Small Business Collaboration Through Electronic Marketplaces

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INTRODUCTION

It is widely recognized that small businesses with less than 50 employees make significant contributions to the prosperity of local, regional, and national economies. They are a major source of job creation and a driving force of economic growth for developed countries like the USA (Headd, 2005; SBA, 2005), the UK (Dixon, Thompson, & McAllister, 2002; SBS, 2005), Europe (European Commission, 2003), and developing countries such as China (Bo, 2005). The economic potential is further strengthened when firms collaborate with each other; for example, formation of a supply chain, strategic alliances, or sharing of information and resources (Horvath, 2001; O'Donnell, Cilmore, Cummins, & Carson, 2001; MacGregor, 2004; Todeva & Knoke, 2005). Owing to heterogeneous aspects of small businesses, such as firm size and business sector, a single e-business solution is unlikely to be suitable for all firms (Dixon et al., 2002; Taylor & Murphy, 2004a); however, collaboration requires individual firms to adopt standardized, simplified solutions based on open architectures and data design (Horvath, 2001). The purpose of this article is to propose a conceptual e-business framework and a generic e-catalogue, which enables small businesses to collaborate through the creation of an e-marketplace. To assist with the task, analysis of data from 6,000 small businesses situated within a locality of Greater Manchester, England within the context of an e-business portal is incorporated within this study.

BACKGROUND

Small businesses are an important driving force of economic growth and job creation throughout the world. A number of studies (Horvath, 2001; O'Donnell

et al., 2001; MacGregor, 2004; Todeva & Knoke, 2005) show that when firms collaborate or network with each other on a venture, the potential economic and business benefits can be enhanced. The possible network opportunities with other firms include but are not limited to:

1. Collaboration with other businesses to purchase items such as fuel and raw materials, and hence leverage collective buying power in order to negotiate a better deal (Wang & Archer, 2004)
2. Collaboration with other businesses to offer complementary goods in order to increase sales or to enter new markets (Wang & Archer, 2004)
3. Collaboration with other businesses to share information, such as product information, customer demand, transaction information, and inventory information (Ovalle & Marquez, 2003)
4. Liaison with other complementary service businesses to jointly bid for bigger contracts and hence enabling small business to compete with larger counterparts (MacGregor, 2004)
5. Liaison with other similar businesses to jointly bid for a bigger contract than they are able to fulfil by themselves
6. Form collaborative buyer-supplier relationships

Despite government initiatives and support to promote adoption of information collaboration technology (ICT) in small firms, earlier studies show that ICT adoption by small businesses is still very low with a number of barriers to adoption being identified (Dixon et al., 2002; European Commission, 2002; Weiss, 2002; Fillis & Wagner, 2004; Stockdale & Standing, 2004; Taylor & Murphy, 2004a, 2004b; MacGregor & Vrazalic, 2005). Further, small firms are heterogeneous in nature, therefore a single e-business solution is unlikely to be applicable to all firms and treating e-business as a

homogeneous concept is probably a mistake (Dixon et al., 2002; Taylor & Murphy, 2004a; Fitzgerald, Papazafeiropoulou, Piris, & Serrano, 2005). In addition, supply chains with buyers and suppliers are not homogeneous (McIvor, Humphreys, & McCurry, 2003). Findings from McIvor et al. suggest that the barriers to the adoption of supply chain systems do not lie primarily with the technology but with the business processes itself. The effective implementation of e-business to support buyer-supplier relationships and to optimize the value chain requires that the e-business application is fully integrated into both the buyer's and the supplier's business architecture and technology infrastructure (McIvor et al., 2003). It is therefore crucial that collaboration technology infrastructure should include the following features: open and low cost connectivity, large and flexible data storage, systems and channel integration, high security, self-service functionalities based on open architectures, and data schemes (Horvath, 2001).

THE E-BUSINESS FRAMEWORK

Doing business is a chain of collaborative processes; a single firm can be a buyer for a business but also a seller for another business, therefore interactions among buyers, suppliers and trading partners are required (Adams, Koushik, Vasudeva, & Galambos, 2003). A retail trade can utilize a one-to-many e-business solution to reach more audiences and maximize profits, whilst at the same time using a many-to-one e-procurement system to streamline sourcing processes with its trading partners. Firms can also employ a many-to-many e-marketplace to achieve the above. However, in e-marketplace, resources of multiple firms can be pooled together, which cannot be achieved by the one-to-many and many-to-one e-business solutions.

This study draws on the work of Stone (2003), who presents the six "Internet States" of IBM's e-business evolution, and Martin and Matley (2001), who present a DTI e-adoption ladder, which is adapted from the Cisco-led Information Age Partnership study on e-commerce in small business. These two models have been adopted in this study as they highlight the transformational aspects of e-business technology; with a particular focus on the "transact" and "integration" stages.

To further assist with the development of a conceptual e-business framework and a generic e-catalogue, we utilize analysis of data from 6,000 small businesses situated within Tameside, Greater Manchester, England together with the vision of economic growth that could result from greater collaboration, within the context of the Tameside Business Portal.[1] According to Dixon et al. (2002), wholesaling and retailing are the two sectors more likely to adopt ICT than other sectors. In our data, as illustrated in Figure 1, the wholesale/retail trade is in fact the biggest sector within Tameside, with a total of 1,780 (29%) firms. The e-business framework was thus designed to mainly support these two sectors. Nevertheless, these businesses are mixed in nature; therefore, an e-business framework able to support more than one e-business solution is impera-

Figure 1. Business sectors and number of firms in Tameside (Source: TMBC, 2003)
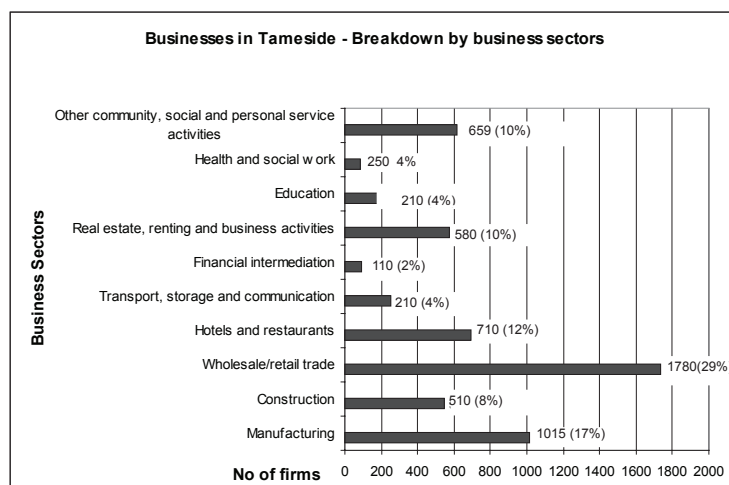
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