diffusion of ICT and e-commerce was discernibly obstructed by domain actors' parochial worldview; outsourced responsibility for the product region's strategic and operational ICT vision; no accountability for the domain's ICT developments; and lack of commitment to change. Volunteer membership on the Committee was frequently mentioned



as a key barrier to network innovation; as were prioritisation of individual shire interests, and the domain's power structure. The intended action research collaboration with domain actors towards the formulation of a stakeholder-centric portal was severely hindered by lack of time of, lack of access to, and lack of communication between domain actors, ultimately resulting in an 'empty' online domain. Actors' apathy to utilise ICT for information flows; sub-regional industry divergence; the atomistic nature of individual tourism operators; lack of commitment to change; and overall lack of collaborative and strategic global/local thinking across horizontal and vertical network tiers all contributed to chaotic ICT adoption and diffusion patterns across this regional tourism network.

In considering the ad hoc approach to ICT adoption and diffusion within the network, the study suggests a strong relationship between diffusion and network positioning both in terms of place, e.g., actor status and position in the network, and space, e.g., the geographic make-up of the network. The Grampians history and the vast boundaries of the current Grampians product proved to be factors that influenced tourism network cohesion, actors' trust in, and engagement with, the network. The latter in turn influenced the scope of ICT innovation and diffusion of ICT within the product region and its approach to global positioning. Portal and website initiatives undertaken either within or impacting on the network, e.g., initiatives on both the state and regional level, were top-down and technology-driven, leaving network actors to cope with ICT confusion, cost issues, and no sense of belonging.

## Discussion

In courting industry actors to participate in new communication channels such as the web, decision makers within this tourism network appeared more interested in growing market share than in clustering or increasing its communication with industry. Embedded points of power in the domain appeared to obstruct communication flows. Despite the espoused rhetoric that the multi-tiered hub would become the primary network structure for regional communication and e-business capability, after its launch the portal was not used for either horizontal communication between network actors or vertical dissemination of information along network tiers.

Possibly compounded by digital illiteracy, lack of resources, a volunteer-based marketing Committee, and a lack of understanding of the potential strength of interactive communication across domain strata and clustering benefits, the preservation of poor communication channels politicised the ICT diffusion process. Rogers (1995) discusses the weakness of high-proximity homogeneous ties vis-à-vis information flows, citing Granovetter's theory of the strength of (heterogeneous low-proximity) weak ties as being "of central importance in the diffusion process" (Rogers, 1995, 310). In the Grampians network both horizontal (internal) and vertical (external) weak ties appeared to negatively influence the ICT diffusion and virtual clustering process.

As discussed earlier, regional network building and collaboration are considered the cornerstones of the new economy, with social and institutional conditions functioning as prime driving forces behind regional economic growth. Tourism researchers (see for example [Hollick, 2003 #488]; Pavlovich, 2003 #547; Ryhänen, 2003 #585; and Tremblay, 2002 #50]) have all demonstrated the importance of tourism networks for seamless visitor experiences and destination endurance. In observing the myriad disconnected networks within this particular regional tourism network, it became apparent that the cultural norm in the product region was one of divergence and competition. Actors had built little social or bridging capital



between them and seemed merely united for the purposes of marketing a top-down imposed product region with impractical boundaries.

In an environment of disconnected networks with no commitment to regional innovation and social learning, there was no perceived need for clustering or change. Contributing to weak network ties and the maintenance of a heterogeneous network culture were elements such as (poor access to) infrastructure; place (status and position of power) in the network; spatial make-up of the network (shire proximity to and affinity with the central icon); and individual actors' strong identity with their own community. A systemically embedded culture of competition and autonomy identified in the industry further prevented virtual clustering from taking place. Despite calls for the mapping and coordination of complementary assets at the destination end of the service chain [Tremblay, 2002 #50], regional marketing bodies and policy initiatives [Tourism Victoria, 2002 #10] have yet to successfully catch up with the individualistic tourism culture. Especially micro operators remain unaware of local and/or regional complementarities [Brandenburger, 1996 #484] and tend to ignore the potential power of supply-side overlaps and flow-ons embedded in their local or regional values chains.

As this study has shown, not all regions have the capacity or interest to cluster. As Brown (2000) suggests, systemic change in embedded cultural patterns vis-à-vis competition is indeed necessary to give Australian clusters the focus and critical mass they have been lacking. To foster an inclusive cluster culture for regionally dispersed tourism SMEs, such as the tourism operators in the Grampians, an appropriate balance needs to be struck between autonomy and competition. Standard practices such as single icon branding for a product region with multiple attributes and highly competitive buy-in schemes will need careful reconsideration in moving from a competitive-exclusive to a competitive-inclusive cluster model.

Steps	SME Needs	Suggested Actions	Potential Outcomes
1	Reduction of isolation	Support to reduce ICT fear & resource issues	Willingness to take virtual cluster plunge
2	Communication and tailored education	ICT & e-commerce skills	ICT competence and awareness of networked opportunities
3	Adoption of networked technologies	External funding	Regional connectivity & adoption of networked solutions
4	Networking via industry & regional associations	Social capital contexts	Information and knowledge flow
5	Trust	Fostering of cooperative culture in collaborative learning contexts	Increased network relationships & competitive advantage

Figure 1 – Network building steps

Similarly, complementarity and value are not always naturally established but rather need to effectively be created by matching infrastructure with local attributes and established visitor profiles. To take advantage of complementarity within and possibly beyond the local supply chain through virtual clustering -- for example by offering cross-regional wine and food or



transport and accommodation packages -- an in-depth analysis of local and regionally embedded network structures and value chains is imperative. Once structures and value chains are apparent, market differentiation may be created through content, transaction and e-governance aggregation. Figure 1 suggests some network building steps towards advancing SME clustering in regional networks.