



European Logistics
Association

The Influence of E-Commerce on Tomorrow's Logistics

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A study compiled by
TradeNet **one.com**[®]
on behalf of the
European Logistics Association



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Purpose of the study

The following study was conducted by TradeNetone.com on behalf of the European Logistics Association (ELA). Purpose of the study was to find out consequences of electronic commerce on logistics processes of the future. Further the study will show consequences from rapid increase in electronic commerce for logistics services providers and industrial companies. It will help to understand the revolutionary changes due to the internet and indicate how to adapt companies' processes to future necessities.

Study design

The study is based on telephone interviews with logistics specialists in 157 companies conducted in 7 European countries as shown in figure 1. The companies interviewed were from various industrial branches (57, of those 6 are also offering transport services), logistics services providers (81) and consultants (11) (with 8 companies not giving a statement).

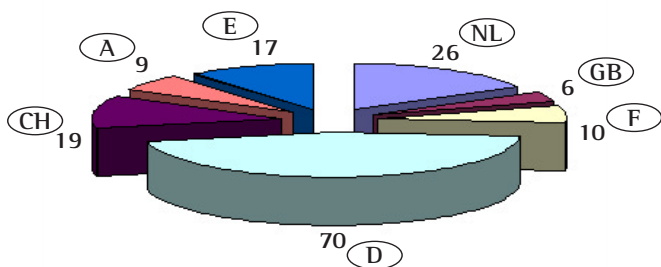


Figure 1: Origin of the participation companies

The interviews were carried out in the second half of 2000 and the first months of 2001. Therefore a part of the interviews were conducted shortly after the climax of the internet-hype others at a time, when it was obvious that high expectations projected on internet-economy were exaggerated. However, change of expectations concerning internet-based business did not seem to have a strong influence on expectations concerning influence of internet on logistics. Some interviewpartners stated that due to change of expectations spread of internet might slow down, but will not stop.

Results

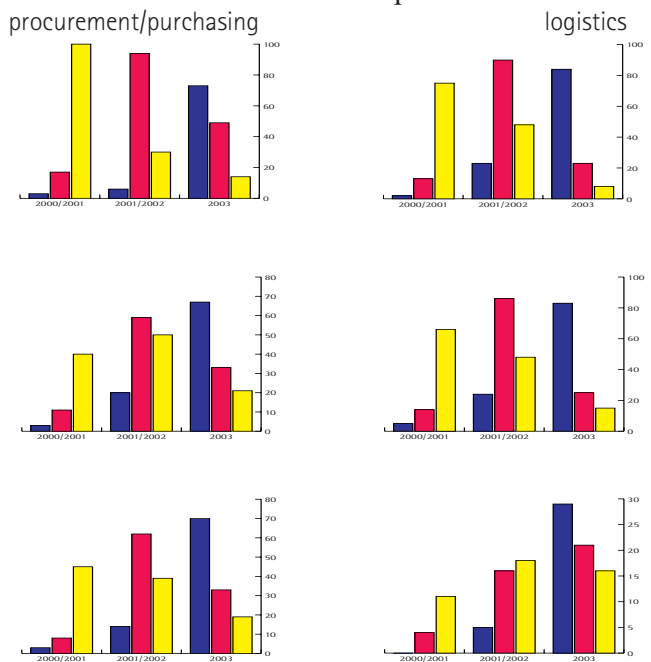
To gain an idea of internet applications used, the companies were asked about their actual and future plans to conduct business via internet and the use of internet in logistics. Furthermore advantages and disadvantages of internet-supported systems were investigated. Finally a number of hypotheses was tested on the interviewpartners to gain an impression of future impact of new communication technologies on logistics.

Current and future applications

The interviews showed, that internet has made it's way to almost all companies. A vast variety of applications is in use, such as:

