

Electronic Markets and Service Delivery: requisite competencies for virtual environments

Linda Wilkins

School of Management Information Systems, Deakin University, Melbourne, Australia

Phone: +61 3 9244 6532; Fax: +61 3 9244 6928

inflows@deakin.edu.au

Paula M.C. Swatman

Faculty of Informatics, University of Koblenz, Germany

Phone: +49 261 287 2850 Fax: +49 261 287 2851

paula.swatman@uni-koblenz.de

Tanya Castleman

School of Management Information Systems, Deakin University, Melbourne, Australia

Phone: +61 3 9244 6532; Fax: +61 3 9244 6928

tanyac@deakin.edu.au

Abstract

Electronic markets have a short but dynamic history. How an electronic market can be successfully developed remains in dispute. There is a clear need to better understand the nature of electronic markets themselves and, in particular, to review important developments in their conceptualisation. To enable a deeper understanding of these issues, we decided to restrict our investigation to electronic markets in the agricultural export sector. Agribusiness is a natural early adopter of digital marketplaces because of the industry's traditional reliance on markets and current take-up of global supply chain management (Wilkins, Swatman and Castleman, 2002). We review two portals from this sector that aimed to simplify access to regulatory documentation. The earlier implementation had its funding withdrawn after one year, whilst the more recently established portal is rapidly becoming a showcase project for the stakeholders. We use a composite theory based on Bijker (1995) and Nowotny et al (2001) to establish a framework for analysing our data. We also refer to a body of literature characterising intangible services and their design and its implications for emarket implementations. Our findings indicate that governance style is in fact closely related to the success or failure of specific sites. We also found support for earlier research indicating that expectations and understanding of electronic markets are still evolving.

Keywords

agribusiness, electronic markets, service delivery, intangibles, governance, supply chain management.

1 Introduction: Electronic Markets

In the din and noise of the rapidly evolving B2B marketplace, there is an enormous amount of confusion about what the different B2B hub business models are, where they add most value, and how profitable and defensible they are likely to be.

(Kaplan and Sawhney, 2000)

Electronic markets have been promoted as a means of increasing business efficiency and reducing transaction costs to a minimum (Bakos, 1991). As their operations are better understood, so too is their potential for supporting value-adding partnerships. Electronic markets have emerged in a number of different industries. They support the exchange of goods and services of different kinds, for different online communities and with different architectural principles. The food industry has always relied on markets not only as a mechanism for exchange of goods but, equally importantly, to transmit information up and down the chain of intermediaries between growers and customers (Fong et al., 1997). Electronic markets are a way of harnessing technology to this traditional activity. In the present-day scenario where business competitors are no longer other local producers but rather, global supply chains, electronic markets represent an important tool for exporters.

This paper addresses the question of the ways in which conceptualisations of electronic markets affect outcomes of specific implementations by

- applying a composite theory to the analysis of two case studies of online innovations in the Australian food and beverage industry
- linking aspects of the literature on new service design to conceptualisations of electronic markets.

This study will help us understand which elements need consideration by stakeholders when establishing an electronic market; and indicate how these elements can affect outcomes.

In the following section of this paper, we provide a simple integrated framework for understanding why electronic markets fail as well as the conditions under which they can form durable communities.

2 Social Definition Theories and Multi-User Systems

Critical social theory is primarily concerned with the idea of social shaping and brings users into the foreground, taking into account their role in shaping technology (Bijker, 1995). Critical social theory is particularly applicable to IS case studies where, over a period of time, user perception and response to technology can have a significant impact on implementation outcomes.

Bijker (1995) uses the concept of relevant social groups to demonstrate how technologies become sites where constituencies or groups negotiate the meaning attributed to a particular artifact. The relative success of a new technology results from the negotiations of these relevant social groups rather than from the design features of the technological artifact itself. These negotiations play a particularly important role in the developmental phase when the artifact is still changing rapidly.

New technological artifacts have interpretive flexibility. Relevant social groups interpret and redefine the artifact as they adapt it to their purposes and apply their understandings of what it is. Each group understands the artifact based on what they already know about related technologies. Groups will modify or refine the artifact's form to solve the problems that they have with it. The interactions within these groups are structured by what Bijker calls a *technological frame* (1995:123-124). Bijker (1995) presents richly detailed case studies showing that artifacts assume stabilised form only when groups of users reach a consensus about that form or when one group's needs or preferences dominate all others. Bijker and Law's technology frame (1992) enables us to relate features of the innovation process to the development and eventual fixed meaning of an artifact.

