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Abstract

Growth in eBusiness has led to an increase in the research of online business models characterized into two broad areas: goods and services provider models and collaborative models. Collaborative commerce marketplace (CCM) is vital in eBusiness models however it is only discussed in relation to the management of parts of the supply chain and not the system as a whole in the academic literature (Hodge and Cagle 2004). This paper proposes a comprehensive, visual business model for CCM with an emphasis on the interactions between core business competency to attain organizational objectives. An emerging competency of CCM such as partner/supplier identification is used to illustrate the versatility of the proposed model.

Keywords

Collaborative commerce marketplace, business model, business competency, supplier/partner identification

INTRODUCTION

Increasing complexities and uncertainties in conducting business on the web and eBusiness applications such as electronic supply chain management have contributed to the need for business models that can provide a structured view of the complex relationships between the various important issues of eBusiness. However, the terms business model and strategy are often confused with each other. It is important though to realize that they are not the same thing. Much research has been done to provide some definitions and perspectives on them. Various definitions of a business model exist but generally it is a translation of a company's strategy into a blueprint that adds value to the business. This is echoed by Seddon, Lewis, Freeman and Shanks (2004a and 2004b) who describe a business model as "an abstract representation of some aspect of a firm's strategy" detailing crucial elements necessary for a firm to successfully deliver value to its customers.

Venkatram (2000) suggests that while businesses that use the Internet can build on their current business models, other new eBusiness models should be explored. Different types of eBusiness models have been identified by Timmers (1999) and Pant & Ravichandran (2001) and these models can be categorised into two main groups as follows:

- Goods and Services provider models: these provide direct sale of goods and services (including information) on the Internet and an example of this type of provider is eBay.

- Collaborative models: these enable businesses or individuals to collaborate in achieving a business goal such as tendering of contracts, partner/supplier selection for joint bidding of contracts, CCM and virtual teams or communities on the Internet.

While the current eBusiness models which adopt Michael Porter's value chain (Porter 1980) may still be relevant to the Goods and Services provider models, new eBusiness models need to be explored and developed for the Collaborative models, in particular CCM due to the higher level of partnership and integration between the partners. Despite the importance of CCM in eBusiness models, they are only discussed in relation to the management of parts of the electronic supply chain and not the system as a whole in the academic literature (Hodge and Cagle 2004).

Revised forms of Porter's value chain have been suggested by Deise, Nowikow, King and Wright (2000) and Chaffey (2002). Chaffey (2002) suggests that for eBusiness, the value chain starts with market research made possible through electronic communication links with distributors and customers leading to new product development and new markets. This is then followed by the market and production of the new products which may be fulfilled through a CCM system. Changes made to Porter's value chain have been referred to as "*value chain disaggregation*" (Kalakota & Robinson 2000) or "*deconstruction*" (Timmers 1999). Regardless of the terms used, a common belief is that for eBusiness, the value chain is no longer a series of discrete steps. Instead the components making up the value chain should all be integrated with technology. The traditional value chain is a one-way chain, that is pushing products to customers whereas in the dynamic environment of CCM, pull supply chain models are used to deliver value to customers who are active participants of the system. Therefore, for the Collaborative models, we suggest a visual and dynamic model for modelling both push and pull systems.

According to Gordijn, et. al. (2000), in the design of a business model, the ontology for prescribing which concepts and relations present in the eBusiness model is often required. Hence, by instantiating various concepts and relations of the ontology for a particular aspect of eBusiness like in an CCM system, the relevant model can be presented in a structured and precise manner.

The objective of this paper is therefore, two-fold:

- To present a comprehensive, visual business model for CCM systems with an emphasis on the interactions between core business competency components and how these components may co-operate to attain organizational objectives and value creation.
- To illustrate the versatility of the proposed model by applying it to partner/supplier identification, an emerging competency of CCM.

This paper is organised as follows: Section 2 formulates the major elements in our proposed comprehensive, visual business model for CCM systems; Section 3 presents an application of this model to partner/supplier identification; a brief summary and further work are presented in Section 4; and finally finishes with a conclusion in Section 5.

