# ACTION RESEARCH METHODS:

# CASE STUDY

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## ABSTRACT

Implementing new business models to achieve competitive advantage in the techno-economic innovation paradigm bring to the fore ICT adoption, strategic planning and network issues. Building on the concept that global positioning and competitive advantage for small and medium size enterprises (SMEs) may be achieved through connectivity and clustering, this article discusses research into the adoption of networked technologies by SMEs. In considering small business perceptions of affordability and growth opportunities for their business, this article explores the conditions for small business network formation underpinned by technology and discusses the results of an action research study with a regional Australian SMEs tourism network seeking to establish a virtual e-marketing and e-commerce portal environment.

## INTRODUCTION

To date, most research into the implications of the Internet for small and medium size enterprises (SMEs) has focused on individual business barriers to information and communication technologies (ICT) and e-commerce adoption. Such research has shown that SMEs tend to be time and resource-poor, with their size being their main disadvantage vis-à-vis ICT adoption (OECD, 2000; Van Beveren & Thompson,

2002). Perhaps the question is not whether small firms have adopted ICT but rather where are small firms up to in terms of their ICT adoption. ICT encompasses a series of separate yet interrelated components; for example, electronic mail (email), the Internet, the web, and e-commerce, which can be adopted in a variety of social and business settings. Hence, it is suggested that ICT cannot be considered as a single technological innovation, but rather as a series of (process) innovations, potentially resulting in variable ICT adoption patterns (Walczuch, Van Braven, & Lundgren, 2000).

Keeping up with rapidly changing ICT trends and moving ahead with the adoption of the various ICT components is a challenge for all firms, but may be particularly confronting for resource- and time-poor SMEs (Earl, 2000). To counter this phenomenon a SME aggregation or cluster argument may be made for the use of ICT to develop joint e-marketing and e-commerce economies of scale (Braun, 2002). 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, 2000). Indeed, the literature is saturated with views on geographic proximity, or clustering of industries and companies, to create innovation and competitive advantage (Asheim, 2001; Porter, 1990).

The geographic scope of a cluster can vary from a single city, state or region to a network of companies across state borders or even country borders. They can be formal or informal, in the public or private sector; horizontal or vertical; physical as well as virtual (in an online environment). In a horizontal network, companies within the same industry sector might share an industrial or technological base, operate

within a common market and use a common purchasing and/or distribution channel. Vertical networks include horizontal cluster participants as well as suppliers, users and related services. Porter discusses competitive advantage as being "created and sustained through a highly localized process" (Porter, 1990, 19) and ascribes enduring competitive advantage in a global economy to local knowledge, relationships and motivation that cannot be duplicated by global partnering (Porter, 1998).

Connectivity has boosted conventional reasons for interfirm networking and virtual clustering—for example, by creating critical mass online—as it facilitates the knowledge-based infrastructure network imperative for today's competitive advantage. While a number of recent studies have shown benefits in physical SME clustering (Enright & Roberts, 2001; Lowe & Berrisford, 2002), notable research on ICT adoption in a virtual clustering context and studies on network use of the Internet as a cooperative e-commerce tool remain in their infancy.

Building on the concept that global positioning and competitive advantage for SMEs may be achieved through connectivity and clustering, this article first explores the conditions for small business network formation underpinned by technology, followed by the results of an action research study with a regional Australian SME tourism network seeking to establish a virtual e-marketing and e-commerce portal environment.

**SMALL BUSINESS NETWORKS**

Implementing new business models to achieve competitive advantage in the techno-economic innovation paradigm bring to the fore ICT adoption, strategic planning and network issues.

Research into the adoption of networked technologies by SMEs indicates that the adoption of network structures and networked technologies by SMEs is generally related to the size and nature of SMEs and largely depends on their perception of affordability and business growth opportunities for their business (OECD, 2000). SMEs generally approach clustering and networked infrastructures such as the Internet with caution and still hesitate to invest their time and money in a rapidly changing economy. Nor do SMEs necessary view the Internet as a vehicle to transform their individual business capability from a parochial to a networked or global level, which may be achieved through the set up of electronic-commerce (e-commerce) portals or other web-enabled cluster structures (Murray & Trefts, 2000). The latter study cites lack of technology skills, lack of a strategic sense of how to move forward and fear of competitor use of the Internet as significant barriers for uptake of networked technologies by SMEs. Therefore, creating network infrastructures and collaboration between small firms is not only contingent on adoption of ICT technology, but also on economic and social contexts.

European studies on SME positioning in the networked economy point to SMEs

networking as being contingent on favourable economic conditions, for example by

providing government-sponsored external networks (Cooke & Wills, 1999).

An Asian study similarly provides empirical evidence that successful SME

collaboration needs to be underpinned by resources that provide SMEs with the tools

to become global players  (Konstadakopulos, 2000). The European studies on SME

positioning in the networked economy also associate social relationships with

enhanced business, knowledge and innovation performance (Cooke & Wills, 1999).

