INNOVATIVE SOLUTIONS IN SELECTED LOGISTICS COMPANIES IN SLOVAKIA

Silvia LORINCOVÁ, Žaneta BALÁŽOVÁ

1 Introduction

The most important goal of business activities is to make a profit. Production process or services interesting for customers with respect to their preferences: newness, distinctness, reasonable price, availability and user-friendliness in accordance with technical, economic and social progress are important to meet that goal. Innovations allow us to fulfil these requirements. The role of innovations is to create and launch new products and services onto the market assuming that strict requirements on product function, variability, utility, efficiency, quality, reliability, operating life, design and environmental characteristics as well will be met [7].

2 Innovations

According to Prno [12] innovation is a new, improved product or service launched onto the market based on the results of research and development or business activity; introduction of a new, significantly efficient production process or method of distribution including essential changes in technology, equipment or software; introduction of a new structure of organisation, workplace or external relations; knowledge transfer of the science and technology including identifying and defining research problems; improvement of methods used for quality control and testing products and services; improvement of quality and job safety, environmental impact reduction or more effective utilisation of natural sources of energy.

Innovation, according to Drucker [3], is a special entrepreneurs’ tool which helps to transform any change into an opportunity to start a new activity or to offer new services. In general, innovation is defined as a creative process in which two or more already existing things are combined in a new way for purpose of creating a new unique thing. The term is used to determine a new item, improvement, development, or changes of the original condition of some elements in real systems at all. Innovation is a tool to improve quality and performance [10]. It is a set of activities including creating new ideas and putting them into practice as well [4].
According to Spišiakova [16] four basic types of innovations are distinguished in the wide range of literature devoted to the issue of innovation:

- **product innovations** – new or significantly improved product regarding its essential characteristics, technical specifications, used materials, software, components, availability to customers and other functional characteristics is considered innovative products,

- **process innovations** – this type of innovation includes new or significantly improved production methods or supply and distribution systems. Significant changes in specific techniques, equipment or software dedicated to quality and efficiency improvement, manufacturing and supply flexibility, job safety or environmental impact reduction are parts of the innovation,

- **structural innovations** – innovations that includes implementation of new or significant changes in an enterprise structure, i.e. changes in management methods aimed at improving ways to implement the knowledge more effectively, product and service quality improvement, development of human potential. They include also changes in business practice, workplace structure or external relations aimed at improving the quality of innovative capacity of enterprise or performance characteristics, e.g. quality and efficiency of production processes and material flows. They are less dependent on technologies than process innovation,

- **marketing innovations** – it is an implementation of new or significantly improved product design (packaging) or selling methods aimed at improving product and service attractiveness or launching products into a new market. These innovations include significant changes in ways of buying and selling products and services including changes in design and packaging.

Traditional approach to innovations assumes that all innovative activities occur in enterprise. Subsequently innovations affect the product or service offered to customers. New approach, so called open innovations that provide not only innovative activities and ideas in the enterprise, has recently become more widely recognised. If the enterprise wants to implement innovations successfully, it is not enough to rely upon knowledge and ideas that it disposes of. Knowledge and ideas from the external environment, e.g. from customers, suppliers or other public resources must be taken into account, too [6]. The valuable information from the external environment can help the enterprise adapt to customers’ needs more effectively. Therefore if the enterprise does not want to lose the position in the market, it must pay attention to innovations. Logistics companies must adapt to market requirements as well. They must provide
services satisfying broad range of customers and their needs in order to make as big profit as it is possible.

3 Logistics Outsourcing

One of the most important conditions for successful business is the ability to concentrate on the activities essential for running the enterprise for long period of time, i.e. waste no time with activities that do not relate with the enterprise mission. According to Daňková [2] outsourcing is the ideal solution. It is a special form of cooperation concerning internally executed processes where the object of performance is agreed in a contract [17]. Maisner and Černý [8] complete the statement – it is a business relation generally sustained for a certain amount of time, usually for one calendar year. The principle of outsourcing is to assume responsibility for doing specific activity within an enterprise. This activity is based on bilateral contract defining the relevant issues – assent, relationship and mutual responsibility of both sides in all phases of business relation.