A BUSINESS MODEL FOR CCM SYSTEMS

The major elements that are important in our proposed comprehensive, visual business model for CCM systems are depicted in Figure 1. As shown in Figure 1, our model is made up of two parts: the first part deals with emergent inter-organization strategy and its interaction with fundamental and mean objectives while the second part deals with the interactions between core business competencies, emerging competencies and support competencies and how they may co-operate to attain objectives and value creation. Each of these elements is discussed in this section.

Emergent Strategy and Objectives

Lynch (2000) defines two approaches to strategy: prescriptive or emergent. In the former, three elements of strategy: strategic analysis, strategic development and strategy implementation are linked sequentially. For instance, a strategic analysis of the external environment and internal resources is made followed by the definition of the strategic objectives and then the implementation of these objectives. In the latter, the distinction between the three elements, that is, analysis, objectives and implementation are less clear because they are interrelated. In a dynamic environment such as an CCM system where responses to the various components are not sequential, an emergent strategy should be applied. In the context of CCM systems, an "emergent strategy" may include *finding new opportunities*, and *finding new partners* and this strategy is inter-connected with the "fundamental objectives" of CCM systems like *effective partners management* and *efficient use of resources*. According to Keeney's ***value-focused thinking methodology*** (Clemen & Reilly 2001 and Keeney 1994), "fundamental objectives" are specific

objectives that an organisation or person wants to achieve while "mean objectives" are objectives that help accomplish fundamental objectives. The "mean objectives" of CCM systems may include *maximise profits, increase customer loyalty, provide single source of customer information, match supply with demand proactively, synchronizing supply and demand, minimize delivery cost*, and the like (Lambert 2006). Hence in the case of CCM systems, an effective partner management system is a fundamental objective that aims to achieve the mean objective of maximising profits for CCM systems.

