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Internet revolution and new economy

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Virtual marketplaces: big is beautiful

- Companies believe that the use of virtual marketplaces – i.e. internet trading platforms – will be **highly significant** going forward. Surveys of German companies found that 68% intend to use virtual marketplaces in 2003. By 2004, approximately 30-50% of total online sales will probably be done via public market places.
- Only a **few marketplaces in a given sector will be able to prevail**. This is underpinned by the fact that independent operators need to attract a large number of transactions to their sites so they can finance themselves through fees. However, companies will be able to participate – depending on their field of activity and the sector they belong to – in several different marketplaces with different functions.
- **Public marketplaces** run by independent operators marked the inception of virtual marketplaces. In the future they are likely to play a major role especially when companies go about sourcing low-value or standardised goods and commodities.
- **Industry-specific marketplaces** (ISMs) have changed the playing field in the affected sectors. They are typically set up by competitors within a sector. **Cooperation** between the founding companies is one of the key arguments favouring their success. But cooperation and the related size of the marketplace also harbour the risk that the companies involved will **consolidate their (purchasing) power**.
- **Private networks** focus mainly on the element of **cooperation** between suppliers and buyers, with the possibility of different links in the value chain being organised in the form of a private trading network. Alternatives range from the provision of real-time information on inventories, coordinated planning and forecast processes, up to joint product development.
- So far, the biggest obstacle to the spread of marketplaces is the reluctance of companies to participate in virtual trading platforms in the first place, since they fear that their margins will be eroded further. However, the **reorganisation of enterprises' internal processes** also mounts major challenges. The greater the emphasis on the element of cooperation, the greater the requirements to make a company's existing systems compatible with the systems of the marketplaces or other companies.

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Virtual marketplaces: big is beautiful	October 17, 2001
Focus on the new economy and productivity	October 1, 2001
The Digital Divide - focus on Asia	August 15, 2001
Internet trends in Japan: mobile business as a main driving force	July 6, 2001
Software houses and IT services - growth sectors in the IT business	May 18, 2001
Legal framework conditions for e-commerce: much ado about nothing?	May 17, 2001
E-banking: competition from non and near-banks	April 11, 2001
Electronic money - the payment instrument of the future?	March 26, 2001
Embedded systems - An (inconspicuous) key technology in the ascendancy	February 20, 2001
e-Real Estate The Real Estate Sector in the Internet Age	January 16, 2001
Emerging Asia: From hardware base to e-commerce space?	November 7, 2000
M-commerce: mega business or Mickey Mouse?	October 18, 2000
Finance portals: opportunities for customers and banks The moneyshef report on selling financial services online	October 9, 2000
Sweden and Finland: Pioneers of the new economy in Europe?	October 6, 2000
The internet - a new general purpose technology?	August 15, 2000
Microeconomic aspects of the internet economy	August 9, 2000
„New Economy“ in the USA: Fact or fiction?	July 5, 2000
Regional starting positions in global e-competition	May 22, 2000
E-Commerce: Catalyst for structural change in Germany	April 18, 2000

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Virtual marketplaces: big is beautiful

With the collapse of the high-tech stock markets, observers have started to view the prospects for e-commerce in a more critical light. The business models of many start-ups have burst like bubbles. This also holds for numerous virtual marketplaces. Not only in the equity markets is uncertainty widespread. Forecasts of how B2B commerce will develop in quantitative and qualitative terms are also fraught with uncertainty. This is underscored by the expectations for B2B sales as published by various market research institutes. Jupiter Research forecasts B2B sales in Western Europe to hit EUR 1,805 bn in 2004, Forrester expects a figure of USD 1,410 bn, but eMarketer no more than USD 797 bn. Assuming an exchange rate near parity, the most optimistic forecast is more than double the most conservative one.

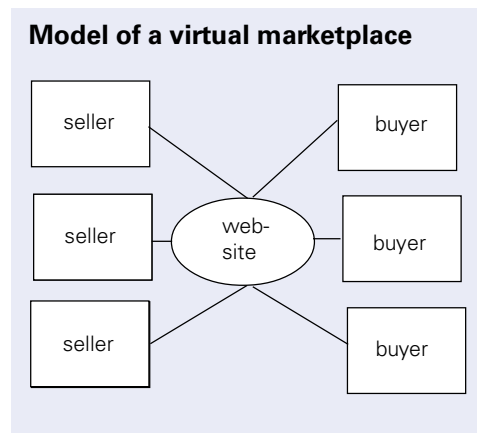
Furthermore, the number and form of virtual intermediaries are subject to a constant process of change. Generally, companies believe that the use of virtual marketplaces will be highly significant going forward. A virtual marketplace is a website where business partners, e.g. suppliers and buyers of goods, come together to conduct transactions either partly or completely over the internet. Goods, information, other services, and tools can be offered in this way.

