

# E-Procurement

## Fashion or structural opportunity?

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### EXECUTIVE SUMMARY

E-Procurement, which involves the rationalisation of ordering procedures using the Internet, is becoming an essential part of the armoury in the competitive battle because it has a drastic effect on the cost structure of an enterprise. The first introductory chapter provides some figures and examples to show its potential, as well as reviewing governmental, business-to-business and finally SME e-Procurement. The second chapter looks at the factors behind the boom in e-Procurement, illustrating its superiority over the old Electronic Data Interchange (EDI) system. This chapter highlights the changes, both external (with trading partners) and internal (back office, internal logistics), in which factors such as organisation and culture play no small part. The third chapter explains the four dominant deep market structure models, whilst the fourth chapter concentrates more explicitly on the selling and buying model. The document concludes with an analysis of the minimum conditions for success and underlines the importance of a critical mass of players. In this respect the European public authorities can act as a driving force in the process.

### I. Introduction

The calculation is simple: in 1998 the Belgian state spent approximately 300 billion euros purchasing goods, services, public works, various supplies, material of all sorts, advice, etc. Out of this vast sum, around 2 to 2.5 billion euros were used solely to pay the administrative costs of processing the orders themselves<sup>1</sup>. However, if all of the procedures associated with public spending had been carried out using automated, standardised systems based on Internet technologies, the administrative cost of these purchases would have been reduced by around forty percent<sup>2</sup>. As a result, the Belgian government would

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<sup>1</sup> Drawing up specifications, publication of calls for tender, handling and evaluation of dossiers, salaries and remunerations for the man-hours used, telephone bills, travel, copies, depreciation, order forms, issuing invoices, etc.

<sup>2</sup> In general, the administrative cost of handling orders is reduced by 35 to 45 %.

have made net savings of between 700 million and 1.012 billion euros in 1998 alone!

Another telling example – extreme perhaps, but nevertheless real and not merely hypothetical – is without doubt that of the Bank of Ireland which saw its average cost per order of USD 100 fall to USD 10 simply through automating its procedures.

Having said this, apart from these flagrant examples, companies that automate

their purchasing procedures using e-Procurement technologies make an average saving of 8 to 12% on their purchases<sup>3</sup>. The sums thus saved can either be earmarked for investment or indirectly recycled by reducing the prices charged by the company, or injected into customer service, etc. Whatever the case, this saving contributes to an overall increase in the competitiveness of the company. The human, material and financial resources released in this way can then be used for more strategic activities (optimisation of the supply chain, quality control, improved customer support, etc.).

“Early adopters of Internet Procurement automation realized significant ROI in the following areas:

- *Lower material and service costs*: 5 to 10% reductions in prices paid for operating resources through reduced maverick buying, increased use of preferred suppliers. In some instances, savings exceeded 20%.
- *Shorter order-fulfillment cycles*: time request to purchase reduced by 50% to 70%. Order cycles dropping from 7.3 days (on average) to less than 2 days.
- *Lower administration costs*: early adopters realized a 70% reduction in the administration costs
- *Improved inventory practices*: 25% to 50% reduction in inventory costs.”

(Aberdeen Group, 1999)

The link between the adoption of e-procurement and the competitiveness of an enterprise therefore seems clear: the further a company progresses with the adoption and implementation of digital procurement procedures, the more chance it has of becoming a serious competitor in its economic sector, where it will be easier to contribute to structuring the market, leaving its rivals well behind.

From a completely different perspective, we see that the world of SMEs, where it adopts procedures and technologies to automate purchasing, also benefits from a drastic fall in the cost of order processing. For SMEs, the average reduction is in the order of 5% of the total value of the purchase, which is far from negligible given the fact that the globalisation of markets is putting ever-increasing competitive pressure on SMEs and forcing them to cut their costs wherever possible.

Moreover, if we consider that, in manufacturing firms, purchasing operational resources accounts for around 35 to 40% of total expenditure, and that this percentage can be as high as 60% for service companies, it is easy to see that

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<sup>3</sup> The gains are higher when e-procurement concerns secondary supplies that generally require numerous transactions (computer hardware, office supplies, magazine subscriptions, business travel, etc.).

the potential for savings is substantial. However, up until now the procurement of operational resources has often suffered from a lack of organisation with extremely damaging results. The absence or inadequacy of controls has led to additional expenditure headings in the already stretched accounting of such enterprises. For example, the Aberdeen Group (September 1999) shows that the lack of a coherent supply policy leads to certain extreme situations in which up to 40% of operational resources are procured outside of the contractual framework with the usual or privileged suppliers. Bringing these “anarchic” costs back into the framework of company contracts results in significant and easily obtainable cost reductions.

