

Logistics performance assessment

PÉTER LAKATOS – GYÖNGYI NÉMETH

Importance of logistics has become strategic today. Numerous wholesalers face the fact that delivery accuracy and ability is not enough to satisfy customer needs. On the market of pharmaceutical products, customers (pharmacies) try to be as liquid as possible. Wholesalers, in order to improve service level, have to analyse their performance and costs.

The use of performance measuring and controlling, completed with IT background, coordinates the aims of the different sciences and integrates them, so as to help the management in decision making. With warehouse optimization, the question of stock levels, with route optimization, the question of more deliveries per day is answered.

After analysing these options the result will tell the management the best way to reach higher service level. With the help of these sciences a company, a wholesaler can improve its performance; develop in hard economic situations by focusing on customers and the future.

Keywords: logistics, supply chain management, controlling, optimization, performance management

1. Introduction

The effect of the 2008-2009 world (economic) crisis is perceptible now: high unemployment rate, the Hungarian forint is also weak. Companies have to face the fact that not paying attention to their costs and performance will make them not being able to stay on the market. The customers' needs are unvarying or maybe they expect more than before. The best way to be profitable is to use the tools of management science. In this paper some of these options are mentioned and the methods how to use them for improvement or for reducing costs.

2. Importance and problems of logistics

Logistics is a continuously developing science. According to the Council of Supply Chain Management Professionals, "logistics management activities typically include

- inbound and outbound transportation management,
- fleet management,
- warehousing,
- materials handling,
- order fulfilment,
- logistics network design,
- inventory management,
- supply/demand planning and
- management of third party logistics service providers.

To varying degrees, the logistics function also includes

- sourcing and procurement,
- production planning and scheduling,
- packaging and assembly and
- customer service.

It is involved in all levels of planning and execution-strategies, both operational and tactical. Logistics management is an integrating function which coordinates and optimizes all

logistics activities as well as integrates logistics activities with other functions, including marketing, sales manufacturing, finance, and information technology” (*Council of Supply Chain Management Professionals* 2011). As we can see from the definition it is an interdisciplinary science which requires an integrated point of view.

Why is it important? Many companies recognize that they can save more money than they expected if they focus on logistics. A question is: how? First of all we should look at logistics as a management function. “Many companies are still in the process of defining specific scopes of the responsibility of the logistics function and gearing their service networks towards the customer needs” (*Antoni* 2012). There are well-known theories, like ‘Just In Time’ with which companies can reduce their cost and improve efficiency.

Nowadays the main problems are: how to optimize the processes, how to improve service level? Also the effect of pollution is getting more significant now. Firms, especially multinational ones, use controlling and a controller in order to monitor and to control the financial situation of the companies, as well as to measure performance and to prepare decisions. The controlling of logistics is appearing these days. In the following sections these instruments, their effective utilization and other important actors will be discussed.

3. Good supply chain manager

Labour is a key factor in the life of the companies. The employees and the managers are as significant parts of the firm as the heads of it. However, there is a gap between the interests of the managers and that of the shareholders (if there is separation between ownership and management). This phenomenon is the principal-agent problem. “The shareholders are the principals; the managers are their agents. Shareholders want the management to increase the value of the firm, but the managers may have their own axes to grind or nests to feather. Agency costs incurred when (1) managers do not attempt to maximize firm value and (2) shareholders incur costs to monitor the managers and to influence their actions” (*Brealey et al* 2006). There are a lot of ways to solve this problem and to reduce relating costs, but the best method can be to define a goal which has to be considered as the highest aim. The leadership and other managers’ interests can only be prevailed if these meet the highest aim.

As the importance of logistics has been growing, the supply chain managers also have been climbing the corporate ladder upper and upper. In line with this the directed area has been bigger, too. The supply chain manager (SCM) is a coordinator, a director, a controller, a core of identification, an alderman, a protector of interests, and so on.

But how can the SCM fulfil all of their obligations? Aside from the appropriate knowledge other abilities are also required. First of all there is a need of *system approach*: the head of logistics can assign any event or part of the process of the whole logistics process to the corresponding area, so they can prevent quarrels or arguments.

