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TENDENCIES, PROSPECTS AND PROBLEMS OF TRANSPORT-LOGISTICAL PROCESSES DATAWARE AUTOMATION AT UKRAINE ENTERPRISES

Summary. Considered tendencies, prospects, problems of transport-logistical process dataware automation at Ukrainian enterprises, factors on which development of the given direction depends are considered, results of researches of importance of the advanced information technologies as the tool of competitive advantage, the statistics about shares of the enterprises of small and middle enterprises with the developed server local networks.

ТЕНДЕНЦИИ, ПЕРСПЕКТИВЫ И ПРОБЛЕМЫ АВТОМАТИЗАЦИИ ИНФОРМАЦИОННОГО ОБЕСПЕЧЕНИЯ ТРАНСПОРТНО-ЛОГИСТИЧЕСКИХ ПРОЦЕССОВ НА УКРАИНСКИХ ПРЕДПРИЯТИЯХ

Резюме. Рассматриваются тенденции, перспективы, проблемы автоматизации информационного обеспечения транспортно-логистических процессов на Украинских предприятиях, факторы, от которых зависит развитие данного направления, приведены результаты исследований важности передовых информационных технологий, как инструмента конкурентного преимущества, представлены статистические данные о доли предприятий малого и среднего бизнеса с развернутыми серверными локальными сетями.

Supply chain management formation and organization practically cannot exist without intensive operative information interchange between the participants of transport process, without fast reaction to needs of the transport services market. In the present market conditions of a rigid competition in the transport branch, the transport logistics practically cannot exist without automation systems of supply with information which is based on modern information technologies active usage.

Let's consider tendencies of dataware automation of transport-logistical processes and factors on which their development depends. It is characteristic, that all modern directions in development of the transport services market are based on active electronic business operations forms usage. It is shown in the names of new, rather perspective and effective electronic technologies: e-logistics, e-mobility, e-business etc. For all market participants the basic competitive advantage becomes skill to work in a real time mode, to dataflow operate, to integrate data, to reduce costs and to raise management efficiency, due to an effective supply with information that influences on transport-logistics management. Prospects of further introduction of information systems and technologies in transport processes are connected with:

- information integration on transport on the basis of Internet and telematics with the purpose of global trans-European cargoes monitoring movement maintenance,
- with development of high-speed paid highways network with remote forms of calculations,
- with perfection internal and external document circulation in the enterprises,
- with formation of virtual transport-forwarding agencies network in the Internet for maintenance of self-organizational processes in attitudes between transport service customers and suppliers (service of the self-order),
- with the problem decision of transport idle in license customs warehouses of enterprises and on borders by active "Green Custom" technology introduction, based on electronic workflow (EDI),
- with information integration of manufacturers, distributors and the transport-cargo enterprises with consumers on Internet-technologies platform (WEB),
- with understanding of new technologies introduction importance, by a management of corresponding divisions of the enterprise, and by top-management.

By reports of foreign researchers, an electronic exchange application of transport documents between firms annually increases on 30-40%. More and more arises forwarding companies, which aspiring to expand the transport services market by opportunities of electronic advertising and virtual ways of cargo transportation organization.

Considering statistics in table 1, presented by the iDC company with SAP corporation supporting in May 2007 which reflects the attitude of the middle enterprises, fast-growing e middle enterprises (the annual gain of incomes makes over 10%) and most quickly growing middle enterprises (the annual gain of incomes makes over 20%) to the advanced information technologies, as to the important tool of competitive struggle [3].

Table 1

The consenting with the statement: the advanced information technologies are for us the important tool of competitive struggle (% of respondents)

	Total quantity of MEs	The fast-growing medium-sized enterprises (an annual gain of incomes over 10 %) quantity	Most quickly growing medium-sized enterprises (an annual gain of incomes over 20 %) quantity
1 – absolutely not agreed	0.9	0.5	0.5
2	4.6	2.6	6.0
3	7.2	11.1	8.0
4 – the neutral attitude	27.0	23.4	22.1
5	21.9	20.1	19.2
6	22.4	22.7	23.4
7 – fully agreed	16.1	19.7	20.9
6 or 7	38.5	42.4	44.3
Average value	4.96	5.07	5.07
Total quantity (medium-sized enterprise)	418	148	60

Analysis results (average values 4.96, 5.07, 5.07) in general, testifies of neutral loyalty of companies management to new information technologies, as to the strategic tool of competitiveness. However if to compare a share completely agreed (given estimations 6-7 or 7) it is possible to notice, that the enterprises with fast and fastest development concern more loyally, than usual enterprises.

