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# The Characteristics of Successful e-marketplaces

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## Abstract

The e-business arena is highly dynamic and characterised by continual evolution in technology, marketing concepts and effective business approaches. Business-to-business electronic commerce in particular is evolving, especially in relation to virtual supply chain management and electronic marketplaces.

This paper uses a "content analysis" approach with over sixty articles being analysed. There is some confusion over the types of e-marketplaces that exist and the factors that influence their successful sustainability. The results of the analysis indicate that there are many features and characteristics which can be used for classification. Nine critical success factors for e-marketplaces have been identified including open software standards, multiple income streams, effective contract handling and relationship management. The major concern currently is how e-marketplaces can reach a critical mass of participants. For successful electronic marketplaces there is likely to be significant financial rewards for owners and members.

**Keywords:** E-marketplace, e-commerce, e-commerce benefits

## 1. Introduction

There are few studies of the impact of business-to-business e-commerce on large organisations, particularly in relation to more innovative developments in the area. Indeed, organisations in the earlier stages of employing e-commerce have little information and knowledge on its potential organisational impact, hence they are slow to restructure and adapt to the new economic environment resulting in lost opportunities and diminished competitiveness.

A major development in business-to-business electronic commerce has been the rise of e-marketplaces. Many organisations are moving into employing business-to-business electronic commerce in their complex supply and procurement chains. As the drive towards a unified e-business effort continues, coupled with newer forms of e-business such as e-marketplaces, it is anticipated that significant changes will take place within these organisations (IMTR, 1999). The changes will impact on organisational structure, management approaches, business models, staffing levels and responsibilities, and relationships with customers and suppliers (Scott & Walsham, 1998; Standing, 2000).

The nature of business with suppliers and customers is changing with the increasing use of supply chain software linked with Internet technology with the goal of virtual end-to-end supply chain management. For example, Solectron, a manufacturer in the electronics industry,

through its Internet based supply chain system has reduced the time taken to produce a prototype from ten days to 24 hours mainly as a result of the improved exchange of data between suppliers and customers (Roberts, 1999). For many suppliers e-business projects are externally driven. Whilst there is no disputing the technical difficulties for suppliers involved in integrating back-end transaction systems, data warehouses, manufacturing and inventory tracking systems with Web applications, some believe that the organisational issues are more difficult to overcome (CIO, 1999a). These issues include: change management, organisational culture and trust between companies. Companies must be confident in their suppliers to allow supply chains to open up to partners and thereby providing increased visibility into the company (CIO, 1999b).

However, many of the virtual supply chains that have been implemented are relatively fixed since companies are fully integrated with their suppliers. New developments on the Web are creating opportunities for market-space relationships between companies. Some are suggesting that the Web will be increasingly used for transient supplier relationships between traders with little or no pre-established relationship. Market-space trading may threaten the more fixed forms of virtual supply chains (Clark & Lee, 1999). These types of opportunities bring many potential benefits but also difficult issues related to trust and risk (Buxmann & Gebauer, 1999). The rapid emergence of e-marketplaces are creating trading hubs where suppliers are matched with buyers for specialised equipment, products and services. A major question is will a major company invite other companies, even rivals, to join in? Some companies want to be the owner of the dominant trading hub for their industry but know that if they become too dominant they will deter many other companies from becoming involved (Wilson, 2000).

It is envisaged the findings and recommendations of the larger research project of which this paper is part of will have the potential to improve the competitiveness of organisations engaging in business-to-business e-commerce by reducing costs, and improving the time to exchange information, services and products. The recommendations should provide organisations with the information to effectively restructure to take advantage of the opportunities provided in e-marketplace environments. In addition, the information on effective management approaches and required skills will be of use to industry and education for planning training courses and educational qualifications.

## **2. Aims of the Study and Research Methodology**

The aims of the study are to:

- Classify the types of e-marketplace models;
- "An electronic market is an interorganizational information system through which multiple buyers and sellers interact to accomplish one or more of the following market-making activities: (1) identifying potential trading partners, (2) selecting a specific partner and (3) executing the transaction." (Choudhury, Hartzel & Konsynski, 1998).
- Identify characteristics of successful e-marketplaces;
  - Identify the major problems and mistakes made in relation to e-marketplaces;
  - Determine the impact and benefits of e-marketplaces.