Outsourcing is both risk-based and principle-based. On the one hand there is a company planning to cut costs and on the other hand there is a company that want to make profit following the offered service [2]. The process when an external service provider is contracted for some selected service shows some advantages, namely [15]:

- **change of responsibility** – external provider takes responsibility for quality and proficiency,
- **high proficiency** – staff in the enterprise providing external services is experienced and skilled,
- **flexible adaptation to changing situations** – in case of the change in enterprise needs the external service provider can react immediately and provide services corresponding with new requirements,
- **lower costs** – the solution through outsourcing can cut costs in general, reduction of labour as well as logistics costs,
- **financial planning** – in terms of finances outsourcing offers two big advantages. On the one hand investment does not represent pressure on the budget forasmuch as services are planned over the long time-horizon, on the other hand there is an opportunity to plan investment in advance and arrange them over a longer period.
Some parts of management of the enterprise using outsourcing are given to the specialised company able to ensure that specific activities will be provided at the higher level of quality, faster or at lower costs. Nowadays outsourcing is utilized worldwide as one of tools of the strategic company management, namely as a tool of optimizing company resources consumption aimed at basic strategic company goals [17]. It is utilised in different areas, e.g. in logistics, human resource management, accounting as well as in many other areas. Logistics companies are outsourced to manage logistics activities in the area of logistics. They provide wide range of services associated with transport of goods that would be financially and otherwise difficult for the enterprise.

4 Innovative Solutions in Selected Logistics Companies in Slovakia

Logistics companies offer different types of services – standard, supplementary or individual solutions when specific type of transport or specific care during transport, e.g. of dangerous goods are required. Range of services offered by logistics companies must be adapted to customers’ requirements. Therefore it must be completed and moreover, the companies must be focused on innovation to attract customers.

4.1 DHL – Global Trade Services

One of the studied companies is the company DHL. It is the global market leader in logistics industry also well-known on the Slovak market. It commits its expertise in international express deliveries; global freight forwarding by air, sea, road and rail. With a global network in over 220 countries and territories across the globe, DHL is the most international company in the world and can offer solutions for an almost infinite number of logistics needs.

Every day, DHL Freight Slovakia transports shipments in total weight of more than 500,000 kg. Its fleet consists of more than 470 contract vehicles, suitable for any kind of shipment. Innovative solution is to check shipment delivery status online. It is not necessary to call customer’s service and you can reveal information about the shipment in real time together with the detailed tracking data within the DHL network.

Within express deliveries DHL offers international freight services as well as parcel shipping within Slovakia. The company ensures also transport of non-standard delivery products (overloaded or dangerous goods) according to certification rules of packages IATA and ADR. DHL is the company globally known for offering services in the area of transport but in case of need customers can also choose warehousing
solutions provided by the company as well. Available warehouse space is 325, 500 m$^2$, the area of more than 46 football pitches. DHL provides its clients with a wide scope of supplementary services, e.g. shipment preparation, packaging, insurance, weekend or holiday delivery, exclusive delivery, delivery notification options or personal pick-up.

At the present time the environment and its protection is in the centre of global attention. Therefore the company extends scope of services provided for customers who wish to protest the environment also during transport. DHL Global Forwarding, Freight expands its green service portfolio with a new tracing application on CO2-emissions. Registered customers are able to see the emission footprint of their shipments using DHL’s tracing websites. The reporting methodologies and calculation tools have been verified by the Swiss-based Société Générale de Surveillance (SGS). They are in line with the product standard “Greenhouse Gas Product Lifecycle Accounting and Reporting” from the well-known Greenhouse Gas Protocol as well as with the European Standard EN 16258 for calculation and declaration of energy consumption and GHG emissions of transport services.

Moreover, the company offers innovative complex solutions in different industrial sectors to meet needs of its customers. As the main logistics partner DHL provides services including supply chain, warehousing, interplant handling and aftersales logistics. DHL provides transportation and outsourced logistics services across all segments of the aerospace, automotive, chemical, consumer, energy, mechanical engineering and healthcare industry’s supply chain [www.dhl.sk].

4.2 Information and Communication Technologies in the Company DPD

DPD parcel shop is one of the leading international parcel service providers. At the same time it is a part of international shipping network and an expert in domestic market of shipping services which is focused not only on providing quality services but also on communication with customers, journalists or potential employees.