Moreover, the procurement of operational resources often involves substantial quantities of relatively inexpensive goods. If one takes into account the costs associated with handling paper-based ordering, this sometimes leads to the paradoxical situation where the administrative cost is equal to, or even exceeds, the price of the goods to be purchased. Automating these procurement procedures for operational resources could therefore eliminate this costly paradox.

Indeed, the two-pronged central question of knowing whether and how the Internet could contribute to greater business efficiency in practice can be easily and immediately answered by simple observation of the average savings achieved by companies (and public institutions) which have adopted the system, showing that e-procurement can be used to facilitate, make more fluid, accelerate and automate existing procedures, whilst considerably reducing the financial cost.

The competitive pressure, both domestic and international, to which each link in the value chain is subjected (in all enterprises, whatever their size), inevitably forces the entrepreneur or the management to exploit every

“Early adopters of Internet Procurement have realized significant reductions in the burdens and costs associated with operating resources purchases, resulting in corresponding improvements in profits. In fact, most user organizations (...) were able to realize more than a 300% return on investment in Internet Procurement automation within the first year of deployment.” (Aberdeen Group, 1999)

conceivable opportunity, not only to reduce the rigidities embedded in the production process, but also to lighten the cost structure at every phase of production and distribution. In this respect, e-procurement constitutes a very interesting and profitable remedy at both levels: it is both a tool for eliminating rigidities and an instrument for reducing operational (and production) costs.

## II. The advantages of e-procurement

Automation of purchasing, or *e-procurement* as it is increasingly called, is all very well. But what is it exactly?

Since the nineteen sixties, companies have understood the benefits that they can obtain from the computerisation of their basic procedures for purchasing goods and services from their usual suppliers. The spread of EDI (*Electronic Data Interchange*) solutions did not happen by chance: a group of enterprises already used to dealing with each other set up a proprietary network on which they could send orders and invoices to each other. However, this solution proved to be more costly than expected because it required not only buying or leasing special telephone lines for transmitting information, but also computer systems, often proprietary, to process the data within the group.

The arrival of the Internet in recent years has overturned all that by offering the possibility of using a public, open, secure and standardised network to transmit data for the private use of enterprises. As Bruno Leijnse, a specialist in the digital economy at Trends, points out, the Internet is rapidly substituting for EDI because the latter implies that the exchange of information between enterprises or between enterprises and administrations remains dependent on relatively closed technological solutions that are far from suitable for the integration of new partners. However, with the use of Internet technologies, we gradually move from a fragmented set of closed economic microcosms, inhibited by their choice of proprietary technology, towards open interfaces to which each partner can freely connect and become part of the data exchange network. In brief, rather than having thousands of small inter-company networks that support day-to day operations, we promote the installation of a small number of huge public networks on which thousands of companies carry out millions of operations every day, allowing everyone to benefit from the economies of scale resulting from linking everyone together.

As a result, a growing number of small, medium and large enterprises are using the Net not only as a medium for enhancing their visibility from a marketing standpoint, but also to facilitate, make more fluid, accelerate and, finally, digitise existing procedures. Moreover, whilst the role of EDI was confined to the automation of orders and invoices, with the Internet the entire purchasing/sales cycle (from management of part of the production chain to the interface with delivery logistics, including stock organisation) can be restructured to improve the overall efficiency of the supply chain.

- This is no doubt responsible for the growing success of business-to-business electronic commerce compared with the EDI market, which has never succeeded outside of a very restricted niche.

**Business-to-business electronic commerce in the USA** (source: Forrester Research)

<b>1998</b>	USD 43 billion
<b>2003</b>	USD 1300 billion <sup>4</sup>

- Hence, also and inevitably, the need to inject into the enterprise (or public administration) a much larger dose of automation than previously because the effects of the new distribution channel are felt throughout the value chain and not only on the means of exchange with the exterior. It is precisely at this level that we encounter restrictions and the development of a vast digital economy comes up against the most difficult hurdle: for the rapid and harmonious development of business-to-business electronic commerce, the unsuitability of the internal organisation of enterprises to withstand the direct and indirect impacts of the adoption of new communication and information technologies indubitably represents a much greater barrier than the technical problems. If the enterprise decides to distribute its products over the Internet, it must first (or simultaneously) consolidate an organisation designed to allow it to cope with the requirements of speed and efficiency that the Internet in general both presumes and imposes.