Obviously the *cost sensitiveness* is essential because the SCM is connected to the participants of the whole supply chain and has to know all of the expenses and costs which are related not only to the logistics department, but also to the full process. They have to obtain the ability to coordinate the financial approach of the leadership and the process point of view of the operation. With this skill, the new financial phenomena will be realized in a more effective way.

The prerequisite of *coordination* ability, the system approach, has been mentioned before. The basis of the collaborations among the departments can be defined as the followings: clarify the interests, sharing the tasks and finding convenient communication channels, then the problems of the joint areas will be solved faster without unnecessary arguments.

Need for the *problem solving ability* is quite different at an operational level. SCMs have to locate, prioritize and assign the responsibility of a problem if it occurs. A distinction

has to be made between the problem and the task: the problem is a situation whose solution is not known, the task contains the method of fulfilment (it has to be written in order to avoid unprofessionalism).

SCM, like other managers, has to organize their day, prioritize their tasks. On the other hand, delegation of tasks is also important, especially in the case of longer projects: fixed dates for meetings are essential. During *decision making* numerous methods can help analysing the options, like SWOT or risk analysis. A supply chain manager is a member of a group so communication and emotional intelligence (EQ) is needed to work together with not only the leadership, but also with the employees of the corporation (Hampell et al 2007).

4. Performance measuring, optimization and developing

Companies work with numerous data, information about production, output, etc., and they use different indicators assessing costs and the profit making activity of the employees, machines, etc. With performance measuring the management can inform especially the owners and the employees about how the firm works. The philosophy of performance management appears at this level. Performance management is a process which deals with mainly motivating the employees in order to reach the strategic goals of the firm.

In the case of logistics the most important is that the customer gets the ordered product in the best conditions. In this paper the service level improvement will be discussed with an example of a pharmaceutical wholesaler company. Pharmaceutical industry has special features: as it deals with medicines, the firms have to face a lot of obligations. The customers are not the end users (patients) but primarily are the pharmacies and the hospitals. To satisfy the needs of the pharmacies the wholesaler company has to know what the needs of their customers are as well as that of the end users (consumers). Pharmacies do not want to invest their capital in medicines and stockpile products because they prefer to be liquid. That is the reason why they give preference to those companies which can provide more transportation a day: they need a product to be ordered and handled as soon as possible to sell it to their patients. Naturally if a patient comes and the requested medicine is not available, the pharmacy might ask them to come back in the afternoon. The process is the same but the wholesaler has only a few hours to deliver the requested medicine to the right pharmacy.

If there are given conditions, like full range product scale at relatively high inventory levels, the needs of the pharmacies and the hospitals of the whole country have to be satisfied. At certain point a wholesaler company is not able to develop without the thought of investment and using such programs and methods like warehouse and route optimizers and logistics controlling.

4.1. Controlling and logistics controlling

The controlling (in Hungary) is a subsystem of management, a coordinative function which analyzes the company's capital and its liquidity, focuses on result planning as well as observes performances and expenses. Controlling is an information system for managers, it helps the management with planning and it represents control, as well. On the other hand it examines plan-fact differences. The controller is a partner of the managers, who shows variances and makes proposals. The controller is often a leader advisor within the company (Mészáros 2011). The major aim of controlling is to give information for the top management about the performance of the firm. The financial information is as important as the other indicators.

The controlling system contains the operative and the strategic controlling. Within the borders of a firm this may have other specializations which can complete it. These parts

concentrate on e.g.: project controlling, quality controlling, marketing controlling, logistics controlling, etc. This paper will focus mainly on logistics controlling.

4.2. Logistics controlling

The logistics major goal nowadays is to improve the customer service level, to satisfy the customer's needs in the best way. The logistics needs performance measuring, as well, but the philosophy of controlling and logistics is not the same, the differences can be seen in Table 1.