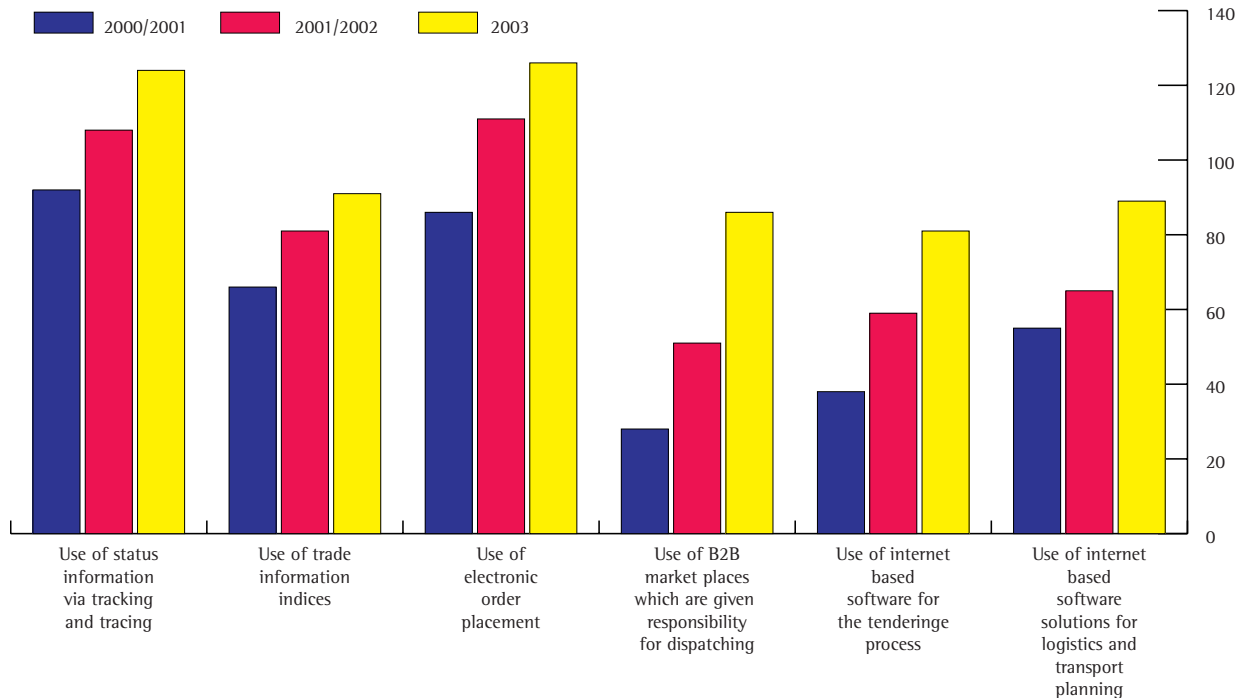
- homepage for marketing purposes,
- tracking and tracing tools,
- information gathering via internet,
- procurement, tenders and selling via the internet,
- order entry,
- visualisation of processes for better integration of service providers or other production sites,
- credit management ...

In most companies (a variety of) different applications are in use, but almost all seem to lack a consistent companywide integrated strategy to include internet in business processes. Most seem



to have isolated applications only. Figure 2 shows, that internet is mostly used for procurement/purchasing, followed by distribution/sales and logistics. For maintenance/services and administration it is not as important and it is fairly unimportant in production, probably because of existing informational infrastructure in this area.

Figure 2: Use of internet in various areas (total number of statements)



systems and thus help to support processes. Interviewpartners seem to have special mental reservations concerning software hosted by application service providers. Most popular application to support processes is electronic order placement. Higher sophisticated applications such as market places that include logistics activities like dispatching the acquired products or internet-based software for the tendering process are not used as frequently, but a tendency to adapt company's practices in the future is identifiable (see figure 3). The figure also indicates that spread of internet technology will continue to increase in the next years.

Figure 3: Use of internet in various logistics areas (total number of statements)

Use of internet in logistics

Since it was expected that logistics is an area where internet is often used, the research team put a special focus on it. Most often used and offered for logistics purposes are order status information systems, followed by information services. The replies to other questions also indicate, that the internet is still more popular as a passive information system, used to gather information manually from different databases on the internet, than as a bi-directional information transfer system to connect different information

Hypotheses

At the start of the study the research team put a number of hypotheses concerning future development of internet-based economics and especially it's influence on logistics processes and markets. These hypotheses were tested in the interviews.

The first hypothesis was concerned with importance of internet based processes in logistics. According to the results (see figure 4) it will continue to increase and existing informational technology might gradually be replaced by internet based systems. This is coherent to the results above. Figure 3 indicates that companies will continue to implement internet applications to support logistics and according to figure 2 implementation of internet applications in logistics

has just begun and is going to continue the coming years.

The following hypotheses were questioning influence of internet on logistics services requirements.

Using internet for the ordering process is going hand in hand with new distribution systems and service providers that offer the ability of quick delivery (24-hour service). These possibilities have already led to postponement of order points on the demand side. This makes forecast-

The importance of open internet-based processes in logistics will increase dramatically. Conventional computing systems and networks will be

Completely incorrect	1 %
Incorrect	11 %
Partially	38 %
Correct	29 %
Completely correct	20 %

(based on 156 statements)

The ability of quick delivery postpones the order-point, i.e. forecasting period is shortened.

Completely incorrect	1 %
Incorrect	12 %
Partially	23 %
Correct	41 %
Completely correct	23 %

(based on 154 statements)

Thanks to the speed of internet ordering (one click, no paperwork) I get my goods delivered

Completely incorrect	6 %
Incorrect	28 %
Partially	43 %
Correct	14 %
Completely correct	9 %

(based on 153 statements)

Transport and storage becomes a commodity, i.e. are interchangeable and subject to cost pressure.