To achieve this, enterprises and administrations have to start by rethinking relations with their trading partners in the light of the three new characteristics introduced by e-commerce and e-procurement (Stephen Cole, 1999 January):

- “Broad and deep information sharing is the price of entry.” Information on products, as well as on planned production, stocks, prices, delivery times, etc. In this arena, enterprises must make often difficult choices between which information to share and which to keep internal.
- “The ability to commit in real time –and deliver on the promise– is paramount.” Providing precise information is not everything. Enterprises must allow their partners to use this information in real time to make purchasing possible. In addition, the information provided must reflect the real situation (concerning the status of stocks or delivery times, for instance).
- “Internal and external business units must be treated identically.” External partners must be treated with as much attention as internal departments since they all form an integral part of the life of the company.

E-procurement:

- Cost savings from supply-side efficiencies
- Cost savings from ordering procedure simplification
- Customer interaction enhancement
- Purchase cycles shortening

To summarise, it is true to say that the Internet is in the process of giving a positive boost to business-to-business commerce by renewing the means of exchange (transactions, invoicing, payment, delivery). However, the trend will not become truly significant until the internal

<sup>4</sup> This should be equivalent to 9% of the business-to-business total in the USA.

structure of enterprises and administrations adapts to the changes wrought by the transformations that are taking place in the trading networks. In other words, as Ernst & Young pointed out in 1998, "if we define Supply Chain Management as the flow of materials and products, information, cash, and work from the point of first supply across the enterprise to the consumer and back, then a good command of chain management is a true source of competitive advantage because it can definitely impact business success (minimising costs, accelerating speed, ...). Moreover, when a supply chain is transformed through the implementation of an e-procurement strategy, the benefits includes cost reduction (for both the buyer and the seller) and profitable growth. But any e-procurement strategy deployment implies the redesign of the enterprise processes."

### **III. Strengths and weaknesses of the different approaches**

From the point of view of investment conservation and protection, the automation of purchasing via the Net procures a sizeable competitive advantage compared with EDI: the Internet does not force enterprises to change their internal computer systems to align with a single technology that all partners have to use. With the Internet, communication between enterprises and their computers is standardised, but each enterprise is free to retain its preferred computer system. Compared with EDI, the Internet therefore has the advantage of being inherently cross-platform and allowing any enterprise (whether it uses Unix, Linux, MacOS, OS/2, AS/400, Windows or whatever) access to its suppliers' online catalogues, or to share product databases (compositions, user instructions, technical information, pricing), etc.

This apparent simplicity nevertheless requires an upstream effort on the part of the companies involved to make all of the information shared between the partners usable. How does e-procurement function? You should remember that it is not restricted to taking in hand and digitising only the payment, but allows enterprises to select, compare, assess, purchase and sell goods and services to their economic partners via the Internet.

As Dave Birch, a pioneer in e-commerce research, writes, "buying something online involves more than just paying. SSL, SET, BROKAT have begun to standardize the transactional phase of the online shopping process, but e-commerce needs more: buyers need to be able to choose products, sellers need to be able to implement friendly catalogs, both buyers and sellers need to negotiate payment types, receipts, currencies,... Most of the e-commerce experience (both on the buyer side and on the retailer side) is not just buying but creating the conditions for buying (providing an efficient catalogue, providing suitable information, providing a secure server, looking for information,

classifying this information, comparing, looking at a demo, filling forms, and so on).

To achieve this, any enterprise that wants to reap the benefits of e-procurement must have (alone or through subcontractors who centralise the service<sup>5</sup>) a system comprised of at least two key modules:

- An electronic catalogue where the partners can come and select the products they need,
- A secure payment procedure that inspires justified confidence amongst buyers (a procedure that may involve the use of a credit card, an electronic transfer, or even subsequent invoicing on the basis of the data supplied)<sup>6</sup>.

Generally speaking, the effectiveness of these two basic modules is reinforced by the addition of supplementary modules that provide a range of functions:

- partial control of the production chain,
- real-time stock management,
- management of standard or personalised contracts with suppliers<sup>7</sup>,
- management of logistics and interfaces with dispatchers.

