Electronic Product Catalogues: What is Missing?

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Abstract

This paper addresses the idea that although Electronic Product Catalogues are improving a lot , they are only a necessary but insufficient condition to turn a company into a so-called "Digital Organization".

The paper reviews both the functional character of the EPC and their recent evolution. It pays special attention to the efforts of many software companies, specialized in developing this kind of product, as they strive to make management easier for both sellers and buyers.

Finally, the paper addresses the question of how the EPC fit into a basic organizational model, in which technology, people and processes constitute vital elements. Companies need to develop medium- and long-term strategies that enable them to establish their presence in electronic markets, while offering prospects for the future thanks to sustained competitive advantages.

Introduction

Electronic commerce is expected to be a multimillion dollar business. This belief is based on a study by McKinsey Consulting (The McKinsey Quarterly 1995), which predicts that electronic purchases from private households will create a market of $4-5 billion by the year 2003. Already today, commercial transactions are carried out electronically, although the volume has not yet reached outstanding levels in absolute terms. These transactions, leaving EDI aside, are carried out mainly on Internet.

Aside from the basic telecommunications infrastructure, this potential market needs tools that will facilitate electronic transactions. Electronic Product Catalogues (EPC) are an example of such tools, and are already being improved thanks to Internet's widespread acceptance.

Today, between 50 and 60 million people are connected to Internet; in April 1997, 73% of them used the World Wide Web to make a purchase (The Economist, 1997). There is no doubt that electronic markets are emerging, but the job of consolidating them and establishing minimum requisites and standards is still pending (Schmid, 1997).

The supply of EPC is diverse and still growing. In recent months, many companies have launched EPC software. However, standards have not yet been established, nor have minimal functional requirements been set. EPC development companies, as well as the firms that want to find a place in these new markets, find themselves at a learning stage. Today's solutions are being discovered in a context of collective learning, and with time will give rise to better and better solutions.

In this article, we will examine a series of positive circumstances, such as:
♦ Marked improvements in basic telecommunications infrastructure, both by public and private initiatives.
♦ Dramatic, even exponential increases, in the number of Internet users.
♦ Remarkable improvements in the performance and functioning of the Electronic Product Catalogues (EPC).

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Nevertheless, while these conditions are necessary they are also insufficient for the full development of electronic markets.

Electronic Product Catalogues

Today, many different options of EPC software are available for users, which try to take into account the needs of both sellers and buyers. The consumers (buyers) of this kind of software are the firms which want to sell their products (or want to cooperate with a group of firms in putting together a combined offer). For this reason, many of the softwares' features are aimed at satisfying the needs of these consumers (i.e., the firms which want to enter the electronic marketplace).

The vast majority of these kinds of software adopt a dual perspective in developing their functionality:

Seller perspective (the buyer of EPC software perspective)

The main performance features offered by today's EPC from the seller perspective are:
♦ The possibility of updating, particularly regarding the following operations:
  ‣ Remove sold out products.
  ‣ Change prices.
  ‣ Make special offers (change the way an item or set of items appears).
  ‣ Facility to add new promotions instantly.
♦ Integration with back-end E-Commerce packages so you do not have to worry about transaction processing. Theoretically, this would include the following features:
  ‣ Integration with payment systems.
  ‣ Requesting courier services.
  ‣ Printing courier labels.

Other additional features that many EPC offer are:
♦ Any HTML editor can be used to create custom layouts (if using http protocol).
♦ Capturing Customer Information (This activity is critical to provide unprecedented data for marketing analysis):

▸ Buying patterns.

▸ Learn what products are attractive to customers by recording item level hits.

▸ Tracking of consumer browsing.

Buyer perspective
(An individual who uses the software to buy an item):

The EPC currently on the market feature, in different formats and of varying quality, the following capacities:

♦ Search capabilities.

♦ Shopping basket facilities.

♦ Ordering facilities.

♦ Information on updating by e-mail.

♦ Etc....

As we have seen above, many different performance features are available in the software that is on the market today. Viewed superficially, the EPC seems very attractive and the future looks bright.

However, the principal problem that potential clients encountered (at least until the end of 1996) was technical in nature: incompatibility with current systems. Research has detected three types of incompatibility: a) hardware-based; b) software-based (and implementation); and we also mention a third type c) which is a combination of a) and b), but which we will not discuss in this paper.

The dramatic decrease in hardware prices permits firms to invest a smaller percentage of their information systems budgets in hardware. However, it is generally recognized that type b) problems are the trickiest. The cost of software and its proper application are a growing part of the total cost of information systems.

The implementation of most EPC available on the market at the end of 1996 was problematic for the following reason: All the features the EPC offered depended on the use of a specific database manager, sometimes even specific to the EPC itself. This reality directly affected the firms that purchased the EPC, since the majority of them were already in the market and us-

ing traditional commercial channels (and traditional software was already in use).

For many companies, the electronic commerce systems represent a new sales channel for existing products. These firms already had a set of computer systems in place which were incompatible with the EPC software. An EPC such as those described above would require the duplication of a database with the product catalog (references, specifications, prices,...), making it extremely difficult to maintain.

Fortunately, the software manufacturers responded quickly to this criticism. Today, companies are free to design compelling storefronts without having to worry about site structure or database interface.

