

Uniting the

XML

information society



Survival of the fastest

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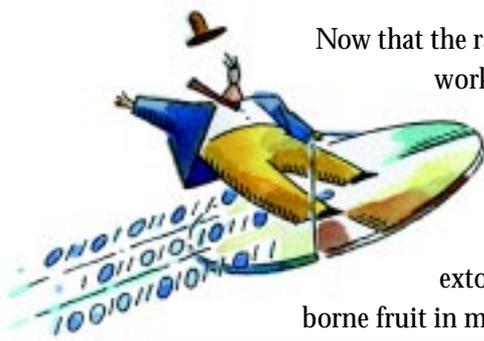
More detailed information about XML is available at our Web site: www.softwareag.com. You are also invited to view our landmark Web conference at www.xml4e-business.com.

In the past the winner was determined by size . . . today it's speed that counts

Now it is no longer the case that large corporations are the only ones able to access the distributed base of global knowledge and exchange data with the aid of hugely expensive mainframe technology; today this can be done using relatively inexpensive systems running under Windows or Unix, that is, systems available to everyone.

This is precisely the reason why industry is exceedingly interested in getting to grips with and making full use of what is now a popular, even simpler and cheaper-to-use Internet infrastructure. With this infrastructure, you are able to be with your customers quicker than the competition, while at the same time reducing unnecessary costs on proprietary networking solutions.

One thing has become clearer in the context of the ever increasing number of corporate takeovers: The only long-term survivors will be those companies that, in the opinion of the customer, have the competitive edge, both technologically and with respect to the simplicity of the application, and at the same time, are able to considerably lower the costs that accrue when providing their services and products.



Now that the rapid developments in network, computer and software technology make it possible to connect heterogeneous systems to one another with relative ease, the highly extolled e-Business sector also has borne fruit in many places and has greatly increased corporate effectiveness.

Without B2B, there's no B2C

Electronic business is more than just e-commerce!

Transactions that are handled electronically and that support the corporate business process can be viewed as e-Business. Such transactions can take place either within companies, such as between departments, teams or individual members of staff, or even across company boundaries, such as between business partners.

On the business-to-consumer, (B2C), level, placing orders via the Internet is now very common. But, it's only when the entire purchasing and delivery functions of all the companies involved in the manufacturing and distribution process are handled electronically that we truly speak of electronic business. Perhaps the acronym would be B2C2B2B!

As a rule, electronic business transactions are handled on the basis of Internet technologies and Web-capable applications.



Optimum influence of electronic business processes on corporate operating results will be achieved more quickly if the data from existing database systems and applications is integrated into the new electronic business processes and made available over the Web. In this way, today's stocks of old data, that is, past investments, can continue to be used effectively.

It is clear that automating many separate, interlinked business processes across the entire value-added chain results in a multitude of speed-related advantages and cost savings that every company hopes for from electronic business processes.

We do indeed already have quite powerful computers and networks today, but only through the introduction of XML has it become possible to put the exchange of data and information on a uniform, standardized basis that is totally independent of the platforms and applications used.

This development was absolutely essential, since the actual problem today no longer lies with the capability of the technology but far more with the limited capability of a global army of programmers. Until now, these people have had to waste a great deal of energy trying to force different, heterogeneous, and for the most part incompatible, systems to communicate with one another by means of specially developed interfaces and protocols.



It comes, therefore, as no surprise that a study conducted by the Gartner Group has found that “today, companies typically spend between 35% and 40% of their annual IT budget on developing, maintaining and improving new programs, the sole purpose of which is to ensure the smooth exchange of information between databases and IT applications.”

Furthermore, Deborah Hess of The Gartner Group recommends “the use of XML technology for storing and integrating data because this enables the costs of intra- and inter-company data exchange to be reduced to such a degree that companies could immediately and without any problems be in a position to introduce efficient electronic business processes.”

In order to be able to satisfy the demands made by your customers in an even quicker, more comprehensible and ubiquitous manner, you will now scarcely be able to avoid getting involved in electronic business.

Electronic business and its restrictions

For managers who have decided to introduce e-Business at their company, it's important to know that they will come up against certain obstacles and restrictions. Essentially, these are:

- ❖ Incompatible data formats
- ❖ Customized information exchange
- ❖ Management of distributed business data
- ❖ Inadequate Internet solutions

Let us now take a brief look at each of these aspects.