A survey conducted by BDA and KPMG in November 2000 found that 68% of the German companies polled say they intend to use virtual marketplaces in 2003, while only 19% actually do so at present. The forms of cooperation linking companies on the internet are making steady advances. Independent operators are currently the dominant virtual-market players. Other forms of business organisation are being added – such as private networks and industry-specific marketplaces – which will probably exist side by side in future. This is suggested both by the different objectives pursued by companies when they enter a virtual marketplace and by the specific structures of individual industries. The type and character of online business relations between two companies (e.g. degree of confidentiality) are no small matters when choosing a marketplace. This report analyses the development of virtual markets and the conditions for succeeding there.

What are virtual marketplaces needed for?

One of the structural consequences most frequently attributed to the internet is the elimination of intermediaries. People say they are no longer needed since producer and consumer can contact each other directly through the web (a phenomenon referred to as disintermediation). The question, though, is whether direct contact between two potential transaction partners is always an efficient way of establishing business relations.

- Thanks to the internet, the volume of information available to individual companies has exploded. The internet does reduce the cost of procuring information, as it has in principle become more easily accessible. However, the information at one's disposal has grown in turn, so the costs of selection and verification increase, rising exponentially with the volume of information available.
- From a company's vantage point, nothing can be ascertained about an unfamiliar, potential business partner's conduct, reliability or product quality when initial contact is made through a website. So generally there is a risk that the company will be confronted with dishonest business practices (asymmetrical information).



Virtual intermediaries can lessen the costs of information selection and thus information asymmetries. For example, it makes sense for a company wanting to purchase a particular product in a given quality and quantity (e.g. 20 boxes of copier paper, 80 g/m²) to call upon a virtual middleman specialised in sourcing office supplies. The company incurs considerable costs for information selection if it runs searches on numerous websites itself (peer-to-peer model), whereas the electronic marketplace already has a sensible array of information (e.g. it can highlight the cheapest offer for the volume of paper required). Virtual marketplaces thus have the key function of clearing supply and demand on the internet for a certain good.

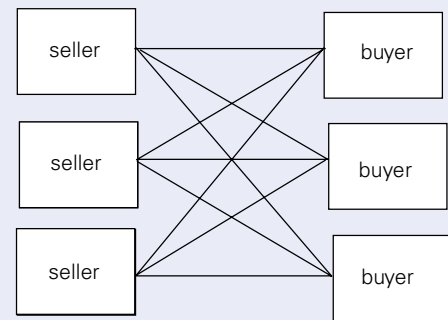
But their operators can also keep tabs on the participating suppliers, e.g. check their standing and the quality of the products offered. Freemarkets.com, for example, reviews the bidders who participate in their auctions. The intermediary can award a seal of quality to the companies participating in the marketplace (take, for example, in the business model “electronic catalogue”) if the products checked meet a given standard. Alternatively, buyers who have previously purchased products from the company can give an assessment of their quality by online vote. This is important especially for small and medium-sized suppliers who – with an isolated, company-specific web presence – can only build up a wide reputation at considerable marketing expense. The selection of a supplier through a marketplace operator – possibly on the back of a seal of quality – reduces the information asymmetry.

The upshot is that relatively high costs of information selection and information asymmetries between potential business partners encourage re-intermediation on the internet, i.e. a re-introduction of mediators as in the form of virtual marketplaces. This is mainly relevant for strongly fragmented markets. There, it is possible to reflect existing (long-term) business relationships (wholesale trade, for instance) as well as coordinate one-off transactions.

Companies’ “e-readiness” influences development of virtual marketplaces

How virtual marketplaces develop depends on the stage of “e-readiness” reached by the companies involved. Companies frequently begin their internet activities by making information available online or shifting simple transactions (procurement, sales) and services (e.g. invoicing) to the web. According to the study done by KPMG and BDA these activities are among the most-used online applications in Germany, suggesting that the development of e-business is likely still in its infancy in that country. Boston Consulting believes that company-specific websites that concentrate on procurement or sales will initially tend to dominate in the “e-business evolution.” By 2004, though, approximately 30-50% of total online sales will probably be performed via public virtual marketplaces. However, more complex applications will require comprehensive management concepts. These include both supply chain management (SCM) and customer relationship management (CRM) as well as cooperation between different firms on product development or planning processes in virtual project rooms. Correspondingly, the number of virtual marketplaces which organise these more complex processes is still fairly low.