Completely incorrect	2 %
Incorrect	14 %
Partially	20 %
Correct	43 %
Completely correct	21 %

(based on 153 statements)

Assuming that logistics services are reliably available at any time, long-term contracts with providers of logistics services are no longer nec-

Completely incorrect	23 %
Incorrect	50 %
Partially	22 %
Correct	3 %
Completely correct	1 %

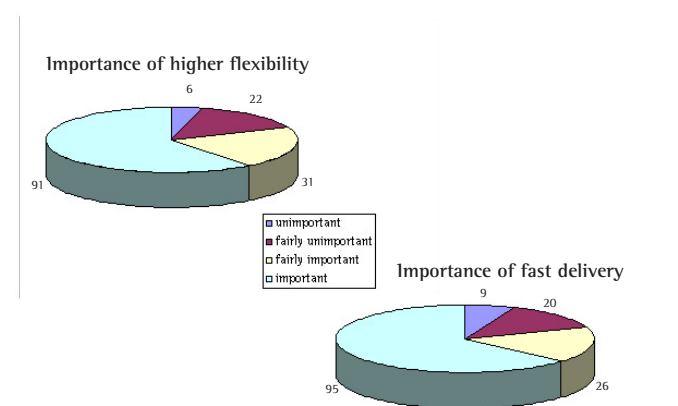
(based on 157 statements)

ing more difficult for suppliers as well as service

providers because of shortened forecasting periods.

The service demands of the customers seem to increase because of internet ordering. Even though internet ordering is only accelerating the order transmission and has no direct influence on the other components of delivery time, most users seem to believe, that they get their goods delivered faster.

The last two hypotheses were concerned with internet's influence on logistics markets and the



Does internet-based business requires more or less ...	more	less
data processing and computers	89	33
personnel	30	66

way business is done between sender and logistics services providers.

Since market transparency is increasing due to presence on the internet the market for logistics services could be underlying significant changes. Even though most companies agree that certain logistics services become a commodity and will be easily interchangeable they do not agree that new market possibilities will replace long-term contracts with logistics services providers. These partly contradictory statements indicate that companies might rely on long-term relationships with their service providers for those services they use constantly and cover surplus demand with "logistics commodities" available via internet.

Figure 4: Hypotheses on future expectations concerning influence of internet-based business on logistics

Consequences

As indicated before and shown in figure 5 fast delivery and higher flexibility will be important in logistics to handle business processes via the internet. Therefore companies will need more hard- and software. Logistics services providers will have to adapt their information systems according to the demands of their customers. Information technology will have to become a core competence for them in order to stay competitive. After all it will result into lower costs.

Figure 5: Consequences of internet-based business (total number of statements)

Most companies expect significant savings. But specific estimations are difficult. Only few companies would name any numbers and those were often only related to certain applications or areas of activities. Therefore an estimation of internet's impact on logistics costs is not possible.

Financial benefits are expected to result from faster and better communication with customers. Both enable faster processes, higher flexibility, better service levels and thus help to reduce costs. Customer service is also improved. Further companies expect automatisation of routine activities due to certain applications which will also help to reduce costs, for example by reducing staff as it is indicated in figure 5. Some see the possibility to variabilize logistics costs even for logistics services providers, due to logistics services which might be easily purchased via internet. Most companies also hope to take benefits out of better informational background to reduce costs in various other areas, especially marketing (customer relationship management).

According to many interviewpartners better informational infrastructure might also lead to outsourcing of logistics functions, since communication with service providers is improved. Besides transport and warehousing especially low-value value-adding activities such as labelling and packing are likely to be outsourced. For the further future some companies expect order management to be outsourced to achieve bundling of activities to one service provider. Also special logistics systems like those for spare parts seem likely to be handed over to services providers.

Reasons for outsourcing are mainly costs, but also performance and quality as well as flexibility and bundling of functions.

Besides security risks companies are afraid of new market structures arising from internet-supported processes. Especially industrial companies fear new market power of logistics services providers. Those on the other hand are afraid that internet might increase their exchangeability. Wholesalers are afraid to become mere logistics (distribution) services providers rather than demand aggregators. The new transparency might reduce prices and thus revenues. At the same time expenses for communication technology might absorb possible savings. Another area of consideration is qualification of staff which has to be better trained and it might be difficult to hire personnel to build up the necessary information technology infrastructure. Also many customers seem not yet ready for the internet-age and do not know how to handle the new systems. Change in workflow and processes not properly adjusted to new demands in combination with not properly qualified customers and staff lead to erratic changes in order volumes.

Conclusions

Internet is widely accepted for many different business processes. It's importance will still continue to grow, even after the crash of internet-related businesses at the world's stock markets. It becomes obvious, that information technology is a logistical core competence with increasing importance, especially for logistics services providers. Physical processes will have to be adapted to fulfil the customers' demands in the internet era: velocity and flexibility.

Due to information technology and the internet logistics services become interchangeable commodities. As a consequence of the transparency resulting from the internet competition will increase. Nevertheless industrial companies will still stick to long term relationships with logistics services providers to cover their basic logistics services demands in the future rather than acquire logistics services on spot markets whenever needed. However, market places where logistics services are traded will be important for industrial companies to cover surplus demands,

European Logistics Association
Kunstlaan 19 Avenue des Arts
B-1210 Brussels
tel +32 2 230 02 11
fax +32 2 230 81 23
ela@elalog.org
www.elalog.org