The key elements which comprise a technology frame are:

- Goals: enlisting more people in a relevant group, enrolling new relevant social groups and the stabilising of an artifact over time.
- Key problems: understanding the fields of influence, persuasion, and coercion of agencies
- Problem-solving strategies: understanding the classes of users, specifying their rights and responsibilities, and including them in the technical and other developments
- Requirements to be met by problem-solving solutions: understanding how and in what ways user involvement may be better articulated to lead to better design, better technology, better societies.
- Tacit knowledge: Particular cultural ethos of each industry sector that is understood but not articulated
- Exemplary artifacts: the meaning of these is initially flexible and open to interpretation but stabilises after elaboration.

The physical artifacts are also part of the frame. Groups will modify or refine the artifact's form to solve the problems they have with it. The technological frame builds up and mirrors the social construction of the exemplary artifact just as it mirrors the formation of relevant social groups. It provides a vocabulary for social interaction and for forming artifacts. The frame relates features of the innovation process to the development and eventual fixed meaning of an artifact.

Our composite theory also draws on diffusion network analysis, which is situated within the same group of social definition theories and supplements the work of social constructivists. Network analysts study how an innovation network evolves, aiming to fill the gap between empirical findings and conceptual understanding. Their approach provides instruments for analysing new modes of knowledge production closely connected to applications contexts.

Nowotny, Scott and Gibbons (2001) have developed a conceptualisation of what they term 'socially robust knowledge', which is produced when research has been 'infiltrated and
Nowotny *et al.* (2001) recognise the role of users as key actors in innovation processes, fully participating in the process of knowledge production. These authors characterise knowledge production as a more distributed way of generating insights, knowledge and innovation. The technological solution "emerges" in the course of the interactions between users and suppliers.

Case study research, which has been described as aiming for holistic understanding of sets of interrelated activities engaged in by actors in a social situation (Yin, 1989), has a strong affinity with this conceptualisation of social robustness, because the researcher can only convey holistic understanding by observing these activities in context. Nowotny *et al.* (2001) establish a typology of social knowledge or contextualisation of knowledge production in the evolution of innovation networks – a typology highly applicable to case study research. Their typology proposes three types of contextualisation to assess the social robustness of an innovation. Contextualisation occurs most frequently in the middle range between weak and strong, due partly to the natural diversity of fields and types of knowledge production which cannot be forced into an 'ideal' type. Middle range contextualisation is also favoured by two preconditions: the emergence of transaction spaces between groups or major configurations which may be transitory and 'the potential emergence of objects which crystallise the transaction process and help to sustain dialogue and negotiation' (Nowotny *et al.*: 144).

The complementary features of Bijker's technology frame and Nowotny, Scott and Gibbons' (2001) innovation network theory are set out in the following table:

Table 1. Complementary Features of the Social Constructivist Framework (1992) and Innovation Network Theory (2001)

Bijker and Law (1992)	Nowotny, Scott and Gibbons (2001)
Integrates narrative/case history within a structured theoretical framework.	Integrates disciplinary perspectives.
Shows how innovation networks evolve.	Evolution, typology and outcomes of socially robust knowledge shown to characterize types of contextualisation.
Introduces concept of relevant social groups/stakeholders.	Develops idea of participation in a virtual dynamic space.
Each group/stakeholder modifies or refines the artifact's form to solve the problems that they have with it.	Reviews dynamic processes at increasing levels of granularity.
Identifies new technological artifacts as having interpretive flexibility.	Defines the artifact produced and distinguishes types of contexts.

(Wilkins, Swatman and Castleman, 2002)

Having identified these features, we can now apply our composite theory to specific contexts using case study methodology as the most appropriate instrument.

3 Case study methodology

Case study methodology was selected for the investigation because it is applicable where 'a phenomenon is broad and complex, the existing body of knowledge is insufficient to permit the posing of causal questions and... the phenomenon cannot be studied outside the context

The selection of two case studies enables cross-case analysis. Multiple case designs are considered desirable when the intent of the research is description, theory building or theory testing. Multiple case designs allow for cross-case analysis and the extension of theory with greater potential for explanation (Gable, 1994). Whereas in a single case the objective is simply to describe the situation and identify problems and issues, in the cross-case analysis the experiences of the stakeholders can be analysed within a framework derived from the literature.