One of the basic attributes of international transport market progress became occurrence of the independent enterprises - providers of transport-logistical services. Working as the external service of the cargo traffic initiator, takes up all functions on organization and maintenance of material flow movement that allows the cargo traffic initiator to concentrate on strategic problems and on the basic activity. Providers of transport-logistical services work with great volumes of information, operating deliveries circuits including enterprise-customer, its suppliers and consumers, and also executors on separate parts of a circuit (forwarding agents, carriers, operators of warehouses, terminals, ports, etc.). The scheme of transport-logistical provider with the client interaction (the initiator of cargo traffic) and service providers is presented on fig. 1 [4].

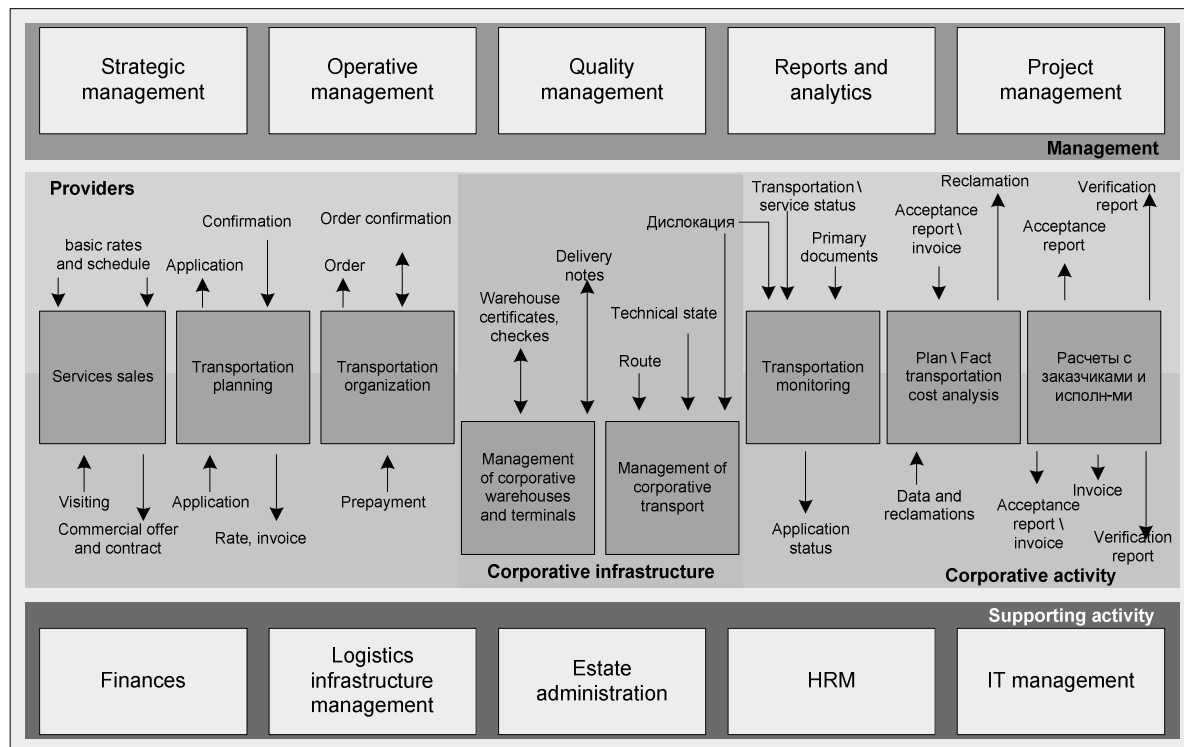


Fig. 1. The scheme the transport-logistical service provider cargo traffic initiator and service providers interaction

Рис. 1. Схема взаимодействия провайдера транспортно-логистических услуг с клиентом (инициатором грузопотока) и поставщиками услуг

The provider to executors as the intermediary between the customer and service providers forward puts rigid requirements of quality, dataware costs, thus, establishing new higher standards of service in this branch.

The information environment serving cargo traffic in various sectors and in various levels of the enterprise to becomes more and more complex. In this case, the local computer network carries out functions of the central nervous system of the cargo traffic initiator: it supports communications and business-processes, serves as a corporate information resource of joint usage, the tool of reaction to changes of the internal and external information environment. At the medium size enterprises local networks with servers already likely a rule, rather than exception to that fig. 2 testifies [3].

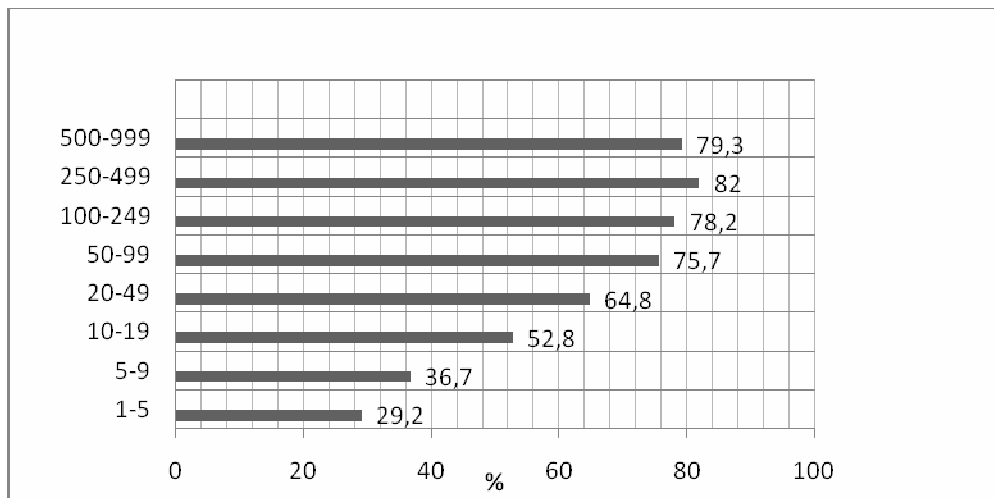


Fig. 2. Percentage of the SME with server local networks by quantity of employees

Рис. 2. Доля предприятий малого и среднего бизнеса с серверными локальными сетями по количеству сотрудников

Dataware automation of transport-logistical processes is defined by the following directions:

- research and the analysis of static and dynamic data flows,
- development of hardware-software and information systems for automation of supplying, the decision of problems of planning and the accounting on transport, in a warehouse facilities, in service management, and also ERP-systems development,
- development of mobile communication and high-speed telecommunications systems,
- development of Internet-technologies (WEB-technologies) and data protocols.

Today large international transport and distributor enterprises are guided by application of the complex integrated information systems (IIS) and corporate information systems (CIS). Stability of an economic situation, stability and calculations uniform technology do these software products replicated, that essentially reduces their cost. For example, such corporations as Microsoft, SAP, 1C develop platforms and branch decisions for the cargo traffics organization and management.

Modern marks technologies of a commodity output, in particular RFID technology helps in construction of big scale and high quality CIS. Using RFID gives a number of advantages in comparison with manual data processing:

- dataflow "delay" in relation to material is considerably reduced (to 60-80%),
- the quantity of unreliable information getting to the system as a result of operator mistakes and the human factor decreases. The given factor is difficult for overestimating if to consider time spent for information searching and correction, got in system after enough time,
- new opportunities of same goods separate accounting, on working lives and other characteristics open. By the hardware and program control conformity of physical goods moving to the information maintenance of system is provided,
- opportunity of transferring information is direct together with the goods on a stroke-code. The given information communication helps to provide the operative control of operations both over a micrologistical level inside the enterprise, and on macrologistical by transfer of production on significant distances,
- loading on the personnel borrowed by the control over logistical operations decreases,
- by consideration of shaped coding technology application in the warehouse account as the basic direction here it is possible to allocate automatic formation credit orders and account documents, carrying out of inventory.

Let's consider prospects of dataware automation of transport-logistical processes.