While connectivity through public or private initiatives may facilitate the electronic

linking of SMEs to one another for potential business-to-business (B2B) resource and

transaction sharing, and help to reduce isolation of individual SMEs, there is another

critical factor to consider in terms of network building between SMEs and that factor

is trust.


Trust is an attribute not only of organisations but also of communities, industry

networks or even entire geographic regions, which can help expedite economic

development and facilitate large-scale economic activities (Fukuyama, 1995). Trust

between network partners is said to reduce fear of opportunistic behaviour and improve

collective learning and knowledge sharing.  The trust may be historical and already

exist between different firms, as illustrated above, or it can be built during the

relational exchange (Gulati, 1995). Some scholars argue that relationships do not

necessarily have to be based on trust as long as systemic mechanisms are in place

which allow stakeholders to have confidence that network partners will exhibit

cooperative rather than opportunistic behaviour and not take competitive advantage of

knowledge-based exchanges (Das & Teng, 1997). In the aforementioned Asian

example, SME collaboration was in fact taking place based on prior existence of trust and in an atmosphere of continued trust building between stakeholders (Konstadakopulos 2000).

In summary, SMEs (virtual) clustering seems contingent on favourable network conditions such as connectivity (infrastructure), network relationships and trust. ICT and related capabilities such as virtual business network environments can potentially have a significant impact on how inter-organisational relationships are developed. Conversely, the structure and culture of an existing network of firms can have considerable influence on the way in which the telecommunications network is developed, implemented and used.

**CASE STUDY**

An action research study with a regional Australian SME tourism network seeking to adopt ICT and e-commerce provides some practical insights into network-based ICT and e-commerce adoption. Action research (AR) is a methodology and intervention process that is collaborative in nature, as it aims to work *with* stakeholders rather then *on* them (Reason & Bradbury, 2001). All action-oriented interventions value some form of participation, although there are varying degrees of collaboration depending on the method of invention. The participatory and action-oriented nature of action research is particularly suited to technological innovation such as the adoption of ICT and portal technology as it is flexible enough to meet the emerging issues of technology-related change.

In the pursuit of introducing ICT-related change in the tourism network, AR was found to be particularly suited to ICT-related organizational change as it enables inquiry into and integration of the technical, economic, organizational, human and cultural aspects of the intervention. AR type consultations typically include a cyclical and action oriented design that includes a diagnostic phase, a planning phase, a taking action phase and an evaluation phase. Apart from its cyclical approach and practicality, AR is generally appropriate when a project relates to "an unfolding series of actions over time in a given group, community or organisation" (Coughlan & Coghlan, 2002, 227).

The AR intervention ensued from a portal development consultancy with a geographically dispersed regional tourism network in the state of Victoria, Australia. Tourism network formation in the form of cooperative destination marketing has been in place in Victoria since 1993 as part of the state's strategic direction to develop integrated marketing campaigns for its product regions and attain competitive advantage through collaboration (Tourism Victoria, 1993). Each product region has a so-called campaign committee, a voluntary organization made up of representatives from local industry and local government. Campaign committees are responsible for the marketing of the product region and maintaining communications with industry stakeholders in their region.

The AR project was undertaken with one such campaign committee, the Grampians Campaign Committee ("the Committee"), seeking to extend its traditional marketing media range and upgrade its basic information and communication technologies (ICT) network to include an online marketing and transaction presence. The Grampians are

considered one of Australia's renowned tourism attractions, drawing in excess of 1.2 million visitors annually. The region encompasses some 900 tourism SMEs, seven major townships, numerous villages and seven local government shires.

The brief was to design a portal model that would support business-to-consumer (B2C) marketing and e-commerce transaction efficiencies, and serve as an inter-firm business-to-business (B2B) interaction and knowledge creation platform for tourism SMEs in the product region. The AR intent was to ensure an appropriate portal model would be implemented that reflected stakeholder interests and portal needs. Although AR is an emergent process and designing such a process is often considered incongruous with the nature of the intervention (Van Beinum, 1999), an overarching portal development approach was nonetheless adopted to provide starting conditions for the process, whereby the intention was to involve as many portal stakeholders as possible in the portal design process. The AR actions proposed to regional stakeholders were:

- to take part of a data gathering phase and collect stakeholder e-commerce inquiries and portal needs 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.

Interaction occurred between mid 2001 and early 2002 with a group of twenty stakeholders, who were either part of the Committee, representing tourism industry SMEs or had a direct industry interest in the portal. After the completion of the AR intervention, all electronically available data —such as email messages; audio-taped conversations; field and journal notes; ICT and tourism policy documents; speeches

and other pertinent documentation—collected during the course of the intervention were aggregated into a qualitative software program for data analysis.