The data for the two in-depth case studies used in this paper were obtained largely from interviews and some documentary sources. In the case of FoodConnect Australia, semi-structured interviews were conducted before and after the closure of the site. Key personnel represented the sponsors. Nine interviews were recorded. These included participants in the pilot study who represented 4 of the 6 firms taking part in the pilot study, a representative of each of the sponsors (2) and experienced electronic business commentators (2). All interviews were recorded between October 2001 and July 2002.

4 The Case studies

4.1 Introduction

The food industry, as we noted earlier in this paper, has a particular affinity with electronic markets. However, major players in the industry are keenly aware that there is a lag in the management of export information. Government to government documentary requirements for trade have not kept pace with improvements in the distributed processing of goods.

4.2 FoodConnect Australia

FoodConnect Australia [FCA], a B2B marketplace which ‘failed’ within one year of its launch, was designed to assist Australian exporters – particularly in the Asian region. The FCA site was offered to Australian fresh food suppliers and their Asian buyers by a combination of government and industry sponsors. The site and the pilot phase of the trading aspects of the website were launched in Sydney on 27 November 1998. In 1999, the sponsors established a trading platform, followed by a pilot program to review usability and support requirements. The FCA site went live from April 17th 2000. The site was intended to feature three major components:

- a trading hub with a searchable catalogue of products, an initial listing of around 400 Australian food companies and export documentation online.
- communities of interest such as State Governments, marketing authorities or groups of growers and producers.
- an information hub with the latest in food news and links to organisations involved in the export process, such as financial institutions and transport providers.

(Supermarket to Asia Magazine, 2000)

One-off registration provided automatic inclusion on all future documents generated on the website. Buyers from Asian supermarket chains could source food products from individual Australian producers. At the launch, the Minister stated that the site would allow products to be ordered and export documentation to be arranged online.

On April 3rd 2001, a statement on the FCA website announced that the food export initiative was not working and that the service was not commercially viable. The sponsors explained the decision to withdraw funds as being due to the immediate additional costs that would be incurred in migrating the website to a new platform technology.

The reasons for terminating the FCA site were published as follows:

- Low levels of e-commerce capability among exporters
- Low acceptance of e-documents for banking transactions and import clearance
- Suppliers exploiting the site as a source of content rather than for transactions
- Usability issues (a platform that was difficult to use)
- Low levels of internet reach in regional areas
- Unwillingness of customers to accept electronic documents.

(Supermarket to Asia Magazine, 2001)

4.3 A Regional Electronic Trade Facilitation Centre, Shepparton Victoria

'The City of Shepparton project has enormous ramifications for the horticultural industry in the region'

VEEMS Review (EACC, 2001)

Although many participants in the Australian fresh food industry are actively seeking opportunities to participate in the electronic marketplace, progress has been patchy. However the first regional Electronic Trade Facilitation Centre [ETFC] in Shepparton has become a showcase project for the participating Councils, AQIS (the Australian Quarantine and Inspection Service), third party providers and, most importantly, the region's fruit growers and exporters. The ETFC is intended to provide the horticultural industry in Victoria's Goulburn Valley – also called the Food Bowl region - with low cost and efficient electronic trading facilities with significant regional input and control. It will improve supply management in the region and assist in export marketing by presenting clustered products and services to a broader buyer market.

The ETFC provides access to technology that reduces the cost and complexity of compliance with export/import requirements. Reducing complexity encourages greater participation by small and medium sized business, an especially important issue for regional industries such as horticulture. Horticulture is an industry that deals in perishables. The potential for delays and errors in the handling of manual documentation represents high-risk exposure for fresh food exporters. Consequently the need for a better system to access export documentation is well recognized.

Major businesses in the region had been using e-Commerce to access world markets in their own right for some time. However, Shepparton Council's Corporate Manager for Economic Development was aware that smaller businesses were "struggling to come to terms with e-Commerce". Along with other community representatives he had been searching for a way to provide electronic services that satisfied the following requirements:

- all users would have access to common interfaces, software systems, infrastructure and investment
- both clients and suppliers would be represented
- local influence and participation were ensured
- allow scaling up without compromising local participation.

In 2000, the Victorian State Government established funds for the Victorian Ecommerce Early Movers Assistance Scheme [VEEMS], which offered local Councils in Victoria funds to establish a level of interest in a project, set the vision and present a business case for the business community. Greater Shepparton put in an application with two neighbouring councils for VEEMS funding. The success of the joint application provided seed capital to establish the first ETFC.