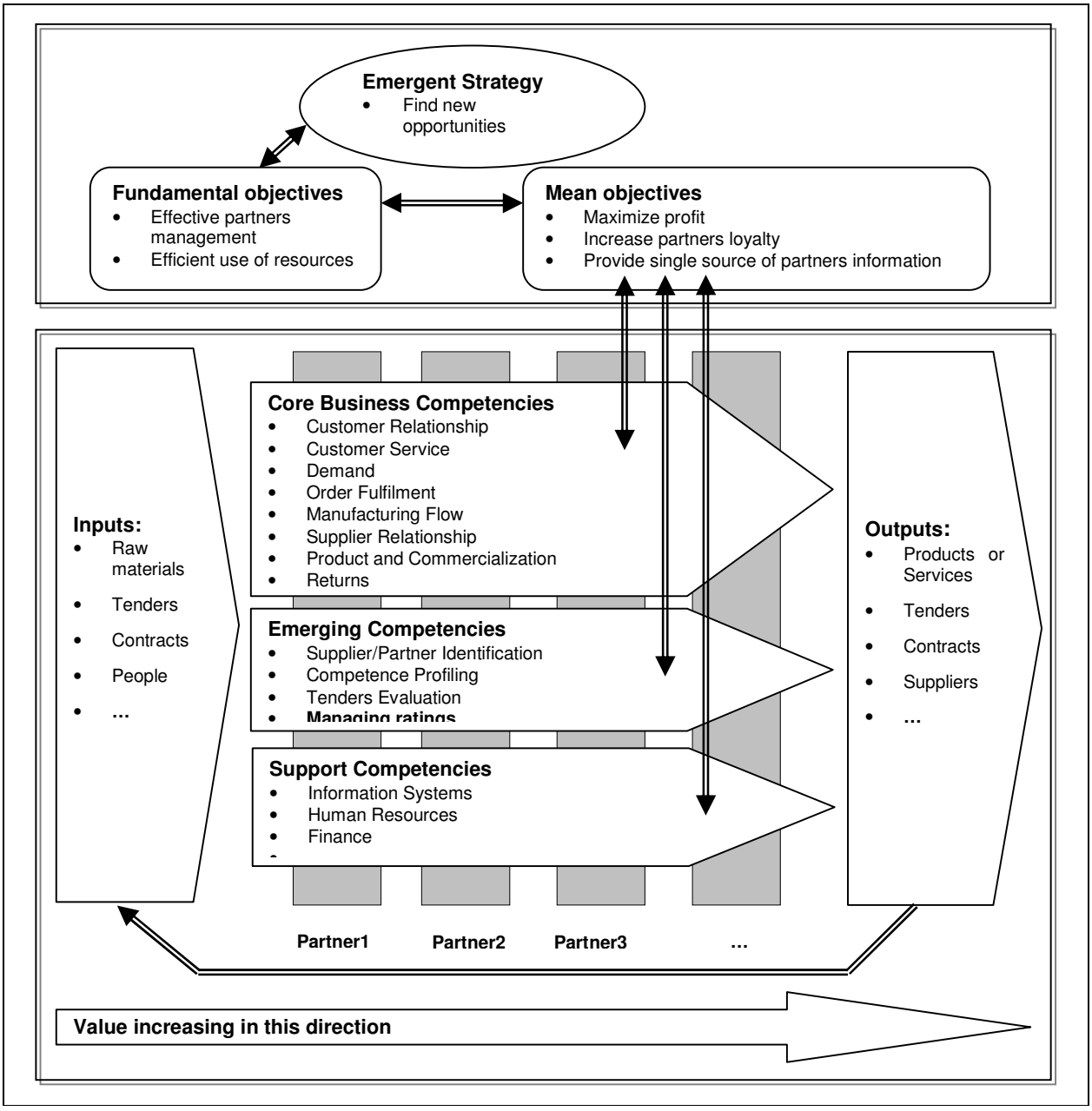

Figure 1: A business model for CCM systems

Inputs and Outputs

In the context of CCM systems, "inputs" in our model are similar to process resources and may include *raw materials, tenders, selection criteria, people* and *contracts*, among others. "Outputs" on the other hand are similar to process outputs like *finished goods, services, contracts,* and *list of suppliers*, among others. It is important to note that "outputs" from any core business competencies, emerging competencies or support competencies can also be "inputs" consumed by another competencies as indicated by the flow from "outputs" into "inputs" in the model.

Competencies and Partners

Lambert (2006) identifies eight "core business competencies" within CCM systems, namely: customer relationship, customer service, demand, order fulfilment, manufacturing flow, supplier relationship, product and commercialization, and returns.

Customer relationship provides the structure for the development and preservation of relationships with customers. The objective of this competency is to segregate customers based on their value and to increase customer loyalty by providing customized products and services. *Customer service* is the main point of contact between customers and organizations. The objective is to provide a single source of customer information dealing with customer inquiries and facilitating order placement. *Demand* balances the customers' requirements with the capabilities of the supply chain. Synchronizing supply and demand, increasing flexibility and reducing variability are among the objectives of this competency. *Order fulfilment* is a key core business competency where orders are filled. It aims to satisfy customer orders efficiently and effectively. This requires great coordination between key suppliers and customers. *Manufacturing flow* encompasses all activities essential to obtain, implement and manufacture products in the supply chain. It also includes moving products through the plants. Achieving manufacturing flexibility is its main aim. *Supplier relationship* offers the structure for the development and preservation of relationships with suppliers. *Product and commercialization* provides the structure for developing and marketing new products jointly with customers and suppliers. Its main objective is efficient flow of new products across supply chain through increased coordination. Finally *returns* encompass all activities associated with returns of products. Identifying opportunities to reduce unwanted returns and to control reusable assets are among its main objectives.

Apart from these core business competencies, we have also identified four "emerging competencies" namely, supplier/partner identification, competency profiling, tender evaluation and managing ratings,. *Supplier/partner identification* involves finding a set containing compatible partners for a particular job or tender. *Competence profiling* aims at acquiring firms' capabilities in a particular industry so that they may be accurately represented in the portal. *Tender evaluation* seeks to match a group of firms' capabilities to the requirement of tenders to enable successful bidding. Managing ratings means storing and presenting previous project performance information, to enable and enhance supply chain building. Ratings systems play a key role in services/products platforms such as eBay or RentaCoder.