### ***2.1 Research Methodology***

This study involves a content analysis of a large number (over 60) of company statements, journalist articles, press releases and practitioner articles (not academic articles from journals

and conferences). The articles were taken from a wide range of sources from the World Wide Web. The Web was chosen for several reasons:

- It provides access to a wide range of source including the major consultants' reports such as Gartner and Arthur Anderson, company reports, news releases made by companies and reported in the on-line press around the world;
- The Web as a publishing forum provides access to recent, and not so recent information so that a significant period of time can be selected for analysis which opens up the opportunities to study changes in thought through time;
- Useful information is freely available on the Web;

## ***2.2 Content Analysis of Text***

Content analysis is considered as a research methodology that makes inferences by systematically and objectively identifying characteristics within text. The approach typically combines qualitative and quantitative methods since a large number of communications (texts or papers) can be analysed and at the same time the content (words, phrases and themes) can be qualitatively analysed.

"Whatever the variation in definitions, all convey the notion that content analysis is a rigorous process with a definite structure to it." (<http://www.geolog.com/gmsmnt/gmca.htm>)

For this study content analysis can be used for revealing trends in communication content, the e-marketplace focus of the media industry and potentially the existence of business propaganda.

The approach has a number of distinct advantages for IS researchers. It combines qualitative and quantitative methods which is increasingly being seen as a worthwhile research approach. Communication is a central aspect of social interaction and content analysis procedures operate directly on text. Content analysis is an unobtrusive technique and works with unstructured material; the Web being a good example of an unstructured information repository. Content analysis can cope with large volumes of data.

The stages involved in conducting a content analysis are as follows:

1) Develop research questions and hypotheses.

Related to our aims of the study a number of hypotheses are proposed:

H1: There are two types of e-marketplaces: vertical and horizontal.

H2: There are a relatively small number of critical success factors for an e-marketplace (less than 6).

H3: The major problem related to e-marketplaces is a lack of an effective revenue stream.

H4: The major benefits of e-marketplaces are financial related to cost savings and increasing profits.

2) Investigator selects a sample and defines categories.

3) Investigator reads and codes a representative sample of the content according to objective rules.

Of course, this is an iterative process with the investigator refining stages 2 and 3.

### 3. Findings

It would appear that e-marketplaces can be classified in numerous ways. The vertical (sector based) and horizontal (across sectors) classification is widely referred to but there are other factors used to classify them:

- Vertical/Horizontal - according to industry sector.
- Geographic coverage - whether the market is national, regional or global.
- Size of companies involved - e-marketplaces are thought of as being used by large companies but small companies can create e-marketplaces.
- Operating model
  1. the laissez fair model provides information from the seller for the buyer but does not support negotiation between buyer and seller
  2. the mediated operating model makes the marketplace an active intermediary between buyers and sellers, supporting transactions through the marketplace
- Delivery model
  1. the stand alone model is not part of an application, it is an independent entity accessed directly by users where transactions may or may not occur online
  2. the embedded delivery model is embedded within an application or sets of applications. Users can take advantage of the integrated features this provides but transactions must occur online.
- Private versus public  
Private e-marketplaces restrict users and accessibility, whereas public marketplaces are potentially available to any company.

There are many success factors in the development and sustainability of an electronic-marketplace mentioned in the content (table 1). All factors in table 1 are mentioned in some of the 60 plus articles but the most commonly referred to factors for success are the critical mass of participants required by an e-marketplace to make it effective. This is an important topic since in some industry sectors there are many e-marketplaces co-existing. The second most mentioned topic or theme is how the e-marketplace can make money or generate revenue that is sufficient and sustainable. The third ranked theme is the need for the marketplace to match participant requirements which could be in relation to specialist or customised information provision. Importantly, all of the factors listed appear critical to the success of an e-marketplace and are mentioned in the literature as being critical.