However, as the number of enterprises that plan to trade in this way mounts, it rapidly becomes necessary for everyone to provide all partners with standardised information in accordance with a common set of rules capable of rendering the data comprehensible to everyone. It is for this reason that a common information format has to be agreed in advance. It is also the reason why an increasing number of businesses, especially small and medium enterprises, that wish to join in the dance of the third millennium, prefer to supply raw information to subcontractors who organise all information from all partners in a uniform manner<sup>8</sup>. As the number of supplier enterprises that wish to trade over the Internet climbs, a difficulty that arises and becomes ever more acute is “content management”, which involves the management of information

Parmi les *Fortune 1000*, 39% des industriels interrogés regrettent que les logiciels utilisés dans leur entreprise pour la gestion de la supply chain n'ont pas de capacité d'e-commerce; 25% regrettent que leur système n'est pas compatible avec celui des partenaires; et 8% trouvent dommageable le fait que le consommateur externe ne puisse directement et de manière autonome s'approvisionner sur le supply chain app interne. A cet égard, 10% estiment que leur système n'est pas suffisamment sécurisé. (Source: Stephen Cole, 1999 January)

<sup>5</sup> For example, Ariba or CommerceOne.

<sup>6</sup> United States Office of Management and Budget (1999): “In an open network like the Internet, ensuring the security of communications and transactions is challenging.” Hence the necessity of setting up rigorous identification procedures for buyers and sellers and the authentication of buying and selling orders.

<sup>7</sup> E-procurement software must ensure that employees only buy what has been approved by and is listed in the supply contracts. In addition, it must guarantee the transparency and traceability of purchases (who bought what, when, at what price, etc.). This makes it possible to maintain over a longer period the level of savings achieved by changing over to online procurement.

<sup>8</sup> From a strictly technological standpoint, the penetration of the XMS standard contributes greatly to the standardised reading of information in company databases.

on suppliers, articles and prices.

For any enterprise, the ideal situation would be to have a single site carrying all of the ranges of all the suppliers. However, to achieve this level of centralisation, all of the suppliers have to agree on unique standards of presentation, unified product codes, a uniform means of structuring data, etc. Achieving such an agreement between partners soon proves to be impossible because each enterprise belongs to different supply “networks” all with their own particular requirements, not necessarily compatible with each other. A petrochemical company can certainly find a way of exchanging and formatting its product information with the suppliers of the chemical products it needs for its industrial processes. However, this format will not necessarily suit its suppliers of office computer systems who work mainly with administrations or research centres with quite different requirements, and so on.

The proliferation of formats and technologies makes network growth and achieving a critical mass of buyers and suppliers more problematic. Similarly, establishing communities of buyers is hindered by this fragmentation. In fact, there is only one solution to this problem: the adoption of a unification strategy capable of bringing together the largest possible number of participants in a network with coherent features on which uniform data is exchanged.

As the Aberdeen Group puts it, “three prevailing content and transaction management strategies have been promoted by Internet Procurement providers in order to aggregate as many users as possible”. Even though a historical review of these three models shows that they succeeded each other over a period of time (both in terms of their creation and their deployment in companies), we note that in practice there is considerable overlapping, generally in line with sectors of activity, the level of IT use and the degree of familiarity with the Net.

1. **Many-to-many communities:** Originally, this was an attempt to aggregate content in integrated catalogues from multiple suppliers for multiple buyers. In order to allow search and comparison, these catalogues had to adopt the same form and structure and a unique classification system and to subscribe to the same metadata matrix. In brief, it reproduced on the Internet all of the negative features that had impeded the development of EDI for almost 30 years. “For transactions and other business communications, these many-to-many buying communities require participants to negotiate and manage authentication and communication protocols for transactions with each unique trading partner, increasing costs for all participants and limiting the scalability of the community.” These problems finally forced enterprises to limit the number of communities with which they did business because each community could opt for a different type of communication protocol. This

reduced the possibility of enterprises choosing and obtaining the best prices for their purchases.

In summary:

- Automation of communications and transactions between organisations
- An attempt to aggregate content by replication and integration of content in a single catalogue format (this has always represented the biggest obstacle because companies were not necessarily prepared to standardise different catalogues)
- Internal hosting of catalogues
- Each buyer could go and obtain supplies on the supplier's web site (but this system does not guarantee comparability of prices between different suppliers in all cases because standardisation of the catalogue is not complete)

2. **Content-hub-based communities:** The system is based on creating a single system that centralises all content management activities and communications. Under this system, a third party takes charge of the centralising system administration (re-intermediation) and assumes responsibility for updating the central catalogue where the information and data from various suppliers is compiled. The system administrator acts as a broker who makes the transaction possible by providing a hub where the participants in the buying community converge. "However, content hubs are ultimately limited by their ability to acquire industry specific content and domain expertise for multiple vertical industries."