Finally "support competencies" comprise of *information systems, human resources* and *finance*. These competencies are common support services presents in most organizations.

This model is centered on all the competencies that cut across partners in CCM system whereby partners may represent any collaborators from the upstream (suppliers, wholesales, retailers, distributors and/or manufacturers) and/or downstream (manufacturers, wholesalers, retailers, distributors, and/or customers) supply chain.

The **"…"** is included in this model to enable extra elements to be added as required to reflect the dynamic nature of this industry.

Aligning Mean Objectives of Competencies with Fundamental Objectives of CCM System

It is interesting to note that when comparing objectives of competencies mentioned previously (Section 2.3) and those of the CCM system (Section 2.1), it is not obvious how these competencies objectives fit into the fundamental objectives of the CCM system. Recall, according to Keeney's *value-focused thinking methodology* (Clemen & Reilly 2001 and Keeney 1994), *fundamental objectives* are specific objectives that an organisation or person wants to achieve while *mean objectives* are objectives that help accomplish fundamental objectives. Therefore, competencies objectives can be aligned with fundamental objectives of CCM system using Keeney's *value-focused thinking* as depicted in Figure 2.

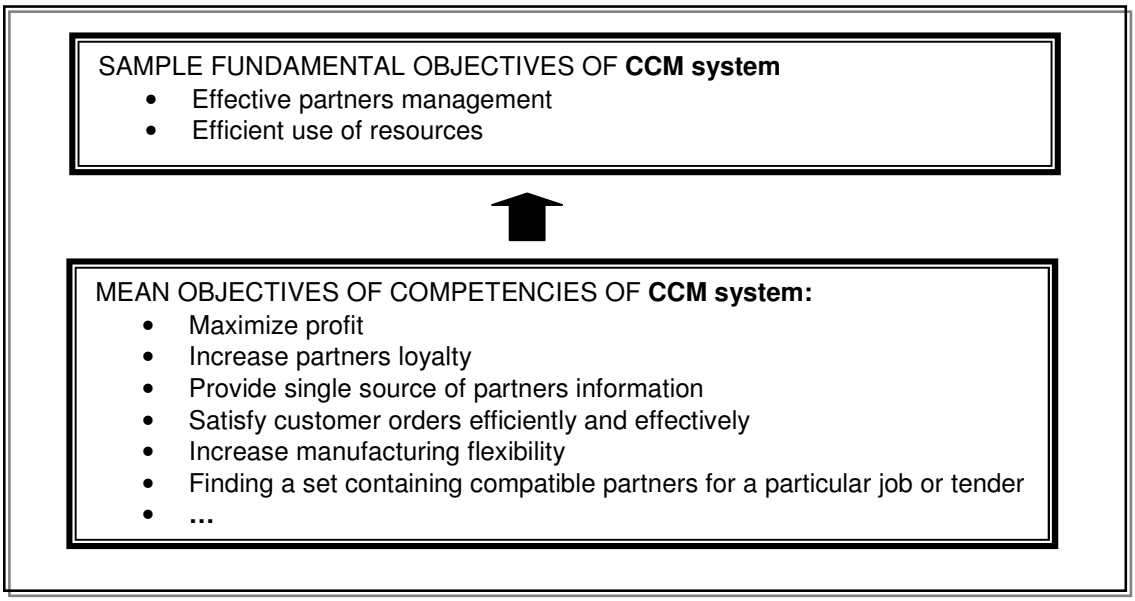

Figure 2: Fundamental and mean objectives of CCM systems

PARTNER/SUPPLIER APPRAISAL

An increasing number of business/trade directories have emerged providing the main means for online partner/supplier identification. Some examples of regional portals are the 'n-e-life' in the North East region of UK and the Pan Asian eCommerce Alliance linking a number of Asian countries such as Korea, Japan, Singapore, China, Malaysia, Taiwan, Thailand and Hong Kong. Besides providing opportunities for forming business alliances in a global environment, users of such portals can also either identify a suitable supplier for a particular work/contract or a list of suitable partners who may be able to satisfy a given work requirement. Partner/supplier identification is an important aspect of eBusiness as it enables new work opportunities in a collaborative environment.