Incompatible data formats

Since there has been no flexible and universally recognized data interchange format so far, it's inevitable that a large number of incompatible and proprietary data formats have to be converted to one another. Today, for instance, placing orders with manufacturers is performed in various ways, such as by mail, fax, phone, or even voice mail recorded on answering machines. The information transmitted in these ways can be of differing types. One purchaser, for example, only specifies the customer's reference number instead of the full address. Moreover, the orders could be written in different languages or have different layouts.



The method currently being used to master this data chaos after receiving new orders is to manually enter the data of each and every order in an order processing system. This, however, does not satisfy the desired degree of automation one would like to achieve for a manufacturer-customer relationship based on electronic business. This necessitates a standardized, uniform data format such as XML, which enables the transmission, utilization and storage of data over the Internet and across company and state boundaries.

Customized information exchange

Even if two business partners have come to a joint agreement as to how each of them can access the data of the other, implementation of this agreement is more often than not an arduous process. The reasons for this are to be found in the different data formats, the heterogeneous IT infrastructures, incompatible security systems and the large number of “home-made” special solutions. And, the solutions found to permit mutual access to data will always be one-off solutions if interweaving of the business processes is not conducted using a platform- and application-independent meta language such as XML.



With the advent of XML technology, all the different data types and pieces of information used in the transactions can be brought in line with one another.

Management of distributed business data

The majority of companies interested in going into electronic business have large volumes of data that are stored in different formats and at different locations. Access to and the ability to search for specific details are often restricted by the actual data format itself, by the type of database being used or by the operating system environment. Furthermore, companies today are faced with the decision as to how and where they should store new incoming data.

A painful discovery that already has been made at many places in the past is that without a uniform database concept, you quickly put yourself in danger of fragmenting your data and, in the long term, losing the original context in which the pieces of data once stood..

With the aid of XML and a solid, coordinated database concept, it now becomes relatively simple to access distributed data with differing structures. The system has to be set up to store all possible date types and formats itself and to integrate data from existing external database systems and applications by means of mapping tables and to retrieve them in a standardized manner. That's what the analysts at IDC call a "virtual DBMS."

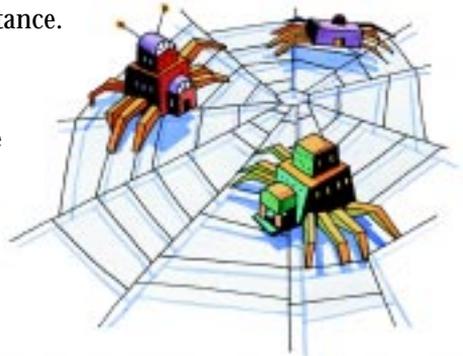


Inadequate Internet solutions

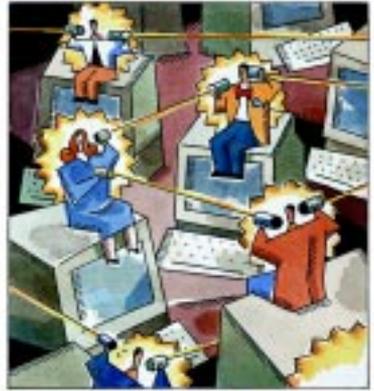
Despite the obstacles cited above, many companies have recognized the enormous potential of introducing electronic business processes and have decided to actively eliminate their problems with complex and expensive scripting and gateway technologies (e.g. CGI). XML greatly simplifies the task of gaining access to distributed data. Gateways are programmed to read data from different storage media, files and databases in order to process them together.

These solutions are error-prone, unreliable, difficult to scale and extremely complicated and costly to maintain—all in all, ill-equipped to cope with the growing volumes of data to be faced in the future. Scripts are equally as bad because each script has been developed for a specific task on the target system in question and therefore also requires a very high level of maintenance. Concentrating the knowledge required for this, with just a few specialists, brings about an additional commercial risk, which you can reduce to a considerable degree by employing common standards such as XML for instance.