To summarise:

- Creation of a central "depot" for all content and transactions
- Management of content, catalogues and transactions delegated to an external third party
- The method of structuring data falls under the responsibility of the external party who must also ensure the validity of the data supplied
- The members of the community of buyers and sellers often come from a vertical sector for which the external party manages the virtual market.

3. **Single-standard-based communities:** The adoption of a single standard for e-commerce would provide an ideal situation in which many institutions could work (CommerceNet, W3C, etc.). The aim is to unify the communications, transaction, payment and content protocols. However, there is nothing to say that such efforts will lead to the creation of a single standard! Moreover, if a new standard claiming universality is adopted, there is a high risk for the early adopters because this standard may not attract the expected membership and those who have chosen it will be cut

off from other enterprises. In this case, the critical mass problem is particularly important.

Recently, however, the world of e-procurement saw the appearance of a fourth solution, the **virtual trading network**, which attempts to integrate into a single solution the strengths of the three previous solutions.

However, in order to develop, these trading networks require the consolidation of four main elements:

- Advanced communication management (handling the information flow, networks, integration of software between partners)
- A precise and careful study of the feasibility of the transaction (rendering the transaction possible: validity of the information sent in both directions, security, commitment to deliver)
- Excellent time management of the production chain (production planning and customisation of the product if necessary)
- Precise organisation of logistics (planning and handling of distribution)

Companies only really benefit from the positive effects of e-procurement when there are sufficient numbers of them who adopt this pattern of trade. The creation of such a favourable economic environment assumes that the usual chicken and egg situation is overcome. Therefore, in order to achieve an initial critical mass big enough to attract other companies to join in the dance, it is necessary to try to persuade major companies with large purchasing volumes to migrate to e-procurement. As part of this process, suppliers have every interest in making themselves available online, thereby attracting other potential buyers, and so on<sup>9</sup>.

The “trading network” effect can even be used to enhance the effectiveness of the traditional methods of e-procurement (such as buying from an electronic catalogue, e-commerce, auctions, etc). In addition, enterprises that take part have everything to gain because the value of the network increases more than proportionally each time a new player enters the network of partners. Metcalfe’s law therefore applies: the value of a business-to-business e-commerce network is equal to the square (and not the sum) of the number of partners trading on it.

The difficulty of creating central digital catalogues has therefore stimulated the birth of intermediaries who gather the information from different suppliers and construct unified e-procurement catalogues in particular sectors. The company Ariba is prominent in this new intermediary market, supplying procurement solutions and a buying network. BuySite/MarketSite, SAP Marketplace and EDI-TIE also offer different standardised intermediation solutions.

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<sup>9</sup> Example: the case of the FIAT group and its suppliers. The latter were very swiftly pushed into integrating their systems to the web under pressure from FIAT, which wanted to rationalise and optimise its procurement procedures.

Far from strangling economic activity by rendering intermediaries obsolete, on the contrary e-procurement gives rise to a new form of re-intermediation. As Varda Lief points out (March 1999), "Ariba.com will connect suppliers with Ariba corporate intranet customers. Ariba is moving beyond hosting catalogs on corporate intranets and linking to suppliers' extranets by allowing suppliers to index their wares on Ariba.com. By registering their preferred method of receiving documents on Ariba.com, suppliers can avoid having to connect individually with each Ariba user."

#### IV. The various buying and selling models

From a business point of view, if the final objective is to reduce the cost of purchasing procedures and to gain time, there are several possible approaches:

- **Aggregators:** enterprises that need the same product (for example, a certain computer model, or a specific type of photocopier paper) band together to make a single purchase from the catalogue of a vendor who can lower his price when the quantity ordered is high. A critical mass of buyers is therefore required.
- **Auctions:** Enterprises frequently use this method when they wish to liquidate surpluses and sell them to a group of potential buyers competing with each other. In this case, buyers can expect to buy at below the catalogue price.
- **Exchanges:** Still quite rare in the European digital economy, this mechanism is used to create markets on the Internet where enterprises who already collaborate are prepared to exchange goods and services. Note that enterprises use this purchasing model to make last minute or urgent purchases.