Activities of partner/supplier identification

The process of partner selection can be broadly categorized into three activities: scanning for potential suppliers, matching suppliers' compatibilities and logistics considerations. In the first activity, non-tangible and strategic factors such as corporate culture are considered. In the next activity, attributes of industry specific systems are taken into account. For example, in a manufacturing system, some manufacturing attributes would be nature and type of product mix, types of processes, level of manufacturing automation and level of planning and control automation. Finally the geographical location, cost of transportation and handling, and other communication costs are also important factors affecting the effectiveness of the partnership.

Applying the business model to partner/supplier identification

The first part of the business model involves defining the emergent strategy for partner/supplier identification and these are shown in Figure 3. The main activities of partner/supplier identification as described above are shown as common activities/systems cutting across a list of all possible suppliers. In addition to these specific activities, underlying standard core business and support competencies such as information systems, human resources, customer services and others are also components of the model. Inputs to the model will be selection criteria for the partners such as compatible corporate culture, geographic location and the type of industry. However these criteria will be highly dependent on the particular job concerned. Partners who can complement each others' capabilities may be necessary for a required job. Another possibility is the discovery of new opportunities, for example a welding company was able to diversify into the body jewellery business when demand from its traditional market was low. Outputs to the model will be a list of compatible partners/suppliers who may be able to fulfil the requirements of a

particular job/tender. A possible extension to this model is an automated tendering system that matches partners to tenders.

By clearly defining the specific, core and support competencies in an eBusiness system such as a CCM system, interactions and relationships between these concepts are easily identified. Such interactions and relationships are also crucial to successful collaborative and virtual networks in eBusiness systems. The overall business model for partner/supplier identification is shown in Figure 3.