Table 1. Controlling and logistics

Compering criterion	Controlling	Logistics
Organizational function (mentality)	coordinate	integrate
Goal of the management	information	time
Central market character	owner	customer
Motivation	profit, free cash flow	profit
Performance	optimal decision	service level
Object of the optimization function	input-output	material and information flow
Utility	decision supporting	place and time, customer loyalty
Motivate the development	market competition	market competition

Source: Körmendi–Tóth (2006)

According to the logistics' way of thinking, controlling has to help the work of the management in:

- „logistics performances,
- vendor activities,
- production lead time,
- customer and product structure,
- logistics costs,
- orders” (Körmendi–Tóth 2006).

4.3. Project management

Nowadays operating with a project is not novelty. If a company wants to be efficient and to realize a higher level of profit, it uses the help of project management. We call project “every innovative investment, technical, product improvement, application writing task which has accurately defined strategic aim, and time-, cost- and performance parameters. [...] The project management does the managing, the organizing and the successful realization of the project” (Körmendi–Tóth 2006).

The market competition has established the situation in which individual aims and needs are in the centre. For a company it is essential to give answers to these arising environmental challenges. Project management accomplish this task focusing on individualism and innovation. According to these it increases efficiency so that the firm can react to the changes easier.

Project controlling helps the work of the project management:

- planning the process and the tasks of the project (for example with network planning), the tasks and the determination (for example with GANTT diagrams) of the part of deadline the tasks (mile stones)
- planning and programming of the expenditures of the tasks (living labour, costs, etc.)
- coordination of risk estimating (in the case of external advisory firms)
- realization of the task, the control of the expenditures according to the deadlines and

- informing the project management in time (for example about the missed deadlines, over driftings of the costs).

So project controlling helps the project management's activity in planning, in plan-fact realization controlling and in reaching current information related to the differences (Körmendi–Tóth 2006).

4.4. Warehouse and route optimizers

Due to the developing of information technology, optimizer programs ensure the even more effective processes in warehousing and delivery, as well.

First of all we should take a look at a warehouse optimizing program, Storeopt. The Storeopt was founded by Szeged Software Zrt. The program focuses on how to locate the products in a commissioning area in the case of a new and furnished warehouse. The main optimizing aspects are the followings:

- weight: during commissioning heavy products should be located below to avoid accidents,
- number of pickers: it refers to how many employees are working at the conveyor belt, the speed of the picking depends on the performance of the workers,
- place of storing: picking time depends on where the products are located, the direction and the length are also included in the cost of picking,
- exceptions: in the course of optimizing the program can take into consideration exceptions. For example, if two medicines have similar names or the same product has different weights, the probability of making a mistake is higher. Exceptions are used to reduce or avoid these mistakes.

Storeopt can decrease costs and improve picking velocity. If the firm doesn't want to reorganize the whole warehouse, there is a need only for relocating some products (e.g. in the case of special offers), this option is also achievable.

With help of route optimizer programs like Versys, which was founded by Iterion, the company can save money: there is no need for the delivery manager to always organize the routes again and again with lots of variables; the program can find shorter and faster routes, as well. The main aims of utilization are:

- quality correction of route plans: cost savings with complied restrictive conditions,
- to ease route organizing, making it faster and more flexible,
- more simple control and governance of the delivery subcontractors and
- support for analysis.

The program, estimating the cost of the deliveries, has a high quality scanning map on which the secondary and other smaller streets can be seen.

With these programs the company can operate in a more effective way and can satisfy the needs of customers more efficiently.

4.5. Establishment of a new warehouse – is it needed?

The aforementioned tools are crucial for modern company managements. Over a certain level growth one can speak about level-keeping. In some cases the firm cannot improve its service level without a more significant step. The examined pharmaceutical wholesaler faced this

fact. The company reached its full range product scale, the capacities were fulfilled. To reach higher service level there should be more deliveries per day because of the special needs of pharmacies. In the region of the original warehouse (logistics centre) the company accomplishes 2 deliveries per day, but unfortunately, because of the distances in the country, only 1 delivery can be fulfilled to the countryside. The wholesaler's choice is to test: whether it is worth establishing one more warehouse?