**STUDY RESULTS**

In conducting and tracking the AR process of developing a product region portal, study results indicate that embracing portal technology is a complex and phase-based process. While email had indeed become the standard communication method for internal Committee business, it had not yet ubiquitously been adopted as the external mode of communication with SME stakeholders across the product region. The AR study indicated that both the hard technology (the telecommunications infrastructure that underpins the uptake of ICT) and the soft technology (the formal and informal skills and knowledge required for the uptake of ICT) remained inadequate. Contextual factors, many in existence prior to ICT adoption, such as stakeholders possessing (access to) ICT knowledge, infrastructure, skills and time, played a significant role in portal adoption patterns across the product region.

Overall, stakeholders lacked both time and strategic vision, which resulted in a low level of participation in the AR process and lack of 'ownership' of the portal. In examining connectivity through conversation and email traffic analysis, it became apparent that institutional stakeholders (e.g., those with work-related access to network infrastructure) were markedly more 'connected' than industry (SME) stakeholders. While many product region stakeholders were aware of the web, the study indicates that most SMEs had not yet progressed to the e-commerce phase, confirming that adopting e-business technologies is indeed an evolutionary process

that requires the negotiation of a journey that involves continuous learning and change. Adoption of the entire cluster of ICT technologies could hence be viewed as a linear process along an adoption continuum (Figure 1). After adopting email, the web is the second step for adoption consideration, e-commerce the third step, potentially followed by adoption of a complete e-business model at which point we might speak of complete ICT adoption or an ICT paradigm shift.
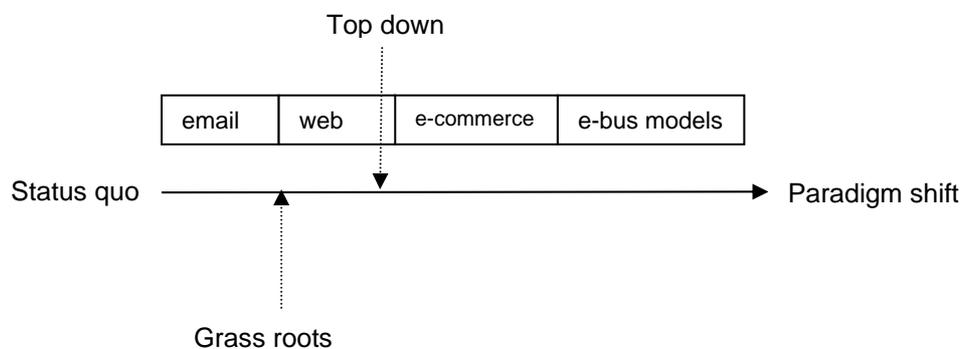
Figure 1
ICT adoption continuum

In further considering the SME approach to portal adoption within the network, the study suggests a strong relationship between portal development and network make-up, both in terms of place, e.g., stakeholder position in the network, and space, e.g., the geographic make-up of the network. The Grampians history and the vast boundaries of the Grampians product proved to be pivotal factors negatively influenced ICT network cohesion, SME interest in, and engagement with, the portal.

The latter in turn influenced the scope of portal adoption within the product region and SME approach to virtual clustering to achieve economies of scale.

On the whole, clustering was regarded as an interesting but far-fetched idea. Despite the Committee's interest in aggregating domain stakeholders, communication strategies or incentives to create industry awareness of clustering were not part of the product region's vision or strategic plan. Grampians SMEs were generally still too new to the virtual world to understand the relevance of clustering for their own small business, let alone as a crucial economic strategy for their product region. Since e-commerce was still beyond most Grampians SMEs level of ICT adoption, the aggregation of SMEs in a virtual cluster or any other potential value added that might have been established along the regional value chain remained unrecognised and hence untapped. The especially designed industry clustering tier in the portal was neither conducive to augment ICT adoption, nor to foster an SME cluster culture.

The Grampians reluctance to cluster may be attributable to various causes. Firstly, the Grampians product region may have been too vast with SME firms being too geographically dispersed to maintain relationships with and build trust between firms. Secondly, ICT alone could not permeate sub-regional barriers or initiate an inclusive virtual cluster culture. As other SME network research has indicated, network conditions need to be conducive to clustering.

**CONCLUSION**

ICT and related capabilities such as virtual business network environments can have a significant impact on competitive advantage in the networked economy. However, as this article has demonstrated, embracing the cluster of ICT technologies, including portal technology, is a complex and phase-based process. Many SMEs are not yet aware of the potential and value of collaborative e-commerce structures. Merely adding ICT and e-commerce capability to a network structure does not necessarily change or increase SME interest in virtual clustering. For SMEs to take mental, physical and virtual possession of a shared ICT domain, they will need to get comfortable with ICT and better understand the value of virtual clustering in terms of competitive advantage and economies of scale.