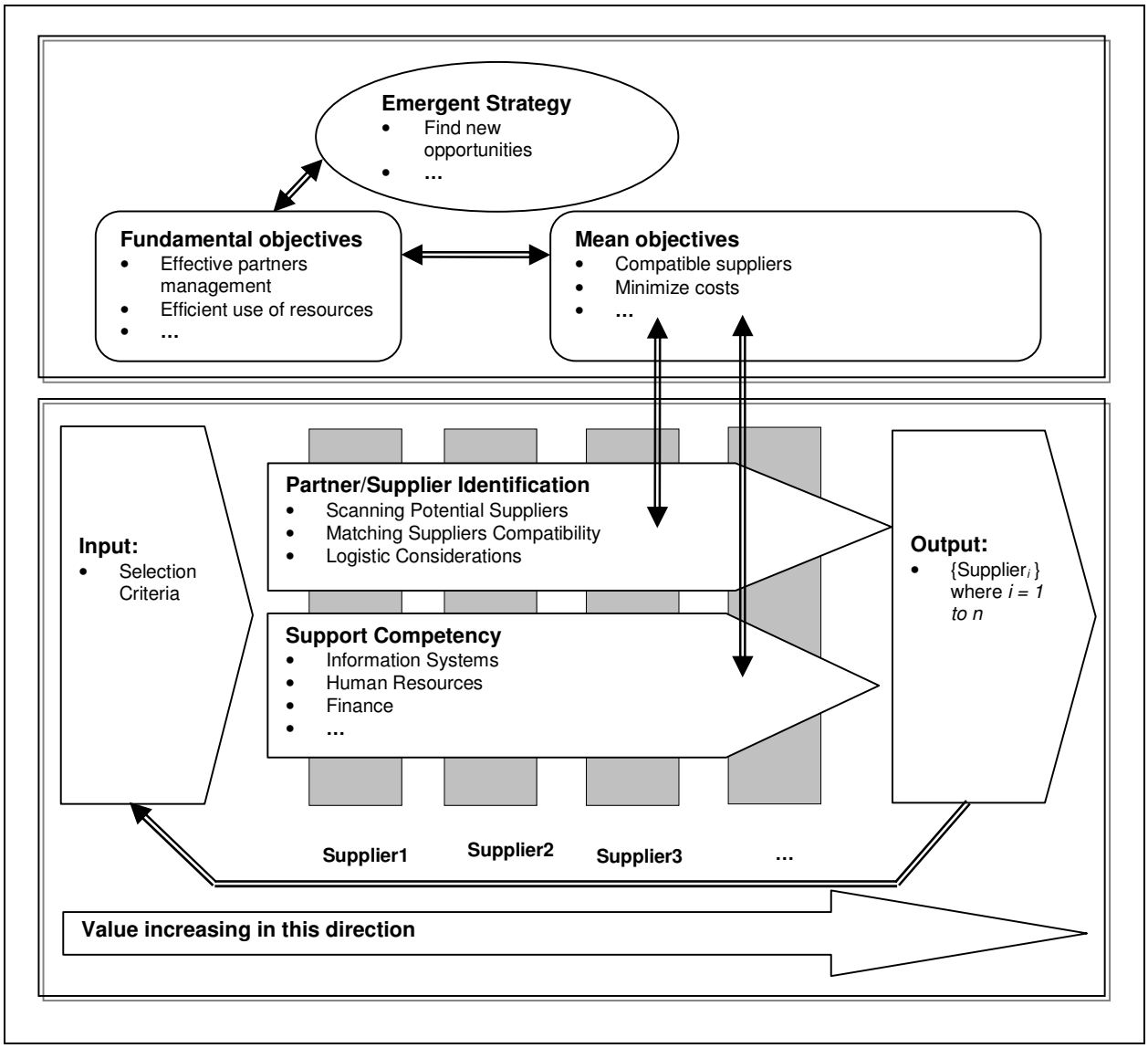

Figure 3: A business model for partner/supplier identification

DISCUSSION AND FURTHER WORK

A business model is a useful abstract representation of an aspect of a firm's strategy. Porter's business model and value chain is a well established concept and is applied widely in businesses since the 1980s. However traditional business models that support Porter's value chain concept cannot be directly applied to eBusiness. Complex synergies between firms in an electronic enabled environment need to be represented in a precise and structured manner. Even though a number of suggestions to the variation and adaptation of Porter's value chain model have

been described in the literature, a comprehensive model that includes all stakeholders of eBusiness and their relationships with each other is needed. At the same time, very little work on eBusiness models is reported in the literature. We have attempted to address these gaps in the model proposed in this paper. The model provides a comprehensive representation of a CCM, an aspect of eBusiness by incorporating the core and support business competency components as well as emergent competencies in CCMs. This model can be extended both ways to address other aspects of eBusiness and CCM. For instance, partner/supplier identification in a CCM system is described and modelled using the proposed model.

Verification of the proposed generic CCM model is also necessary and this can be done by using the case study research methodology. Specific aspects of the CCM system will be chosen for investigations. For instance, aspects of upstream CCM systems such as competency profiling where capabilities of potential partners are captured and stored for partner/supplier identification can be investigated and tested using the proposed model. Initially existing data from collaborative eBusiness systems can be used followed by in-depth case study research of selected firms.
The authors have attempted to implement this model to support SMEs (small to medium enterprises) in the West Midlands region of the UK. The portal developed "The West Midlands Collaborative Commerce Marketplace (WMCCM)" is a specific example of the CCM model described above. The system developed has over 2000 registered engineering SME members, 200 of which have been competence profiled. It has in the past 18 months generated over A$5 million of new business and over 100 new collaborative commerce relationships have been generated. See www.wmccm.co.uk for further information and case studies.

CONCLUSION

Little work on business models for eBusiness is reported in the literature and of the related work that were found, many focused on adapting Porter's work on the business model and the value chain. The European Union research project "Ecolead" proposes "In ten years, in response to fast changing market conditions, most enterprises and specially the SMEs will be part of some sustainable collaborative networks that will act as breeding environments for the formation of dynamic virtual organizations."

This paper proposed a comprehensive, visual representation of a business model for collaborative commerce marketplace systems to implement the Ecolead project vision, an important aspect of eBusiness. An application of this model to partner/supplier identification is also presented to illustrate the versatility of this model.

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