Peer-to-peer model



Reasons motivating companies to participate in virtual marketplaces very diverse

As documented by several surveys, various factors prompt companies to link up with virtual marketplaces. However, these factors are not always given equal priority in empirical studies. Generally speaking, companies are mainly seeking to reduce transaction costs and raise process efficiency. The desire to shorten procurement times and reduce inventories is highly significant. They frequently say that their goal is to save money on the cost of buying intermediate products, too. A final objective on the companies' priority lists is to find new suppliers and deepen relations with current partners.

The different motives of the suppliers are reflected in the specific form of online marketplace chosen. For example, when a company seeks to lock in lower buying prices or reduced procurement times it is more likely to look for a transaction-oriented public or industry-specific marketplace which specialises in, say, auctions or which works on the principle of an exchange (see box: Business models). By contrast, the desire to intensify business partnerships in order to achieve competitive advantages will probably prompt companies to look for cooperative solutions, as in the form of private trading networks.

Public marketplaces run by independent operators got the ball rolling

Public marketplaces run by independent operators – e.g. Free-markets.com – are currently the dominant form of virtual marketplace (for a classification of marketplaces, see box). Usually the initiators are start-ups or a specific independent firm (as opposed to industry-specific

Business models

The business models of virtual marketplaces can be differentiated in terms of functionality.

In the case of aggregated product catalogues, several suppliers join forces to offer similar or complementary products in an **electronic catalogue**, as a rule via a marketplace operator. With this business model, the demand side benefits from pronounced market transparency and good possibilities for comparison. The supply side sees a bundling of demand and saves costs by shifting sales to the virtual market.

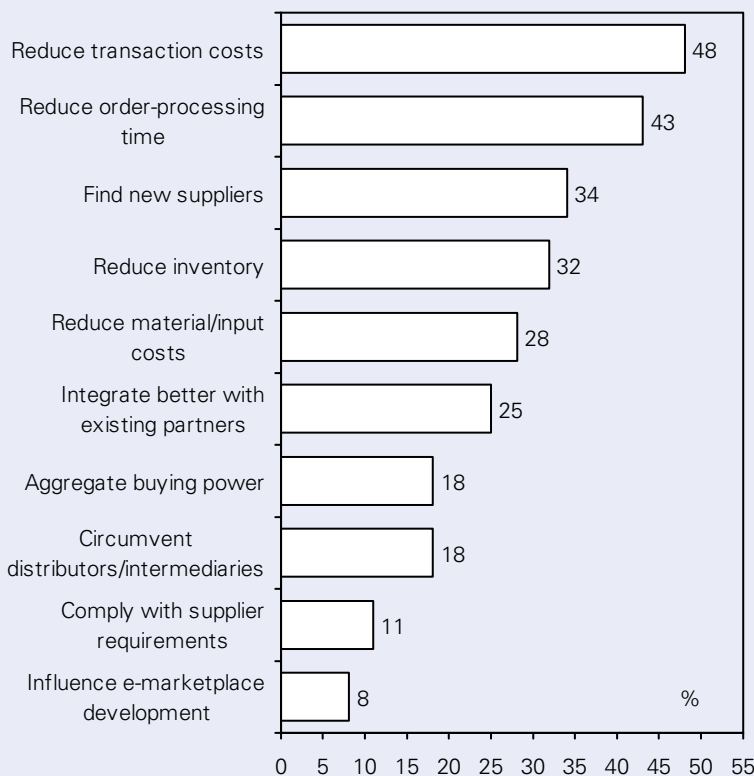
Virtual **exchanges** bring together supply and demand (anonymously). Buyers state certain demands with respect to product features and price. The marketplace operator then matches them against the corresponding supply. Buyers often obtain products at a cheaper price than through traditional channels; suppliers have a favourable opportunity to sell off residual inventories.

Auctions feature dynamic, open pricing procedures. Product descriptions and conditions are known from the outset, so the price is the sole factor to determine who gets the nod.