Whilst the VEEMS funding acted as a catalyst, the project only took on a commercial focus with the subsequent involvement of Whitehorse Strategic Group, a third party provider, CrimsonLogic, an overseas investor and ASP and The Australian Fresh Food Network [TAFNN] representing local growers and exporters. Each group saw the centre as a key objective.

A review of the VEEMS project found successful uptake of eCommerce initiatives by participating Councils required:

- Champions of change to provide leadership
- Networks and relationships
- Setting the project in the context of a community vision
- A clearly articulated business case and value proposition.

EACC (2001)

Each of these requirements played a major role in establishing the ETFC. The Council initiative and VEEMS funding had triggered the project. What it also needed to keep up the impetus were partners with the ability to enthuse and retain the interest of the user community. 'We were aware that the real clients were the growers and producers. It was vital to get them on side' as the project consultant recalled (personal communication, I.Dennis, October 28th, 2002). These motivators or champions turned out to be the key stakeholders in the project. As partners they brought with them processes and systems that added value to the project. By sharing resources, leverage, political clout, and having that aggregation of critical mass, these stakeholders created a win-win for all parties.

Whitehorse Strategic Group, the principal consultant to the project, identified CrimsonLogic – an established application service provider (ASP) with intimate knowledge of logistics issues for the ETFC project. Following extensive negotiations in 2001, CrimsonLogic chose the Victorian fruit industry as a starting point in Australia and worked closely with the exporters from the TAFFN group. The company set up a pilot program followed by a multi-tier export system with its branded IT solutions technology, TradePalette Agribusiness. CrimsonLogic has invested in development of the EXDOCS interface software without real cost to the recipients. Neither local councils nor growers would have been able to make this investment prior to the entry of CrimsonLogic. The ASP intends to add more functions such as business-to-business transactions and logistics management for customers.

The Australian Quarantine Inspection Services [AQIS] represents the key external stakeholder in this project. AQIS provided extensive testbedding facilities to ensure the required hosting mechanisms and security requirements were in place. Stakeholders appreciated that 'AQIS understood and saw the benefit of the solution' (I.Dennis, October 28th, 2002).

The partners in the ETFC are aware that they have achieved something special with this project, not only in the product outcome but also because of the governance processes they have developed. The model they built – designed for Australia conditions, balancing stakeholder interests with commercial ones, the interaction with AQIS – is envisioned as the basis for working with other regional export commodities.

The partnership of the ETFC stakeholders has resulted in a win-win situation for all members. Exporters have gained a web-based system for service type costs that is perceived as so simple it is almost foolproof to operate. With about six documents needed for every export order, automatic data transfer to the appropriate form means administration time is halved. The siting of the ETFC in the Goulburn Valley has expanded market opportunities for all local growers and exporters. For the ASP, CrimsonLogic, who redeveloped and customised their solution, the project has provided a way of entering the Australian market and obtaining government accreditation. AQIS, the government agency, appreciates the benefits that Crimson Logic's TradePalette software solution provides for horticulture. The

software has been designed to be translatable to other commodities, leading to the ASP's subsequent accreditation as a provider for the grain, fish and dairy sectors. The principal consultant to the project established a prototype of a successful governance structure for other regional sectors going online.

The groups brought together by the ETFC ebusiness model did not have an established history of cooperation. The fact that the principal stakeholders managed to create an online community of people with only one interest in common – that of facilitating access to government documentation – is a notable achievement.

4.4 FCA and ETFC in the Technology Frame

Bijker's technology frame (1995) in Table 2 helps us understand how power, as the capacity to shape the technology, is distributed amongst actors and objects. In the case of FCA the 'actors' developing the implementation were the two sponsors, the pilot study participants and other importers and exporters who consented to join FCA to access information and services. Export documentation, the FCA platform and the virtual community represent the objects or artifacts within the technology frame. In the RETFC case the actors are represented by internal stakeholders; namely the shire corporate manager for economic development, the principal consultancy, the fruit growers network and the ASP and the external stakeholder, AQIS. Export documentation and the RETFC are the objects.