As Forrester Research would have it (Varda Lief, 1999 February), "aggregators, auctions, and exchanges play different roles in a business marketplace. They reduce dispersion, facilitate liquidation, or create industry-wide spot pricing. (...) While aggregators, auctions, and exchanges are emerging as part of the general business trade landscape, they will proliferate within vertical industry markets."

Once again, it must be stressed that e-procurement does not fully come into its own unless it is adopted by a large number of enterprises. As we have previously shown in this report, the full force of Metcalfe's law applies in this case: the value of a business-to-business e-commerce network is equal to the square (and not the sum) of the number of partners. E-Procurement will therefore represent a financially interesting solution not so much when the investment to be made by the enterprise has subsequently diminished (because it is already quite low), but when the additional financial costs associated with

communications and content management have been reduced to the point of supporting and even encouraging the participation of a critical mass of buyers and sellers. In fact, the core problem is precisely that of achieving, in as short a time as possible, a critical mass of participants who can ensure the proper functioning of the system. One of the prerequisites for achieving this objective is that enterprises should be offered a single point of entry to the market for supplies and sales (goods and services) in order to avoid any dispersal or any time lost searching for the supplier or buyer<sup>10</sup>.

A trading effect conducive to a mass migration to e-procurement will only be achieved if the barriers to entry are lowered in order to attract a large number of new enterprises. The Aberdeen Group believes that four conditions must be satisfied to facilitate the entry of enterprises into a trading network:

- *Scalability*: the network must be constructed on a solid technological basis that can be adapted to the requirements of both small and large companies. In addition, when a network enterprise expands, the technology must be able to respond to the new requirements without breaking down (investment protection)
- *Ease of integration*: the network must be able to support a large number of buyers and sellers, whatever the degree of technological sophistication of each player. The network must not exclude any platform, communication protocol, etc. It must offer each enterprise the possibility of entry without having to go through a costly adaptation phase.
- *Well-defined e-commerce standard*: a precise and clear definition of standards and protocols will make it easier to persuade enterprises to enter into a digital environment. The interaction between systems must flow freely both within the network and between enterprises and the exterior.
- *Rapid adoption and use*: because the value of an e-procurement network is equal to the square of the number of participants, everything possible must be done to facilitate the entry of new members (reduction of technological barriers, standardisation of protocols, visibility of each member, etc.).

On this subject, we note that the dissemination of XML is in the process of changing the e-procurement world because this technology provides an open, public, powerful and standardised solution. The development and adoption of XML will without doubt facilitate the expansion of e-procurement because this language makes it possible to construct "a common business framework (...) that

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<sup>10</sup> In this context, Ariba seems to occupy a dominant position because the solution offers enterprises a single access point to a whole range of services from content supply to communications and transaction management. In addition, the Ariba solution is based on cXML (an open and public standard), which allows each enterprise to interact with and receive services from the Ariba Network platform.

can provide a structured mechanism for system-to-system communications and transactions across organizational boundaries” (Aberdeen Group).

In the words of the United States Office of Management and Budget (1999): “XML offers a way to tag information such that users can search across different web-based catalog locations and obtain consistent search results. By specifying the structure of the information contained in an Internet site, XML facilitates electronic commerce by allowing buyers to search for and compare items in a consistent manner.”

To overcome the critical mass effect it is therefore necessary to lower barriers to entry in order to attract large numbers of new enterprises. However, in order to do so, the inspired vision of the public authorities or the isolated desire of avant-garde entrepreneurs is not enough. Naturally, the necessary conditions must be satisfied, but a key condition for renewing the economic trading channels with which Europe is already doing business on a daily basis is for entrepreneurs to look beyond their inward-looking vision focusing on their own activities.

American government experts (United States Office of Management and Budget, 1999) quite rightly suggest adopting a strategic plan to facilitate the digitisation of purchasing procedures on the part of enterprises and administrations. Three main avenues are given priority:

- Encouraging partnerships (both within the administration and between it and private industry) in order to offer common shared procedures;
- Integrating high volumes of activity at both end-to-end procurement and payment levels (by using purchasing cards, electronic catalogues, etc.);
- Re-engineering the basic buying and selling functions using the new opportunities offered by the latest technologies, without which the end-to-end use of electronic commerce services would simply not be practicable.

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