DPD entered the Slovak market in 2002 to continue in fulfilment of its objective: “To gain an important share in domestic and international market of shipping the parcels even in central and eastern Europe.” Growing requirements of the customers in the Slovak Republic are at present provided by the central sorting centre in Žilina and thirteen regional depots in Bratislava, Trnava, Nitra, Nové Zámky, Trenčín, Prievodza, Vlkavanová, Ružomberok, Rimavská Sobota, Poprad, Košice, Prešov and Humenné.

DPD offers its customers a wide portfolio of the services of a parcel shipper, from a basic standard to delivery on the second day in determined time. DPD is a road
shipper and this fact substantively saves the costs on delivery of the parcels, delivery times are comparable with air transport but at significantly lower prices.

DPD creates for its customers innovative on-line tool for comfortable shipment processing aimed at making the DPD activities easier and faster. This tool allows the customers comfortable process of the shipment from the order to the print of the labels or saving customer's personal shipping preferences for next time by means of address book.

Other innovative solution offered by DPD in order to increase the satisfaction of customers is DPD Predict. It is a unique service that allows consignees to prepare themselves even better for the delivery of their parcels. On the day of delivery consignees receive a message telling them exactly when their parcel will arrive. Depending on the individual country the time window lies between 1 hour and 6 hours. If the consignee is unable to take delivery on the specified day he or she has the possibility of having the parcel delivered on a subsequent day. Depending on the individual country this can vary between a maximum of 3 and 5 days.

New interesting service offered within the city of Bratislava is City Service. It is suitable for the delivery of urgent consignments, documents, samples or contracts which the sender needs to deliver to the consignee as fast as possible. Parcels up to the weight of 31.5 kg can be delivered with the product City Service and combining the City Service with the product Exchange Parcel the DPD clients may send urgent consignments, for example the already signed contracts, back immediately. After entering of the order on the customer line or by e-mail, the DPD courier will pick up the parcel within two hours and deliver it to the consignee. The service price depends on the place of delivery of the parcel and couriers accept also payment by credit card. DPD is the only logistics company running in Slovakia offering this innovative service and expands its portfolio of services to provide the highest service and quality standards worldwide and puts it in a perfect position to meet the requirements of customers [www.dpd.com].

4.3 Storage Systems of the Company DACHSER

International logistics provider DACHSER confirmed its leading position in European market conquering for the first time the pole position in the segment of groupage services in Europe. These results were published in the prestigious study “Die TOP 100 der Logistik 2013/2014” published by DVZ (Deutsche Verkehrszeitung) logistics magazine which brings comparison of logistics providers [9]. In this study, based on the audited turnover of companies for the year 2012, DACHSER placed for the first time as the largest provider of groupage in Europe.
DACHSER has also long held fourth place on the rankings of the largest German providers of logistics services. DACHSER European Logistics is active in 29 European countries, has more than 20 of its own country organizations, 169 DACHSER locations, as well as 153 partner locations. 21,650 employees are involved at any given time in connecting the flow of commodities, information and transport companies with each other. Its drivers cover about 1,176,000 km every night to serve customers – with set time schedules and highest logistics quality.

DACHSER entered Slovak market in 2004. According to data available from the year 2012, 92 employees are involved, at any given time, in delivery of 265,300 consignments with total weight of 127,300 tonnes. Because of customers coming from numerous sectors of industry and commerce the company DACHSER transport LTL freight (e.g. pallets, crates, entire machines or components), consolidated freight as well as partial and full truck loads. Three standardized product lines “targospeed”, “targofix” and “targoflex” cover the various requirements of the customers for national and European transport. With the help of detailed concepts and processes which are tailored to specific requirements in the area of so-called hobby stores or DIY industry, the company DACHSER transport goods from the USA and Asia to Europe by air and sea freight.

DACHSER Chem-Logistics presents itself as a reliable logistics partner for companies in the chemical industry. The innovative DACHSER IT system ensures quick and safe handling and management of orders in all locations. In addition, access to all transport data throughout the entire supply chain provides the customer with the highest level of safety even for the transport of chemical products. Logistics experts specially trained in the handling of chemical goods organize the worldwide transport of special products.