Becoming a network stakeholder may entail an enormous conceptual leap into the future for many SMEs. Network novices will hence need substantial encouragement and support to make them willing to take the network plunge (Braun, 2002). Creating awareness of networked opportunities, developing skills in using networked technologies and increasing SME understanding of the potential of (virtual) cluster environments may be helpful. When favourable network conditions are present, participation in an SME virtual cluster is likely to produce economically beneficial outcomes.

## REFERENCES

Asheim, B. T. (2001). Learning regions as development coalitions. Partnership as governance in European workforce states? Concepts and Transformation, 6(1), 73-101.

Braun, P. (2002). Networking Tourism SME: E-Commerce and E-marketing Issues in Regional Australia. Information Technology & Tourism, 5(1), 13-24.

Cooke, P., & Wills, D. (1999). Small Firms, Social Capital and Enhancement of Business Performance Through Innovation Programmes. Small Business Economics, 13, 219-234.

Coughlan, P., & Coghlan, D. (2002). Action Research. Action research for operations management. International Journal of Operations and Production Management, 22(2), 220-240.

Das, T. K., & Teng, B. (1997). Sustaining strategic alliances: options and guidelines, Journal of General Management. 22, 4(49-64).

Earl, J. M. (2000). Evolving the E-Business. Business Strategy Review, 11(2), 33-38.

Enright, M., & Roberts, B. H. (2001). Regional Clustering in Australia. Australian Journal of Management, 26(Special Issue), 66-84.

Fukuyama, F. (1995). Trust. New York: Free Press.

Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. Academy of Management Journal, 38, 85-112.

Konstadakopulos, D. (2000). Learning Behaviour and Cooperation of Small High Technology Firms in the Asean Region. ASEAN Economic Bulletin, 17(1), 48-62.

Lowe, J., & Berrisford, N. (2002). Capturing Value in the Grains Value Chain.
Ballarat: Centre for Regional Innovation and Competitiveness. University of
Ballarat.

Murray, R., & Trefts, D. (2000). The IT Imperative in Business Transformation.
Retrieved 25 July, 2000, from http://www.brint.com/online/

OECD. (2000). A global Marketplace for SME, Progress Report by the Industry
Committee Working Party on SME. Retrieved 20 June, 2000, from
http://www.oecd.org/EN

Porter, M. E. (1998). On Competition. Boston, MA: Harvard Business School.
(1990). The Competitive Advantage of Nations. London: Macmillan.

Reason, P., & Bradbury, H. (2001). Introduction: Inquiry & Participation in Search of
a World Worthy of Human Aspiration. In P. Reason & H. Bradbury (Eds.),
Handbook of Action Research (pp. 1-14). London: Sage.

Storper, M. (1997). *The Regional World*. London: Guilford Press.Tourism Victoria.
(1993).

Tourism Victoria Strategic Business Plan.: Tourism Victoria.

Van Beinum, H. (1999). On the Design of the ACRES Program. In D. Greenwood
(Ed.), Action Research. From practice to writing in an international action
research development program (Vol. 8, pp. 3-24). Amsterdam: John
Benjamins.

Van Beveren, J., & Thompson, H. (2002). The Use of Electronic Commerce by SME
in Victoria, Australia. Journal of Small Business Management, 40(3), 250-253.

Walczuch, R., Van Braven, G., & Lundgren, H. (2000). Internet Adoption Barriers for
Small Firms in The Netherlands. European Management Journal, 18(5), 561-
572.

**TERMS AND DEFINITIONS**

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|---|---|
| **AR** | Action research. Action research is an action-oriented methodology or intervention process that is collaborative in nature. It aims to work *with* stakeholders. |
| **Connectivity** | The ability to link to the Internet via a computer |
| **B2C** | Business-to-consumer trading; involves the sale of goods or services by a business directly to individual customers |
| **B2B** | Business-to-business trading; involves the sale of goods or services by a business to another business |
| **Competitive advantage** | A condition which enables companies to operate in a more efficient or higher quality manner than the companies it competes with, and which results in financial benefits. |
| **Cluster** | A group of linked enterprises that share a common purpose of gaining competitive advantage and economies of scale. |

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| **Economies of Scale** | Economies of scale refers to the notion of increased efficiency for the production and/or marketing of goods/products by pooling or sharing resources. |
| **E-Commerce** | Connection, electronic data exchange and transaction capability via the Internet |
| **ICT**: | Information and communication technologies, includes phone, fax, email, the World Wide Web, the Internet |
| **Portal** | A website or service that provides access to a wide range of services |
| **SMEs** | Small and medium size enterprises. Refers to enterprises with a specific number of staff. A small size enterprise generally refers to firms with less than 20 employees. |
| **Value Chain** | A value chain is a string of diverse companies working together to create or satisfy market demand for a particular product or a bundle of products |