Table 2 Application of Bijker's Technological Frame

Elements of a technological frame	Application of the technological frame to FCA	Application of the technological frame to Shepparton RETFC
Goals	To provide an efficient trading and communication hub for the agrifood sector via streamlined export documentation	To develop interface software for EXDOC for all exporters in the region and build the business case for uptake of ecommerce
Key Problems	To change customers' buying and selling behavior	To maintain momentum in realising project outcomes
Problem Solving Strategies	Extensive marketing	Work closely with stakeholders Ensure win/win for all
Requirements to be met by problem solutions	To set up a one-stop shop for export documentation, marketing, publicity resulting in a globally competitive supply chain	Ensure local influence and participation and allow scaling up without compromising local participation
Tacit knowledge	Knowledge of culture of food and beverage sector	Knowledge of export logistics (CrimsonLogic) Producers (TAFFN)

Elements of a technological frame	Application of the technological frame to FCA	Application of the technological frame to Shepparton RETFC
Testing procedures	Pilot study, surveys	Pilot study AQIS consultations
Perceived substitution function	Paper-based documentation and signatures Fragmented supply chain Firm-based marketing, publicity expenses	Firm-based marketing Fragmented supply chain
Exemplary artefacts	Government forms and business documents, Virtual Community Portal, Technology platform	Regional Electronic Trade Facilitation Centre Governance process

5 Cross Case Analysis and Findings:

5.1 Attracting sufficient active members

The FCA sponsors nominated several contributing factors that led to termination of the portal. However, reference to Bijker's technological frame and the contextualization typologies suggests that there were more fundamental problems than those acknowledged by the sponsors. The value of an electronic marketplace resides in the membership base and its unique insider knowledge of the industry. Sellers and buyers want better access and sharing of information to improve trading operations (Berryman and Heck, 2001). In practice the sponsors could not convince enough members of the target community that the FCA site could offer greater benefits than their traditional ways of operating. One respondent and pilot study participant summed up the problems for the FCA site model: 'many manufacturers including ourselves held the view that such a site should only be paid for if you get results.'

Our use of the technology frame revealed that the strategies employed to change customers' buying and selling behaviour were not adequate responses (see Table 2). The contextualisation typology reveals that FCA did not move beyond limited dialogue between formulators and proposers of the FCA marketplace. The sponsors did not succeed in producing a site that was acceptable to its industry base. Low levels of contextualisation characterised the FCA site. It lacked the socially robust knowledge that leads to high levels of participation and sharing in a transaction space. Nowotny, Scott and Gibbons' typology is helpful in elucidating why FCA did not attract adequate membership to sustain the site.

In the case of the RETFC, although the Centre is not yet fully operational, all stakeholders have stated their long-term commitment to the site.

Table 3 Developmental Features of the Innovation Process

Developmental Features	FoodConnect Australia[FCA]	Regional Electronic Trade Facilitation Centre [RETFC]
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More elements are fixed	Did not eventuate	RETFC established Government accreditation for web-based solution
More people enlisted in relevant group	Few registrations: virtual community did not grow to reach critical mass	RETFC seen as a base for reaching all of the horticultural export sector
New relevant, social groups enrolling	Did not eventuate	Accreditation for horticulture, grains, fish and dairy sector government documentation
Elaborating the meaning of the artifact	Projections made but not implemented	Similar software being installed to link G2G documentation Governance model as a process outcome

5.2 From technology platform to value-adding: the social robustness of the implementation

In the introduction to this paper we referred to shifts in conceptualising electronic markets. In analysing these two case studies we found significant differences in stakeholder understanding of what was entailed in building a viable electronic market. It is possible to relate this difference, at least in part, to the evolution of the concept over time. Initially the growth of intangible services, such as electronic markets, depends on advances in information and communication technologies [ICT]. Once the ICT network is established, the hub of the firm shifts rapidly to the customer interface (Smit and duPlessis, 2000). Innovations such as electronic markets become a means of delivering value to users of the new service. Value resides in the customer's experience of the offered service and value delivery becomes the new service paradigm.

Both of these online innovations targeted the same trading community in the same industry with the same user base. The FCA portal for fresh food exporters is representative of the majority of early generation e-business concepts in emphasising competitive aspects of e-business. Membership was sought on the basis of projected productivity and transaction efficiency gains for participants allied with a focus on increased transaction speed, lower costs and transparency. Charging an up-front fee for listing was part of the FCA sponsor's business strategy which placed a high priority on short-term profitability. Communication with users as in the pilot study, was envisaged as a one-off input necessary to get the portal off the ground. The sponsor was generally perceived as adopting a top-down approach, *imposing* its model on the users. Whilst the top-down approach provides funding and a sense of direction, it is likely to lead to under-performance because the sponsor is not sufficiently sensitive to local needs, conditions and infrastructure (EACC, 2001).