One thing does become evident: Those Internet solutions created and put to use in the past will, in the short and medium term, certainly not be seen as the first choice for guaranteeing reliability, maximum performance and scalability for electronic business. In anticipation of the massive increase in business transactions that will be taking place in the near future, solutions such as CGI scripts are even deemed unworkable in the long term.



Immediately and everywhere access—that's what today's information society demands



The people in today's information society have for a long time now been used to getting all the information they want in the quickest way possible to come to immediate decisions. The need to be geared to this requirement will be all the more important for companies as it becomes easier to access information of all kinds at any time and from anywhere in the world.

A business that does not offer real-time access to its services and/or product documentation (e.g. by means of a WAP portal or a Web site) has already dropped out of the race for the patronage of potential customers and for this reason, has practically no chance of surviving in the global market alongside those companies that offer these possibilities.

The Internet will continue to be the driving force behind the ever more rapid expansion of e-Commerce. Consequently, only those enterprises that realize the necessity of being able to quickly access internal and external data, to effectively integrate and manage this data and to make it available within the company and externally over the Web will be able to maintain and extend their lead over their rivals.

Therefore, companies will create ideal conditions for ensuring their own survival in the age of the Internet if they begin now to orientate their business processes to e-Business. Only then will they be able to respond to the future demands in today's fast-moving, global market.

Whoever carries this through systematically will very probably be rewarded with excellent, way-above-average growth prospects.



XML is simple and open—an absolute “must” in the networked information society

An important and radical change has begun in the information society that has for the most part gone unnoticed by the general public: The XML data format is text-based and already represents a universal, platform-independent means of transport for information of all types. It has already been extolled by many as the ASCII of the third millennium because it is easy to read both for humans and “machines.” This makes it a potential solution for simplifying the exchange of electronic documents over the Internet.

XML is an easy-to-learn, open standard that is in principle put to good use wherever the job at hand is to put information into some sort of useful order. In addition to being used for transferring business documents, scientific and commercially used databases are also predestined for XML, as is the entire chaotic knowledge network that has arisen with the World Wide Web.

With the aid of the tags introduced to describe the contents, it is now possible to search for information far more successfully than before in addition to full-text searches, XML supports the querying of specific terms from within the context and in this way enables an enormous improvement in the search processes employed over the Internet.

As a rule, searching for data in specially developed XML databases, which can store XML documents in their original hierarchical structure, leads to the search results being displayed far more quickly than with other database types. The simple reason for this is that real XML databases can do without a complex conversion process that has to be run through with relational database systems not only for indexed saving but also every time search results are returned in XML format.

Far more important than the slowness of displaying results, however, is the amount of work involved with relational systems before XML document data with a large number of hierarchical levels can be saved in the first place or its structure changed after subsequent updates. It is easy to imagine the entire database structure having to be completely redefined before the changes can be used. Such a redefinition is not necessary with pure XML storage in database systems designed for this purpose. Masses of time and money can be saved in this way.

To satisfy these variable requirements of electronic business, great value was placed during the development of the XML standard on ensuring that the standard is extensible—a point that in the end also has been reflected in the name given to the standard. This should enable unused document elements to be deleted in the simplest way possible and new elements to be added simply to the documents transmitted or stored, without, for example, machine-to-machine communication coming to a standstill.



When speed counts, go native

Whoooooie . . . that first dip on the roller coaster is a doozie! But, there are a few more ups-and-downs before you're back on solid ground. Once you've made the decision to move to XML technology, take the time to understand the difference between data management products that are fully optimized for XML versus those that merely add an XML-translation layer on top of an existing data management application.

Native XML products not only have a significant advantage in terms of inherent speed, they're also built on a sturdier internal architecture, less prone to broken links, more scalable and interoperable. Speed counts, and native XML is, by nature, faster than XML-enabled.





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Software AG, Inc., based in Darmstadt, Germany, is one of the largest and most highly respected system software companies in the world and the premier provider of database management technology. With products and services in use globally, our focus is on mission-critical electronic business applications linking heterogeneous platforms, and our commitment to and support for open-standard XML technology is absolute.

Software AG is a founding member and active participant in the World Wide Web Consortium (W3C) and the Organization for the Advancement of Structured Information Standards (OASIS).

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