The utilization of controlling as a decision preparing factor of Versys, the optimization program to calculate the costs of deliveries and distances, and last but not least the cooperation of each manager. As this would be a significant investment it necessitates due foresight.

This task requires the process of project management which has 4 basic parts: in Table 2, the project life-cycle model can be seen.

Table 2. Project life-cycle model

Period	Main tasks
Preparation	Working out the suggestion Settling the project Marking technical area and business goals Analysing the feasibility Estimating the resources Preliminary contract negotiations Decision about the project launch
Project setting up	The project manager's designation and commission Creation of the organization and the operation the project General planning Refined resource plans Initial meeting and review Approval
Fulfilment	Detailed plans Allocation of work and acceptance Training and communication Formal supervision Analysing the results Problem management
Project closure	Show and accept the results Evaluation Surety and guarantee

Source: Chikán–Demeter (2006)

After analysing the present situation of the company, estimations can be made. One has to calculate unit costs (cost of producing one product or service), the costs of equipments. One example is given in Table 3: how much it costs to move one pallet (because the interest of the company for the date does not refer to the reality). When the assessment happened, the salary of the employee (who works with it), the materials (like electricity, accumulators, oil, etc), other related services (insurance, cost of maintenance and repairing) and depreciation, etc, have been taken into consideration.

The management has to decide every single characteristic which is needed for a new warehouse. The requirements have to match with the law and the Good Distribution Practice (GDP) of Medicinal Products for Human Use. This document is a directive, guideline from the European Union.

Table 3. Cost of moving one pallet

Moving a pallet	HUF/pallet moving
Pallet mover	100
Picking forklift	260
High picking forklift	310
Rotation very narrow aisle forklift	380

Source: own construction

How does this new warehouse affect the other, so called logistics centre? First of all, the most significant change will be in the inventory levels. The logistics centre has incredibly high inventories which has negative effects on cash flow. After establishing the new/regional warehouse there would be lower inventories, free capacities which could be used for renting. Moreover, the commissioning would work more efficiently because the employees could focus on their task better. In the region of the logistics centre the company could ensure 2 distributions for the customers instead of only 1.

Effect in the region – where the new warehouse would be located – could be that more and more customers could order from the wholesaler, so the main goal of the improvement of service level would be reached.

5. Conclusions

If a firm would like to be successful, it has to implement the sciences of management. The lack of these tools can bring failure to the corporations as continuous improvement and developing are essential. If the company just takes a look at their logistics cost, or even at the performance of their employees and machines, it can save more than it is expected. Due to the support of innovations of information technology and science, as Storeopt and Versys, faster and easier documentation or serving is available. Project management ensures the innovative role of the firm. Also motivation of employees, as performance management, is a core competence. In addition, using these without an expert management team is impractical. The interest and the strategy of the company have to be accepted by all of the personnel, this is the only way for reaching future success.

References

- Antoni, A. 2012: *Future trends/expectations in global value/supply chains*. Magyar Logisztikai Egyesület, Budapest, pp: 10–12.
- Brealey, R. A. – Myers, S. C. – Allen, F. 2006: *Corporate Finance*, 8th edition, McGraw-Hill/Irwin, New York, p 10.
- Chikán A. – Demeter K 2006: *Az értékteremtő folyamatok menedzsmentje*. Aula Kiadó, Budapest, p 135.
- Council of Supply Chain Management Professionals – CSCMP Supply Chain Management Definitions 2011: *Logistics Management – Boundaries and Relationships*. <http://cscmp.org/aboutcscmp/definitions.asp> [Accessed 15 October 2011]
- Hampell M. – Sebestyén P. – Lakatos P. 2007: *A vezető logisztikus*. manuscript.
- Körmendi L. – Tóth A. 2006: *A controlling elmélete és gyakorlata*. Perfekt Kiadó, pp 139–140., pp. 148–149.
- Mészáros S. 2011: *Logisztika controlling*, presentation, Szolnok.