Private versus public marketplaces

Marketplaces can be publicly accessible, i.e. open to potential new business partners (e.g. Covisint, Omnexus). Usually, sector consortia or independent operators are at the core of such a market. By contrast, private marketplaces are initiated by a single company and are only accessible to the business partners of this company (e.g. Dell, Cisco).

Why buyers are joining virtual marketplaces



Source: BCG, 2000

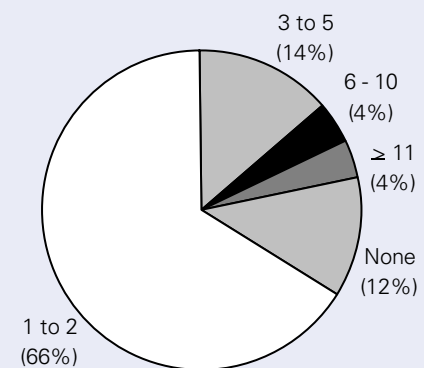
consortia). Jupiter Research estimates that in April 2001 there were around 500 public marketplaces in Europe; at the time, 73% of them were less than one year old. In most cases, independent marketplaces focus primarily on the settlement of transactions. A business survey has found that companies are planning to widen the scope of virtual trading in relatively low-value or standardised intermediate products and commodities. Precisely the area of low-value goods is where nearly half the companies surveyed intend a full shift of procurement to virtual marketplaces by 2002. By contrast, companies are more reserved about higher-quality goods, which are usually less standardised. Virtual marketplaces will probably assume an only supplemental function in this regard in the future, too.

The growing significance of virtual marketplaces with the shifting of the sourcing process to the internet will, however, probably be flanked by a major consolidation process. Jupiter estimates that 80% of the current sites will have disappeared by 2004. This assessment was made on the basis of the general problem that faces virtual marketplaces. Especially public marketplaces which today finance themselves largely on the back of transaction fees need to have high turnover, i.e. achieve critical mass, in order to amortise their investment expenditures. In the light of a given sector size and number of transactions, marketplaces have to make use of the network effects that are typical of the internet: each additional participant in a public marketplace makes it more attractive to the users already on board. At the same time, a crucial factor is to secure market shares early on because most companies only use one or two marketplaces for, say, the procurement of indirect goods.

Independent operators can, as a rule, only achieve a critical mass of participants and thus a **sufficiently large transaction volume** if they integrate one of the sector's leading companies. This holds above all in sectors with numerous small and medium-sized enterprises (SMEs), especially since SMEs usually tend to take a conservative approach to online business. Another obstacle to online marketplaces is that companies often use the internet to compare prices, but then conduct the transaction via traditional channels. As a consequence, the basic problem facing public marketplaces is a shortage of liquidity. Jupiter Research estimates that approximately 60% of the public independent marketplaces register sales of less than EUR 1 m per month. At the same time, the fall in fees for virtual-marketplace transactions feeds through negatively to earnings. For example, the fees have dropped from 2-8% of transaction volume per year in the early stage to 0.5-2% (end-2000). Boston Consulting believes that up to 2002 the charges will continue to fall, to less than 0.5%¹. These arguments point to a consolidation of the number of independent marketplaces, as already seen with start-ups since the crash of the high-tech stock markets.

¹ The more fragmented the market in which they operate and the more they assume the role of market maker (e.g. if liquidity is low), the higher the fees virtual marketplaces can charge.

How many virtual marketplaces for indirect materials do you expect to use in 2000?



Source: Forrester Research

Horizontal and vertical marketplaces

Virtual marketplaces are classified according to their orientation. Vertical marketplaces are specialised in a specific sector and concentrate on trading in the goods that represent the core competence of that sector. Examples include e-Steel for steel, or Chemdex for the chemicals industry. Horizontal marketplaces overarch sector borders. They frequently offer MRO (maintenance, repair, operation) goods or deal in commodities (e.g. energy) that are required in numerous sectors. Examples include Emaro and Mercateo, marketplaces for the procurement of office supplies and IT goods.