In the area of warehousing the company offers an extensive warehouse network with more than 1,500,000 spaces for Euro pallets in global branches with warehouses in Europe, North Africa and China. DACHSER stores all goods according to the individual, customer-specific and legal parameters. This includes proper sanitary handling of food items as part of food logistics, required temperature control (heating and cooling) of the goods, professional storage of dangerous materials, such as in industry solution Chem-Logistics, or tracking of the serial or batch numbers. In addition, DACHSER offers removal from storage based on customer specifications (serial number, shipping unit number and batch) or manual removal. Different storage systems, such as manual or automated pallet racks, shelving racks, or cantilever racks, are combined for various requirements of individual industries to create an overall consistent solution.
Besides mentioned services, DACHSER Logistics Consulting will develop customized logistics and warehouse solutions according to the customer’s requirements. Every company has its own way of functioning with its own distinct products, markets, business processes and logistics structures. Logistics experts with in-depth knowledge of products, industries and markets will design a sustainable model and put it into operation in a time-optimized manner. Two new lines of groupage service from Košice to Hungarian towns Tiszaujvaros and Budapest will certainly help meet requirements of customers within this service. Direct lines connect all major transport hubs in the region, therefore shipments from Eastern Slovakia are delivered across Hungary within 24 hours. Ing. Roman Stoličný, Managing Director and a Board Member of DACHSER Slovakia, says that owing to a new direct route system DACHSER optimizes transit time and transportation costs not only for the company, but primarily for customers, resulting in increasing its competitive advantage. The introduction of new connections is marked by DACHSER core values – entrepreneurship spirit and courage to be innovative [www.dachser.com].

4.4 Logistics Solutions for Returnable Packaging Flow in GEFCO Slovakia, Ltd.

The company GEFCO started its activity in Slovakia as a subsidiary of the PSA car manufacturer. It provides logistics services and distribution of Peugeot and Citroën vehicles in Slovakia. GEFCO provides complete, efficient logistics solutions for its industrial customers throughout the world. It is the European leader in automotive logistics that supports car makers and parts suppliers at all stages of the logistics chain. From vehicle distribution to customization, GEFCO has developed a complete range of high added-value services to meet the needs of industry professionals.

Within the service Overland Network Solution GEFCO inter-connects with the international platform network for both inbound and outbound road freight services. Comprising of 150 depots interconnected by 600 international lines, GEFCO operates one of the world’s largest integrated overland networks. Goods with the weight up to 2 tonnes are delivered by GEFCO using its regular shipping lines of groupage service.

GEFCO has designed efficient, innovative logistics solutions suited to the requirements and constraints of each sector to support manufacturers in managing and optimising their global logistics chain. With OverseaSolutions, GEFCO designs and implements door-to-door air or sea transport solutions without any weight limits or final destinations. Complete offer of customs and tax representation are obvious. GEFCO Special ensures all priority consignments are delivered for emergency orders and that require a direct delivery door to door, utilizing double-manned,
Packaging waste is a major source of environmental pollution. To reduce this waste, GEFCO has developed an innovative sustainable packaging solution, the GefBoxSystem range. With GefBoxSystem, GEFCO is helping to develop green logistics by providing customers with washable, reusable plastic containers that are more environmentally friendly. Equipped with 6.4 million handling units, GEFCO processes 40 million deliveries throughout Europe each year. The company disposes of 6.2 mils. reusable containers and 22 collection and washing centres all over the world. GEFCO manages flows and plans future requirements using a dedicated information system.

GefBoxSystem provides a range of services. "FullPack" is a one-stop, high added-value service that lets customers focus on their core business while GEFCO takes care of reusable packaging concerns. GEFCO provides a complete service, from the delivery of containers to suppliers to the collection and maintenance at the customer's plant.

GefBoxSystem solutions are tailored to each customer’s specific needs. With “FlowPack”, “FleetPack” and “FreePack” GEFCO manages all or part of logistics operations concerning containers, whether owned by the customer or not. GefBoxSystem uses pool effect, i.e. GEFCO handling units are used by several companies throughout Europe. Particular users are charged only for the time of using the unit and that way fixed costs are divided into several companies. Therefore, the solution is attractive for many customers.

In every aspect of the solution, GefBoxSystem meets customer demands in the area of sustainable development. By pooling and reusing industrial packaging, the system allows GEFCO customers to significantly reduce waste as well as the number of vehicles on the road. