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Logistics Information and Customer Service

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***Abstract*—**The paper deals with the importance of information flow for providing of defined level of customer service in the firms. Setting of the criteria for the selection and implementation of logistics information system is a prerequisite for ensuring of the flow of information in firms. The decision on the selection and implementation of logistics information system is linked to the investment costs and operating costs, which are included in the total logistics costs. The article also deals with the conclusions of the research focused on the logistics information system selection in companies in the Czech Republic.

***Keywords*—**Customer service, information system, logistics, research.

I. Introduction

CURRENTLY, every business is exposed to a constant and important changes in the competitive environment and maintaining of a stable position in the market is more linked to meeting with the increasing and changing needs and wants of customers. According to Cano-Olivos at all [1] "*It is essential to improve technical knowledge, experience, internal and external customers' information to develop, to design new textile products.*" And it is clear that in all specific industries firms are focused on information flow. Logistics services can make a significant contribution to meeting the needs of customers and the company can gain competitive advantage.

The basic task of logistics management in the enterprise is to ensure a high level of customer service, while the optimal level of overall logistics costs is given. For the successful achievement of objectives in the area of customer service, it is necessary to focus on the management of material flows, whose include products for meeting of customer requirements and these are linked with input flows of raw materials, components, machinery and equipment. According to Sharif at all [4] "*Central to this array of operations are core business processes that relate to the management of production, which are typically inventory control, resource planning, and scheduling. Such operations also involve the management of information as well as third parties (vendors and suppliers).*" From this it is clear that a prerequisite for managing the material flow is an adequate flow of information. The most important information for logistics management is related to customer requirements and the subsequent establishment of criteria for the actual production, purchasing and procurement of the necessary inputs to the enterprise.

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II. The Importance of Logistics Information to Ensure Customer Service

Management of customer service and establishing of the necessary criteria is a prerequisite for customers' satisfaction. In that context, it is important to realize that the flow of information from customers enables the company to gain logistic objectives in all key areas, primarily in the manufacturing and purchasing.

Logistics management in the enterprise is therefore responsible for setting of the optimal level of information flows. A prerequisite of appropriate information level in enterprises is the selection and implementation of logistics information system (LIS). The task of the LIS is the collection, processing, storage and subsequent distribution of data to places where the selected information are necessary for implementing logistics activities and the achievement of goals that are within the competence of logistics specialists in the company.

Implementation of logistics information system requires knowledge of the criteria that are necessary for the purchase and implementation of an information system. In companies there are skilled professionals with experience in the implementation of various software needed for business but for logistics knowledge usage it is not sufficient.

The first problem is the poor approach to the logistics management in a business where often lack of specialists can occur and the authority and responsibility is shared in several departments without the knowledge of the relationship between logistics activities and corresponding costs [2]. Therefore, information system, or rather selected software, enterprise acquires due to the requirements of each department, regardless of the relationship between logistics costs.

In the case that the company has experts who are focused of logistics and other issues, they may also be trying to get the best and the often too expensive information system regardless of the actual logistics information requirements. The motivation of these logistics specialists stems from an idea of becoming the most successful company in all areas and these results in simplified working with the information and not focusing on the core -business and customer interest.

Other neglected options in the management of information flows in a company can be outsourcing. In enterprises there is little interest in outsourcing of the information systems management and mainly due to managers fear the of loss, damage or theft of data, and therefore they often prefer a less effective approach of collecting, sorting, storing and distributing data separately in the company departments

software.

According to Wang and Li [5] "*In recent years, due to the rapid development of digital technology, numerous technological products have been created, other than general household appliances, and such types of goods are collectively known as 3C (computer, communication and consumer electronics) products.*" In result selection and purchasing of the suitable LIS requires the cooperation of all departments [3], which are involved in the management and use logistics information. This is the basis of mutual inter-departmental action it is necessary to establish a set of criteria that will be the fundamental part of LIS order for suppliers.

III. Own Research

The aim of the research was to determine which criterions are the most significant for companies in the implementation of the LIS, as well as if companies manage the LIS themselves or through outsourcing. A questionnaire survey was conducted in the months of April and May2013.

Research tools were standardized anonymous questionnaires prepared by the Department of Logistics of School of Business Administration in Karviná. Questionnaires were completed via face-to-face interviews with the owners (directors) of randomly selected companies. The completed questionnaires were subjected to optical inspection and then processed by using MS Excel. Interviewers addressed respondents in North Moravia. It was obtained a total of 128 properly completed questionnaires.

A. Characteristics of Respondents

In terms of the legal form we can divide the respondents as follows: limited liability companies have the largest share (58.59%, 75 companies), followed by self-employed (21.88%, 28 companies) and join-stock companies (19.53%, 25 companies). Other types of legal forms did not occur among the interviewed firms. On the other hand, these are the most common legal forms of the business sector in the Czech Republic.

There are all types of company size in our research. Micro firms make up 32.03% of the sample (41companies), small firms make up 32.81% (42 companies), followed by medium-sized companies (18.75%, 24 companies) and large firms (16.41%, 21 companies).

The line of business of companies was also of interest to the interviewers. As it is not unusual that the company has more lines of business, the companies reported that field, which is their main, see the Table I.

TABLE I
Line of Business

Line of business	Number of companies absolutely	Number of companies relatively
agriculture	4	3.13%
industry	32	25.00%
civil engineering	17	13.28%
transport	9	7.03%
trade	36	28.13%
service	30	23.44%
total	128	100.00%

It is also common practice that companies operate in terms of areas of functioning in multiple markets. Therefore respondents completed the predominant area of operation, see the following figure.

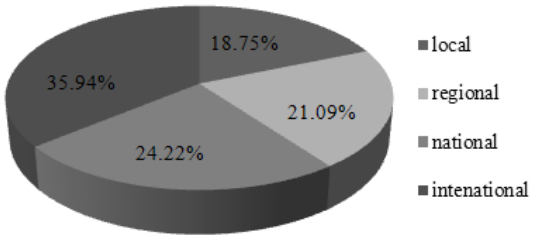

Fig. 1 Market place

B. Criterions for Implementation and Management of the LIS

Part of the research was to assess which criterions company management considered in the context of the installation of the LIS as the most important. This is a set of the following variables: return, price, quality, and complexity, possibility of extending, service, SW demands and HW demands. After the installation of the information system decision on system management is another important element.

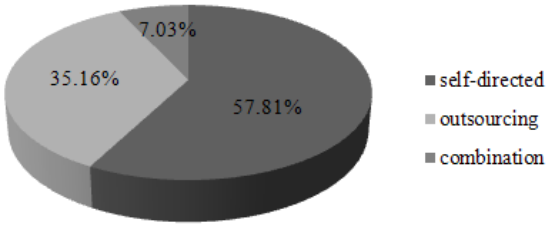

Fig. 2 Management of the LIS

From the figure, it is clear that the self-directed management of LIS dominates in the companies. The relationship between the management of the LIS and the legal form of companies we can see in the following Table II. Self-directed management and outsourcing are represented about equally in joint-stock companies; in self-employed persons and limited liability companies, self-directed management predominates.

The relationship between the management of the LIS and firm size is shown in Table III. For all sizes of company self-directed management dominate, only for medium-sized companies the share of self-directed management and outsourcing is the same.

TABLE II
Legal Form vs. Management of the LIS

Legal form	Self-directed	Outsourcing	Combined
self-employed person	20	6	2
limited liability company	42	26	7
joint-stock company	12	13	0
total	74	45	9

The relationship between line of business and management of the LIS we can see in the following Table IV. From this table it is evident that outsourcing prevails only in firms providing services, for companies doing business in agriculture self-directed management and combined management are represented identically.

TABLE III
FIRM SIZE VS. MANAGEMENT OF THE LIS

Number of employees	Self-directed	Outsourcing	Combined
< 9	25	16	0
< 50	26	13	3
< 250	10	10	4
250 and more	13	6	2
total	74	45	9

TABLE IV
LINE OF BUSINESS VS. MANAGEMENT OF THE LIS

Line of business	Self-directed	Outsourcing	Combined
agriculture	2	0	2
industry	19	9	4
civil engineering	14	3	0
transport	7	2	0
trade	19	14	3
service	13	17	0
total	74	45	9

TABLE V
MARKET PLACE VS. MANAGEMENT OF THE LIS

Market place	Self-directed	Outsourcing	Combined
local	17	7	0
regional	21	6	0
public	18	12	1
international	18	20	8
total	74	45	9

When exploring the connections between the management of the LIS areas of activity of the companies, it was found that the combined management of the LIS occurs mainly at companies with international operations. Only in these companies outsourcing slightly prevails over outsourcing. Self-directed management clearly prevails in the companies with local and regional areas of activity see Table V.

Companies also answered the question: What criterions are relevant for your company in the installation of the LIS. Each of the criterion, see table, the firms evaluated the range of 1 – very important, 2 – average important, 3 – not important, 4 – I cannot review. In the Table VI there are average marks reported for each criterion. The criterion with the lowest average score is the most important for the companies, while the highest average rating has the smallest deciding weight.

TABLE VI
EVALUATION OF CRITERIONS FOR INSTALLATION OF THE LIS

Criterion	1	2	3	4	Average	Order
return	60	40	12	14	1.81	3
price	66	45	6	9	1.64	2
quality	94	25	0	7	1.34	1
complexity	52	47	16	11	1.86	5
possibility of extending	30	55	25	16	2.18	6
service	62	35	12	17	1.84	4
SW demands	24	54	24	22	2.28	7
HW demands	11	52	37	24	2.52	8

Respondents were also asked whether they miss logistics professional with education at the Bachelor and MSc in their companies. Positively in both cases, only 21 companies responded. At the level of Bachelor 40 companies answered that they cannot review, at the level of MSc it was 44 companies. The rest of the responses were negative. This high figure can be explained by the fact that many people still have the notion of logistics associated exclusively with transport or alternatively with storage, but do not understand logistics in its scope.

IV. THE POSSIBILITIES OF IMPROVING OF THE LOGISTICS INFORMATION FLOWS

When implementing logistics information system, managers should realize that the company must achieve logistics goals and they need to gain the required level of customer service and optimal management of total logistics costs

The basic prerequisite for gaining of logistics objectives is setting of a high knowledge and experience level of expert personnel who will be focused on logistics, and they will accept specifics of logistics management and thus the specific work in ensuring information flows.

Due to high experienced staff, managers can analyze the costs of implementation and operation of the LIS. And it is necessary to consider the feasibility of new approaches to work with information (emphasis on the electronic exchange of data within the supply chain) and also evaluate the possibility of outsourcing IT.

Another way that can contribute to better management of logistics costs in working with information flows is the selection of an appropriate method for analyzing, implementation and operation of the LIS. Suggestion of method phases is following:

1) Identification of the need for information and information flow identification.
2) Analysis of the information flows, mainly focusing on the creation, processing, and delivery of information at the right at proper location with regard to information redundancy.
3) Determination of criteria for the selection of the LIS - focusing on the possibility of the logistics costs management support, compatibility with the information systems of customers, suppliers, reducing duplication and redundancy in information flow, etc.
4) Comparison and selection of LIS suppliers based on

selected criteria, which also include the possibility of further support from the vendor.

5) Implementation and operation of the LIS - the emphasis on simplicity, speed and usability.
6) Monitoring and evaluating the of operation success of the LIS in the enterprise - to simplification and improvement of information flows, results in the proper management of logistics costs and provide high level of customer service.
7) Follow-up should be focused on the individualisation of information reporting, customer support by the vendor.

V. Conclusion

The achievement of specified level of customer service belongs to the basic tasks of logistics management in the enterprise. For optimal management of customer service it is necessary to have the proper information and this information should be collected, sorted, analyzed and distributed to the all participants of the supply chain according to their needs and wants.

Implementation of logistics information system in the company is an important financial investment, which should be focused on improving of the logistic objectives gaining in whole enterprise level. When deciding, management of each company should understand the information needs of logistics activities and linked them with the possibilities for further development and trends in business logistics.

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