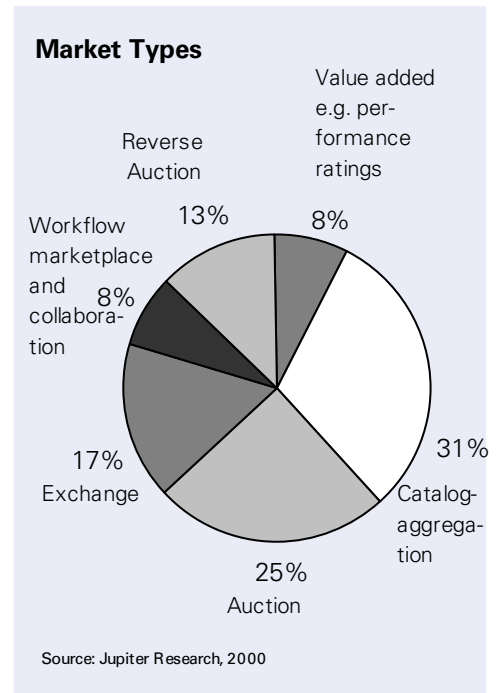
Industry-specific marketplaces: liquidity is assured

The emergence of industry-specific marketplaces (ISMs) which dominate whole industries will also entail new competition for independent operators. ISMs are initiated by a consortium of large companies from the same sector and usually maintained as a separate legal entity². Thus they are a typical example of how the barriers between the internet and the old economy have fallen. Often, not only the big users band together in institutional form, but also suppliers are integrated. One of the best-known examples is Covisint, a virtual marketplace in which Ford, General Motors, DaimlerChrysler, Nissan and Renault participate.

Generally, industry-specific marketplaces reflect already existing relations between companies, and suppliers are better integrated. ISMs focus as a rule on trading in merchandise goods (sourcing or sale of intermediate products or commodities) and services. In many cases – unlike numerous independent marketplaces – ISMs concentrate on transactions with goods which represent the core competence of a company and as such tend to be less standardised and rather complex in nature. The chief objective of ISMs, according to a survey, is to bundle procurement and reduce inefficiencies in the **supply chain** by, for instance, directly linking suppliers and customers. So far, however, the underlying business models have been largely similar to those of independent marketplaces: the auction and exchange principles dominate along with electronic catalogue offers (see chart). On the next step of an ISM's development, suppliers ideally receive online information on their customer's inventory levels so they can adjust their production accordingly and an order is triggered automatically. Shorter order-to-invoice times and dramatically lower error ratios mark the advantages of such models; however, this type of model will probably not see full realisation until some time in the future. Currently, only 8% of the ISMs surveyed have said they will work together this way. Furthermore, industry-specific marketplaces can help contribute towards the setting of **standards**. These include, for instance, uniform product classifications, as well as the use of standard formats for documents and tools.

The attempt to secure an adequate supply of liquidity on a virtual marketplace is a key argument for the establishment of industry-specific marketplaces. In contrast to virtual sites run by independent operators, ISMs are able to defuse the liquidity problem since the participating companies do their transactions via the platform. This means that the transaction volume can be estimated relatively well beforehand. A certain degree of concentration in a sector particularly encourages the emergence of an industry-specific marketplace, since cooperation among a few companies alone gives rise to a relatively large number of transactions and thus sufficient liquidity.

ISMs have changed the playing field in the affected sectors. They are typically set up by competitors within a sector. **Cooperation** is one of the key arguments favouring their success. But cooperation and the related size of the marketplace also harbour the risk that customers will **concentrate their (purchasing) power and exploit it**. If several customers bundle their purchasing via an ISM, the producers who have



² This secures the independence of the virtual marketplaces from the participating companies. This conceptual element was taken on by independent marketplaces that consider themselves intermediaries in their own right between the supply side and the demand side.

so far delivered to the participating companies offline and independently of one another will be more or less compelled to become internet-enabled. They will have to convert their sales and distribution processes in order to, for example, bid at ISM auctions – not least because that is what their peers are doing. In the medium term, though, users could cut back sharply on the number of suppliers they work with in the marketplace. This also encourages the process of consolidation.