Process of transport-logistical resources accumulation in the Internet has already reached a level, which allowing to speak about opportunity of virtual logistical centers (Virtual Logistical Center - VLC) formation with electronic services of marketing, management and transport expedition functions. The model of such system has been presented and patented by the author of this article in the co-authorship with PhD, professor Sultan K. Ramazanov in [1]. Following integration of VLC with information services of cargo traffics initiators and transport providers, warehouse, forwarding services will allow to generate uniform transport-logistical information space finally.

Active usage of Internet technologies for intensive increase of service applications flow for transport expedition by cargo traffics initiators will lead to the cargo traffic organization and maintenance automated process. For example, offered by authors of article in [2] conceptual model of information system of cargo transportations using auction to organization in trading, transport information systems, cargo stock exchanges solves new speed and duly delivery needs, to reliability of auction way of the organization of cargo transportations functioning. Cargo transportations organization proposed by system for three ways:

- Using "Standard" ("English") type of auction,
- Using the "Dutch" type of auction,
- Using "Simultaneous offers" type of auction.

The system simplifies and minimizes charges for time and material resources, performance and organization of the following complex of works:

- a choice of effective transport schemes by using complex transport types,
- the execution of transportation contract between cargo owners, cargo transporters and customers,
- growth of economic cargo deliveries to destination station,
- minimization of time and material charges for communication,
- etc.

As it has been noted, the perspective approach to data ware automation is deployment of CIS. CIS allows:

- to realize the operative business operation for the chosen key indicators (the cost price, structure of expenses, a level of profitableness, etc.),
- to do transparent usage of capitals enclosed in business for company management,
- to give the full information for economically expedient strategic planning,
- professional charges operating, evidently and precisely showing by what is possible to minimize charges,
- timely revealing bottlenecks, resources redistributing, estimating term of new orders execution.

CIS deployment can be developed by two ways. The first – enterprise management system reengineering for standardized system, the second – development their own CIS for existing management system and organizational structure that also can be provided by enterprise structure scheduled optimization if it's needed. With appearance of new directions in logistics, transport logistics subjects expansion and complication in the Internet, a number of serious practical problems arises.

First of all, it's difficult searching for the required resources in the WWW. If earlier this problem has been connected with lack of network resources, so now it's connected with redundancy of the insignificant information, complication of access to the required data and services. It is consequence of search engine optimization (SEO) (application of the various resolved and forbidden actions ("white" and "black" methods) for sites popularization in the Internet, focused on most often used inquiries of users through search systems even if the subjects of a site and sense of positioned keywords have no similarity logic), and also consequence of using indexing and search algorithms in search systems. This is display synergy effects consequences in the public information systems.

Also one of the most serious problems is a problem of reliability and guarantees maintenance in commercial network operations. At present the legal regulation of interactive relationship in the Internet is defining for prospect of active commercial usage in logistics. A practice testifies that partnership in the public services isn't always conscientious.

The basic difficulties and problems with which collide at deployment of corporate information systems (CIS) are the high price (for the small and middle companies, for example, SAP solution cost for enterprise in the average from 50-100 thousand euro), an adaptability, and also that their deployment often demands enterprise. At decision-making on company management automation based on CIS is necessary to consider a lot of informal factors, especially socially-psychological. Besides usage of foreign systems in Ukraine in most cases is inconvenient because exist incompatibility of the account and calculations technologies, thus these program solutions are superfluous for conditions of Ukraine on 30-40%, and also are not always localized.

CONCLUSIONS

The data of the international researches has shown the conclusion, that for all participants of the market one of the basic competitive advantages - becomes skill to work in a mode of real time, to operate of information flows, to integrate data, to reduce costs and to raise management efficiency, due to an effective dataware, which have an effect on efficiency of transport-logistical system management. High automation efficiency of productions and office-works will be economically effective at maintenance due to a high-intensity flow of applications for services. Internet as technology of the global open networks is the best means for attraction of the broad audience of consumers and transport-logistical service providers. However with development of integration processes on transport and in economy as a whole, information flows organization and optimization in places of cargo traffics origin and dispersion becomes a pressing problem. There is the information redundancy, which braking business processes appearance because of necessity to process huge quantity of unnecessary data. And this problem for today is not less important, than a problem of information insufficiency. A problem of CISs adaptation for present managing conditions in Ukraine is serious enough, as its deployment is the complex process usually accompanied by reorganization of manufacture and personnel rearrangements.

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