Certainly, businesses should not have to reengineer their established IS processes to take advantage of Internet. EPC must enable an enterprise to extend its core business onto Internet without disrupting the firm's infrastructure.

Business activities and EPC

As we have seen, technical solutions are offering more and more performance features. While supply is increasing, there are still a number of important questions that must be taken into account. We deal with these below.

The use of EPC in Internet permits direct, interactive contact with the client, and allows the firm to access valuable information, which can later be used to improve product promotion. In addition to interaction, the electronic medium permits customization. The EPC can help customize the content of the product in which a client is interested (for example, by creating an age-based profile that determines the offer shown), or even change the offer itself (for example, change the price if the client belongs to a certain club or is a preferred customer). This kind of EPC feature are in line with the new marketing tendencies, such as micro-marketing or personalized marketing (Peppers & Rogers, 1993).

As a firm learns about its clients, the specific role of technology lies in its capacity to file or record each moment of the exchange, such as requests for information, purchases or requests for customer service. The EPC's capacity to play a particularly active role in this area is greater than its capacity to provide continuous updating for a product offer on Internet, as well as its capacity to manage the back-office.

It is also important to discuss the usefulness of the EPC in markets or products in which information provides an added value (unlike commodities markets). When purchasing certain products, clients are very pleased to receive additional information before or after purchase (Segev, Wan & Beam, 1995); this information can be provided rapidly and cheaply, thanks to the EPC. A frequently-cited example is wine sales over Internet. Potential clients are very appreciative of information, for example, regarding vineyards, taste, foods which go well with a given wine, conservation methods, and positive or negative comments by other clients.

What is missing?

The EPC offer technical solutions which facilitate a series of transactions between a client (demand) and a seller (supply), such as requests for information, buying and selling, payment, customer service and, in certain cases, product delivery (for example, software). We have also seen how the EPC can help firms (supply) obtain a great deal of useful information about clients (demand), which can later be used to adapt the offer as much as possible to the client's demand, in search of the classic economic equilibrium.

The EPC also allows companies to automatize a series of functions which are important in updating various aspects of the product offer (characteristics, availability, price, etc...). Moreover, the cost of updating is very low and does not involve any tasks aside from those already being done (products, prices and clients database maintenance).

Coming back to the title of this section, if the EPC also cover firms' needs, at least theoretically, then what is missing?

The ability to sell a client a product or a series of products, based on a very fine understanding of their needs and an analysis of customer records, is not enough. There is no reason why a specific technology, such as Internet supported by EPC, in a given company will necessarily give that company an advantage, for example, over their competition. These technologies must be integrated into the company, accepted by its members and incorporated as an element of the business strategy.

If we accept the following simplified model of an organization (Figure 1), we must see how EPC must be integrated in the technological, organizational (processes, structure and people) and strategic aspects, in order to be a genuine source of sustained competitive advantage.

Originally, EPC were conceived only in an organizational perspective. However, as we saw at the beginning of this article, they have multiple functions and can help in day-to-day organizational management (remove sold out products, change prices, make special offers, facilitate addition of new promotions instantly, integration with payment systems, etc....).

Later, EPC were improved and the technological component was incorporated, that is, the manufacturers solved the hardware and software incompatibility problems by switching from closed to open systems, by changing from the utilization of a specific database to the possibility of using any kind of ODBC connections, etc.....

For the moment, it appears that the situation is stagnant. First, EPC were integrated at the organizational level, and later in technology. Nevertheless, a basic component is missing in order for a firm to enjoy EPC's full potential: EPC must be integrated or aligned with the business strategy. Some authors (Miles & Snow,
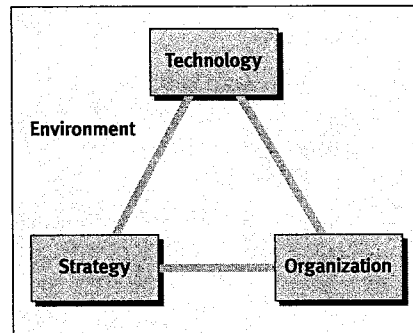

Figure 1
Simplified model of an organization

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1994) call this alignment "fit"; only those companies that learn how to create and maintain this "fit", despite rapid and unpredictable environmental changes, will succeed in the long run.

CONCLUSION

It takes a major organizational commitment to maintain a sustained presence in the electronic markets, supported by EPC. It also requires a defined strategy: the members of the organization must have a clear vision of the goals to be reached, they must know the business values, and they must know how to take advantage of these values in order to achieve the organizational goals.

Excellent EPC options exist in the market. But firms must recognize that the existence of these options is only one necessary pre-condition for success in the electronic market. Without good EPC, success is impossible; but even the best EPC is insufficient for a company to succeed in electronic sales.

The ideal, when the three parts are firmly integrated, is to achieve what are called today the "digital companies": fully integrated organizations relying on information technology both for customer interaction and internal management. The people involved in such companies need a strategic vision, an understanding of the internal processes which are affected, and a profound knowledge of the organizational information system.

Empirical and conceptual research is needed in order to validate some of the statements made in this article. Some complete and successful experiences exist already, both in the United States and in Europe. An in-depth study of a specific case would surely help to understand how an entire organization manages to integrate its people and its processes with its technology, following a clear and well-defined strategy.