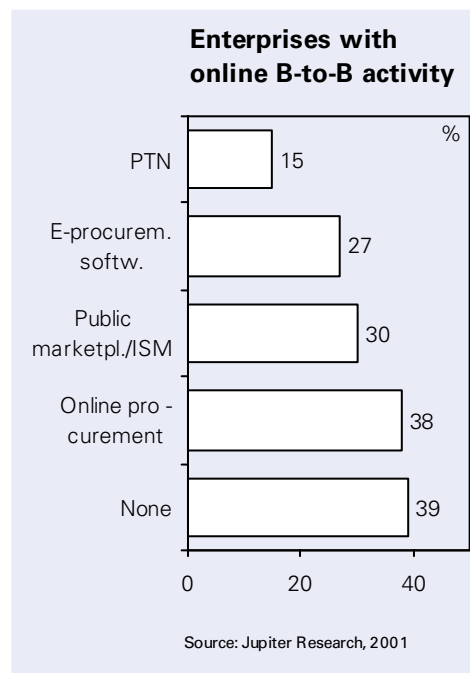
Industry-specific marketplaces make strong demands on **companies' integration power**. This holds both for the companies that decide to set up such a marketplace and also for the member suppliers. In both cases, the exchange of sensitive information can be an obstacle to participation. The rivals participating in the ISM could fear a loss of competitiveness from sharing information on production processes or purchasing conditions. On the supply side, reservations with regard to the provision of forecasts and information on the production process can be reduced if the suppliers take an equity stake in the ISM.

Private trading networks: virtual project rooms pave way to cooperation

Another form of virtual marketplace is the private trading network (PTN). Ideally, a single firm is at the hub of a PTN and works online with suppliers and customers. Industry-specific marketplaces are a preliminary step on the way to PTNs. For example, even Covisint claims it is not only a sourcing marketplace; rather, it wants to focus on cooperation in the medium term. Given the high degree of complexity of PTNs this form of virtual cooperation has played a subordinate role so far. A recent survey has found that only 15% of the US companies pursuing B2B activities online are part of a private trading network (see chart).

Private networks focus mainly on the element of cooperation between suppliers and users, with the possibility of different links in the value chain being organised in the form of a PTN. Alternatives range from the provision of real-time information on inventories and production, coordinated planning and forecast processes up to joint product development, project planning and management. **Cooperation in the area of planning and forecasting** is usually found on the selling side. This is important for producers of retail goods, for instance. Real-time exchanges of information regarding sales forecasts enable the producers to attune their planning and production processes more closely to the customer's wishes in terms of timing and quantities. In the framework of integrating the supply chain (**supply chain management**), suppliers obtain information on, for instance, the quantity of intermediate products already in stock with the user. This also enables suppliers to budget their capacities better. In both cases, the focus is on the goods that represent the company's core competence.

Finally, companies can jointly develop products in PTNs. It is to their advantage that groups in different geographic locations can work together more closely. Better communication and greater efficiency, thanks above all to the use of uniform planning processes, and closer ties to suppliers are important targets for companies when engaging in joint product development (see chart p.9). This close cooperation is likely to be the very basis for competitive advantages.



As a rule, a specific company that controls the marketplace and sets the rules is at the hub of a PTN. However, investment in this type of virtual marketplace probably only makes sense from the initiator's viewpoint if the company boasts a large market share. Only when a critical mass of transactions is reached or the joint planning process is of strong significance is it likely to be worthwhile for the supplier to attune his organisation to the PTN. This poses a challenge especially to small and medium-sized enterprises since they may possibly have to adjust to various larger business partners, their organisational processes and different standards.

PTNs are advantageous above all to sectors in which really complex processes have to be organised or in which product development takes high priority. But, accordingly, it is also relatively costly to set up a PTN. For example, engineering-design systems have to be linked to allow different companies to participate. Therefore, unlike in independent marketplaces, the organisational element – as opposed to the market coordination process – claims greater significance with the PTNs.

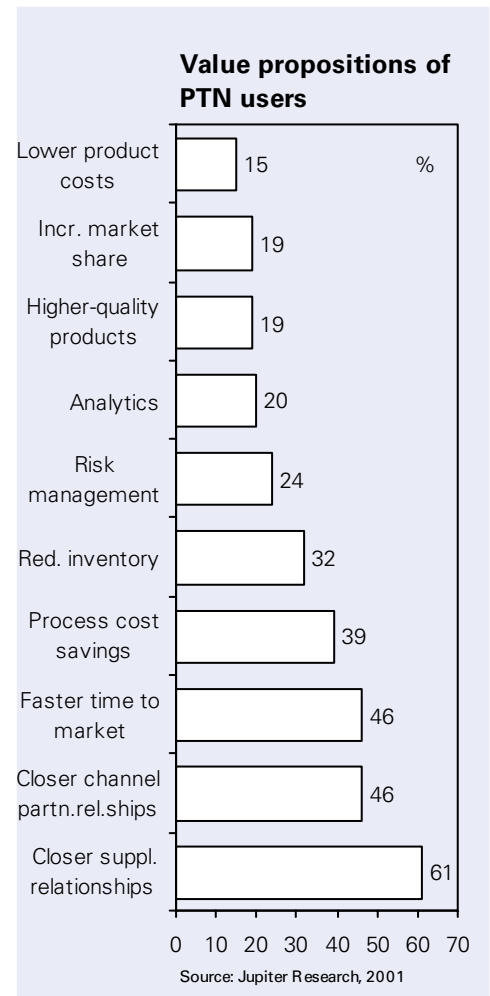
Cooperation: the future model?