Technology infrastructure
Open software standards (compatibility)
Availability
Performance
Transaction-administration system
Contract handling
Effective payments
Management of member services
<b>Income stream</b>
<b>Income stream in model</b>
<b>Multiple income streams</b>
<b>Participants</b>
<b>Critical mass</b>
Existing customer/suppliers rather than new customers/suppliers
<b>Fulfills participant needs</b>
<b>Value adding model</b>
Tailored to participant needs
Competitive advantage
Leader
Sustaining competitive advantage
Relationship management
Trust
Security
Confidentiality
Level of independence
Neutrality and ownership

Table 1: Success factors in e-marketplaces

\*Factors in bold are the most frequently mentioned.

### **3.1 Problems associated with e-marketplaces**

A number of issues and problems have been highlighted in relation to e-marketplaces (table 2). The most frequently mentioned problem is the plethora of e-marketplaces and the likely lack of a critical mass of participants. Lack of revenue from the e-marketplace is the next factor in the rankings followed by security issues.

<b>Too many e-marketplaces</b>
<b>Lack critical mass of participants</b>
<b>Lack of revenue</b>
<b>Security</b>
Technical and administrative performance
Legal issues
Lack of strategy

Table 2: Problems associated with e-marketplaces

\*Factors in bold are the most frequently mentioned.

### 3.2 Benefits associated with e-marketplaces

Benefits that are being reported in the articles are listed in table 3. These most frequently relate to savings for both buyers and sellers and exposure to new customers.

<b>Cost savings in selling</b>
<b>Savings in purchasing</b>
Speed to sell/purchase
<b>Exposure to new customers (global reach)</b>
Convenience to users
Transparency to users
Better quality of product/service (global reach)
Reduce need for office space
Fewer resources required (ecological)
Greater choice for buyers (comparison shopping)
Better quality information on products/services

Table 3: Benefits associated with e-marketplaces

\*Factors in bold are the most frequently mentioned.

## 4. Discussion

From analysing the content of the large number of articles on e-marketplaces the hypotheses can be tested. The first hypothesis was:

H1: there are two types of e-marketplaces: vertical and horizontal.

This hypothesis is difficult to test since it depends what one chooses to use as primary classification factors. However, there are many ways to classify e-marketplaces identified from the articles. Equally valid classification themes are the operating model, delivery model and whether the e-market is private or public. Therefore the hypothesis is rejected.

The second hypothesis was:

H2: There are a relatively small number of critical success factors for an e-marketplace (less than 6).

Nine high level factors are mentioned as critical to the success of e-marketplaces. Although critical mass of participants and adequate revenue streams are mentioned the most, all of the other issues are relevant and cannot be ignored. An effective technology infrastructure, effective payment system, adequate levels of trust between members, for example, are all critical. This hypothesis is therefore rejected.

Revenue streams figured highly throughout the content and the third hypothesis examined if it was the most significant issue.

H3: The major problem related to e-marketplaces is a lack of an effective revenue stream.

The most commonly referred to problem in relation to e-marketplaces was the danger of a lack of participants or critical mass. Clearly, this impacts on the revenue potential when there are few members and few transactions taking place. However it would still be possible to generate substantial revenue with a few members in a marketplace if each transaction was of

high value with a commensurate commission charged. The problem in such a case would be the difficulty in matching buyer and seller requirements. As a consequence hypothesis three is rejected.

There are many potential benefits related to membership of an e-marketplace. Cost savings and increasing profits are the most commonly occurring themes in the articles. This means that hypothesis four:

H4: The major benefits of e-marketplaces are financial related to cost savings and increasing profits.

is accepted.

#### **4.1 A note on the research method**

The research methodology chosen as a basis for this paper was "content analysis". There is great potential for using this method in information systems research. The World Wide Web serves as a large global database of news releases on IS/IT related topics. The number of news articles being made available over the Web is likely to increase as it becomes an important channel for the media industry.

#### **4.2 Further Research**

1. To determine the level of types of changes taking place in the organisational structures of large companies and changes in the decision making processes as a result of increased and innovative use of business-to-business e-commerce.
2. To define the extent to which developments in business-to-business (B2B) e-commerce are changing organisational business models. For example, the impact that the Internet and e-commerce has had on local/global organisational boundaries.
3. To examine the changing role of supplier and customer relationships in the B2B e-commerce paradigm, particularly as a result of e-bidding, e-marketplace trading and the use of e-trading hubs.

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