Category: Concepts, Trends, and Challenges

Transformation of E-Fulfilment Industry Capabilities

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INTRODUCTION

Over the last decade, organisations have been forced to re-examine the role of ICT as a support tool and accept that it has become a major driver for business change (Ash & Burn, 2003, pp. 297-308.). Indeed, new business opportunities have arisen solely based on e-business: *e-fulfilment* is one such example (Alexander & Burn, 2004, p.1). These services were estimated to be worth US$1,006 Trillion in the United States alone, or 10.1% of their GDP in 2000 (Rogers, 2002). Furthermore, 21% of all logistics transactions are expected to be online by 2005, with the long-term possibility that traditional freight companies will ultimately cease to exist (Homs, Meringer, & Rehkopf, 2001). This article explores the concepts which are encompassed in the term e-fulfilment, and presents a model of e-fulfilment activities. This model is then validated through the analysis of *e-fulfilment capabilities* of 48 UK based e-fulfilment companies. The findings from this analysis lead to an extension of the model and suggest a long term transformation model for the industry as a whole.

BACKGROUND

A review of the literature on e-fulfilment and online retailing identifies the following issues, which need to be considered:

- **Location Design and Picking Systems**;
- **Packing:** Specific packaging for delivery of products, can include breaking original packages and repackaging, often must be customised for each order;
- **Customer Service:** Managing customer queries and complaints;
- **Financial Transactions:** calculating and including fulfilment costs, and electronically settling these with appropriate organisations;
- **Warehouse Costs:** associated with product storage;
- **Delivery:** Systems and delivery alliances;
- **Transport Mechanisms and Flows:** Using multiple delivery mechanisms to ensure deliveries arrive on time and undamaged;
- **Procurement Management:** Purchasing arrangements automatically (electronically) integrated with fulfilment suppliers, triggering delivery transactions;
- **Management Information Systems:** Concerned with integrating and managing all aspects of the process;
- **Front End (Ordering) Services:** Which electronically trigger the fulfilment process automatically from a Web-purchaser's mouse-click;
- **After-Sales Service:** To ensure fulfilment problems are resolved;
- **Returns:** Manage reverse logistics related to incorrect, damaged or fit-for-use product issues, this must not only ensure convenient and quick return of goods, but often must initiate re-delivery (of the correct goods);
- **Real-Time Tracking:** For management of all pools of product, and also commitment to promises made by front-end ordering systems.

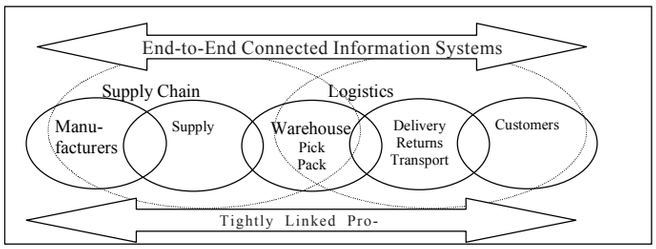
These are recognised as integrated components which create virtual proximity between e-trader and customer and cover everything a company does to satisfy customer demand within an e-commerce framework, and a succession of activities which are necessary for the successful supply of customers and markets (Klaus, 1998).

Figure 1 collapses these concepts into a single diagram, and illustrates the scope of what can explicitly be termed *e-fulfilment.*

CAPABILITIES MODEL DEFINES E-FULFILMENT

The annual report produced in the UK by *E.logistics Magazine* and known as the E-fulfilment Index (Rowlands, 2003), provided the basis to examine 48 third-party e-fulfilment service providers based in the UK.

Figure 1. E-fulfilment scope



The range of capabilities offered by the e-fulfilment providers examined is shown in Figure 2. These 13 capabilities are in the following categories, which align with aspects of the model outlined in Figure 1:

a. Capabilities for carrying out physical parts of the fulfilment process.
b. Capabilities that link processes. These are enabled by using call centres, and online track/trace capabilities.
c. Capabilities that extend fulfilment into the suppliers' and related providers' value chains.

Figure 3 shows the frequency distribution of the number of separate capabilities offered by each of the sample. It is clear from this that there are a minority of *specialists*, a large group of providers offering a half or more of the possible capabilities, and 30% of the sample offering *all* capabilities analysed.

Further analysis of these 48 organisations examined "*last mile*" capabilities, warehousing space, size and stability, turnover and relationships to parent organisations. Last mile is an area of intense interest with e-fulfilment providers (Alexander & Barnett, 2004; Alexander & Burn, 2004; Punakivi, 2001, 2002; Schulz, 2003). The capabilities include open customer delivery windows and alternative goods reception strategies.

Slightly more than 50% of the sample have already adopted most of these capabilities, or are willing to. But tellingly, almost 50% (almost all the remainder) are considering or are willing to offer these capabilities. Clearly, as these organisations feel the economic and operating pressures of last mile delivery, their activities in setting up new last-mile-specific solutions is frenetic. The data strongly indicates that the future direction for these businesses will include the provision of last mile capabilities.

Though almost all e-fulfilment providers are derived from, or are in their own right, established logistics/warehouse/transport operators, 68% are able and willing to provide new services such as Web development and hosting facilities. For established logistics providers, this

Figure 2. Percentage of sample showing specific e-fulfilment capabilities