Many companies enter into the sphere of B2B commerce to save costs. This holds for both product and transaction costs as well as process efficiency. Automating the ordering process shortens the time required and reduces costs accordingly. This is very important precisely for standardised products such as MRO (maintenance, repair and operation) goods which do not flow directly into the production process, but tie up a relatively large degree of capacity. However, empirical investigations document that the **price-cutting effects** in the online procurement of direct inputs will only feed through some time in the future. Surveys by Boston Consulting show that at present only 24% of suppliers are under price pressure from the internet since their customers order via the web. But a whopping 79% of those polled expect a deterioration in prices for 2004. Lower transaction (e.g. fewer ordering errors, faster internal processes) and storage costs as well as shorter order-to-invoice times reduce the amount of capital tied up within companies. This has the effect – ignoring the costs that arise through the reorganisation of internal processes – of directly **raising productivity** and can result in firms gaining comparative advantages. At the same time, the ties between the companies involved will probably strengthen. Although more difficult to measure, other advantages also emerge that are attributable to the widening of the potential spectrum of customers and business partners using marketplaces.

The opportunities of the future probably lie in a heightening of business cooperation which will result in competitive advantages. A survey says that 66% of buyers and 85% of suppliers have projects in which they already cooperate with their business partners online or else have plans to initiate such projects in the next two years (see chart p.10). This argues against the (one-sided) offensive exploitation of price pressure, which ultimately benefits only one of the participating companies.

Advantages greater than challenges?

The advantages that companies can achieve through online cooperation are set against various challenges. One of the biggest obstacles to the spread of marketplaces is the reluctance of companies to participate in virtual trading. Many fear that their margins will be eroded further through the increase in market transparency. Moreover, the **reorganisation of internal processes** also poses major challenges.



The greater the emphasis on the element of cooperation, the greater the requirements to make a company's existing systems compatible with the systems of the marketplaces or other companies. The integration of ERP and other systems already in use is a major obstacle to the creation of ties between companies and marketplaces (see chart).

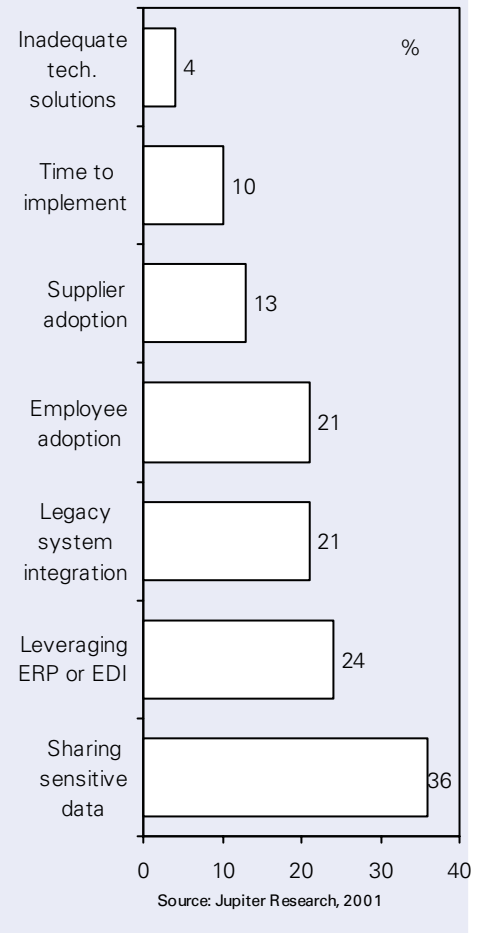
Furthermore, the fact that the **standards** used in the marketplaces often diverge plays a big role. Companies that want to participate in various marketplaces are frequently confronted with different standards. This limits the number of online business relationships that especially smaller suppliers can enter into³. The dominant role which ISMs can assume in the respective sectors lessens this problem, since it is often up to them to lead the way in the development of standards. The more prevalent ISMs become, the more this is likely to encourage the emergence of standards at sector level.