A different B2B model referred to earlier in this paper, is the collaborative relationship, where information is not just exchanged and transmitted but is also jointly developed by participants whether they are buyers and sellers or other types of stakeholders. In the RETFC implementation, the project consultant worked closely over extended periods with local government to overcome legal impediments to their commercial involvement in the project. The shire corporate manager championed the benefits for the region and the ASP, CrimsonLogic identified their willingness to work closely with and adapt software to the

needs of local users as an important component in the successful outcome of the project. Middle range contextualisation is described as: the emergence of transaction spaces between groups or major configurations which may be transitory and 'the potential emergence of objects that crystallize the transaction process and help to sustain dialogue and negotiation' (Nowotny et al: 144). The 'socially robust' development of the Centre fits this description.

5.3 Changing priorities and expectations of stakeholders

Stakeholders in the ETFC expressed a much broader range of expectations and a somewhat different set of priorities from those of the sponsors of the earlier implementation. The Centre is deliberately targeted at creating new efficiencies in the way business and government agencies interact with their partners. These efficiencies are closely related to those outlined by Hagel and Armstrong (1997):

- enabling collaboration at every level of the value (and supply) chain
- ensuring all members benefit from shared business processes and shared information
- exploring new business models
- reviewing new revenue opportunities
- reinventing the organisation.

According to Clarke (1992) progress in implementing electronic markets can be made only where at least one of two conditions holds: a powerful party must sponsor the system and all relevant parties must perceive themselves to have their interests represented, and to be able to gain from it. In each of the two case studies the sponsors had the capacity to satisfy the first condition. The second condition does not hold for the FCA portal. In this case it is notable that the question of whose interests were being served satisfactorily was never resolved. Substituting the term 'champion' for 'powerful party' serves to distinguish the two innovations. In the case of the ETFC, the Council Corporate Manager clearly saw championing it as his role and as a necessary condition for initiating the process.

The role played by the sponsors or key stakeholders during the implementation of each innovation appears to have had a strong bearing on the outcomes of both projects - a finding that supports the additional focus now being placed on governance in virtual environments.

5.4 Governance

E-governance has been addressed from ethical, legal, administrative (Timmers, 2000) and even an engineering perspective (Clarke, 2002). Depending on who controls the information and how that control and access is exercised, an online implementation can tilt market power relationships and exacerbate information asymmetry. Alternatively, where the implementation is conceptualised as a process rather than an outcome, governance strategies can ensure that IT decision rights are shared across the organisation (Weill and Vitale, 2001).

Ensuring that the user's perspective on the totality of the service is well defined and understood requires project managers to have more input into selection development and management of an implementation. Electronic markets offer new types of services. As such they are shaped by the quality of customer relationships, which become critical to successful service fulfilment. Adoption of the new service relies on frequent interaction between stakeholders and users and these interactions gradually build trust and commitment. The

greater the sensitivity of management working directly with users, the better the new service outcomes will be for the sponsors and their implementation (Bebko, 2000).

In this context, it is notable that well before the closure of the FCA portal, there was growing realisation that management requirements for the portal differed from those associated with the sponsor's standard products. FoodConnect has had a different response from other [company] products. Whereas other [company] products were easily accepted being incremental in nature, implementation of FoodConnect required a large leap' (personal communication FCA product manager, 31 August 2000).

6 Conclusions

In this study we intended to establish which elements need consideration by stakeholders implementing an electronic market. In our case studies and findings we explored how these elements can affect outcomes.

A number of such elements emerged from the cross-case analysis. Namely:

- The processes developed in implementing an electronic market are as important as products and may be even more marketable
- Governance procedures required to implement an electronic market are not well understood and differ significantly from those used for developing tangible products
- Electronic markets are attractive to users only if they add value to their business and extend standard ways of operating
- The ability to establish a sense of community can play an important part in establishing some electronic markets.

This paper set out to review how electronic markets have evolved and how they are currently understood. This required detailed consideration of two examples of innovative online implementations. Setting up an electronic market is likely to have a significant impact on the industry or sector in which it occurs. In the case of FoodConnect Australia, although the portal did not stabilise, the implementation is still regarded as a significant milestone for the food industry. Even in retrospect, industry observers referred to the portal using such terms as 'ground-breaking' or 'ahead of its time' or 'a brilliant idea'. There is no doubt that the sponsor identified a felt need and that subsequent portals responded to the same need with different implementation models. Another consequence was that the industry came under increasing scrutiny in terms of how these needs could best be addressed. In the case of the RETFC, the success of this initial implementation should provide a model for other centres as well as a major impetus to the move from commodity groupings to more competitive supply chain structures in Australian agribusiness.

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