The Investigation of E-Business Engagement by SMEs with reference to Strategic Networks and Aggregation: the Dairy Farming Industry

Nigel J Lockett and David H Brown

The Department of Management Science
Lancaster University Management School
Lancaster LA1 4YX
UK

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Nigel J Lockett and David H Brown
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Lancaster University Management School, Lancaster. LA1 4YX. UK.

Abstract

The lack of anticipated engagement in e-business by small to medium sized enterprises (SMEs), who are an important contributor to economic activity, is of increasing concern to governments and service providers alike. This paper explores the use of a conceptual framework which includes theoretical contributions from ICT adoption by SMEs, strategic networks and inter-organisational systems and e-business models literatures in an industry specific context, in this case the UK dairy farming industry. Current levels of e-business engagement are considered together with evidence of aggregation and the role of intermediaries by the use of quantitative (survey) and qualitative (case study) methods. The example of the organic industry is investigated within the conceptual framework resulting in critical comment and validation in order to provide the basis for future multiple case investigations.

Keywords: e-business, SMEs, ICT adoption, I-ONs, aggregation, networks.

Introduction

This completed research paper sets out a conceptual framework against which one initial case study based on an aggregation in the dairy farming industry is considered. An aggregation means a grouping of enterprises engaged in similar or interdependent commercial activities. The research will form part of a wider comparison across additional industry sectors in order to deepen our understanding of the engagement of SMEs in e-business. E-Business is defined as the use of electronic communication networks to transact, process and collaborate in business markets. SMEs are defined as organisations of up to 250 employees and play an important part in any economy with 3.7 million in the UK generating 55% employment and 51% turnover (SBS 2002).

Before the Internet electronic interactions were based on proprietary networks, such as EDI protocols, and were mainly the province of larger companies primarily for reasons of cost. However, the advent of the Internet offered relatively low cost access to network infrastructure, which appeared to be particularly promising for smaller enterprises (Kalakota and Whinston 1996). This has been acknowledged by both international agencies and national governments. For example in the UK the Government has set three clear targets for the engagement of SMEs in e-business by the year 2002 (DTI 2001). The first was to ensure the connectivity of 1.5 million SMEs. This has already been exceeded and totalled 1.9 million by mid 2001. In contrast the second target of 1 million SMEs trading online has not been met with just 540,000 trading by 2002. A business is defined as trading online if it is engaging in both ordering and paying online with either customers or suppliers. A recent international benchmarking study highlighted the ‘stalling or in some cases declining, willingness of businesses to trade online’ (Booz Allen Hamilton 2002:116) and noted that this was particularly evident in small businesses and the UK. The third target of reaching parity with the best world practice was expressed in terms of SMEs’ progress up a five stage ‘e-adoption ladder’ with each stage representing increased complexity. For this third target, presumably because the adoption rate is believed to be so low, the Government has not tried
formalised for intellectual property right of the information repository but an service level agreement was in place between DMP and users. The economic effects of the applications were an increase in the structure of the information component and there was a perceived gain greater than internal and external costs. At a strategic level participants were motivated by longer term objectives, multiple perspectives converged on engagement in the application and there was institutional and relational level support for engagement. The emergence of the online application, its role in facilitating the formation of online networks and creating new value is not fully supported within the I-ON literature. This case also identified the creation of an information repository, which could be exploited by AC and DMP as an emergent property of the aggregation. There were characteristics associated with the diffusion of networks evident by a change agent, critical mass building and intermediaries. The role of the online application addressing business needs within the specific aggregation provides a possible additional factor for diffusion of interactive innovations.

Figure 4. E-Business engagement by producers. (Source: authors)

The conceptual framework proved to be a robust theoretical instrument for both shaping the investigation and structuring the research findings. However it did not anticipate the emergent property of the data accumulation from the specific aggregation and its potential subsequent economic and motivational value. The online dairy application plays an important role in engaging SMEs in higher complexity e-business applications. This is in direct contrast to recent studies, which assume linear adoption. Clearly further cases will need to be analysed in order to identify similarities across other aggregations but the research does indicate the potential importance of hosted applications that address business needs of a specific aggregation supported by trusted third parties in engaging SMEs in e-business. Practitioner communities, such as application service providers, will need to consider how the appreciation of the activities and business needs of SMEs influences the development of online applications. Simply to provide existing functionality in an online environment would not appear to be sufficient to guarantee high levels of engagement.

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