Finally, the participants' worries about the **security** of systems and information as well as the reluctance to exchange **company-specific information** hinders the development of virtual marketplaces. As a rule, the closer the cooperation between companies, e.g. in PTNs, the more sensitive and relevant to competition the information used becomes. This is frequently the reason why PTNs encounter reservations on the part of potential participants and it will probably keep PTNs from attaining strong growth.

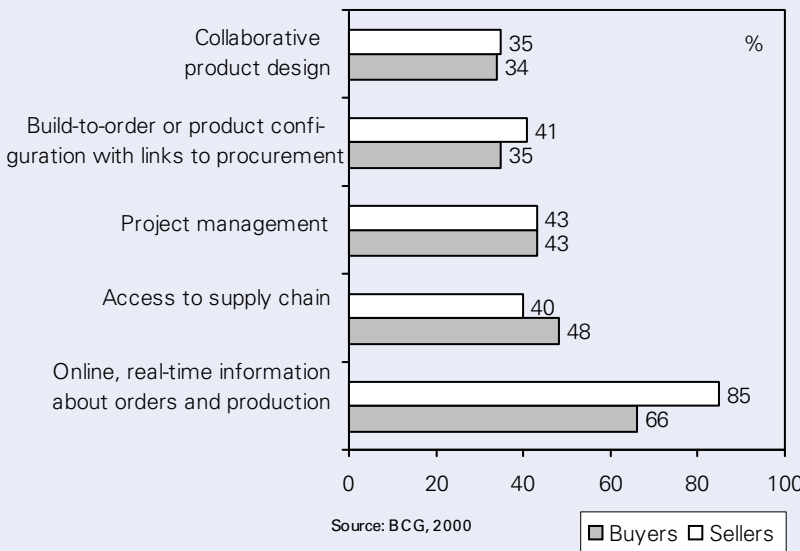
Marketplaces: few expected to prevail

The factors discussed above that tend to hinder corporate participation in virtual marketplaces are likely to curb the growth of marketplaces in general. At the same time, a consolidation trend is in evidence: only a few marketplaces will be able to prevail in the market in any given sector. **The number of marketplaces is therefore set to plummet in**

Barriers that prevent enterprises from forming PTNs



Online collaboration initiatives



³ However, the increasing use of XML (extensible Markup Language) is helping to ease this problem. XML enables the contents of documents to be described neutrally in user and producer terms, allowing them to be processed by different computer systems.

future. This is underpinned by the necessity faced by independent operators to attract as large a number of transaction partners to their sites as possible so they can finance themselves from the fees collected. The value-added services offered on the website such as financing and consulting may serve as an additional source of revenue, but they usually contribute only a small fraction of earnings.

At the same time, probably only a few independent vertical marketplaces will manage to hold their own against industry-specific marketplaces. If an independent operator is unable to capture a large market share in a particular sector, it will have little choice but to become, say, a niche supplier that acts as specialist or agent in a strongly fragmented market. Moreover, independent operators can command a role as marketplace for certain standardised intermediate products or MRO goods and commodities across several sectors (horizontal marketplace). Similarly, in the case of industry-specific marketplaces and PTNs, it is likely for the reasons named above that only a few big sites will become established.

Competition will undergo a transformation

Contrary to the frequently voiced argument that the internet opens doors for small operators, the path tracing the development of virtual marketplaces tends to suggest the opposite: big is beautiful. However, companies will be able to **participate** – depending on their field of activity and the sector they belong to – **in several different marketplaces with different functions** (e.g. procurement of MRO goods, trading in commodities).

Competitive structures in sectors will undergo a transformation due to virtual marketplaces. Therefore, it is no wonder that this form of corporate cooperation is coming under scrutiny by the competition watchdogs. The Federal Trade Commission and the EU antitrust authorities are observing the emergence and conduct of virtual marketplaces. One of their objectives is to prevent the development of competition-restricting market clout as could happen if several large producers bundled their buying power via a marketplace and brought pressure to bear on the prices of their suppliers. Moreover, any collusion between competitors on a virtual marketplace, or the exclusion of companies from a platform, would trigger action by the authorities. The latter's assessments will, however, have to allow for the rise in transparency afforded by the internet, productivity growth from trading in virtual marketplaces and the broadening of the markets. To sum up, while virtual marketplaces encourage competition, they also give reason for the antitrust authorities – and this means at the international level – to keep a close eye on the changes evolving in sector structures.

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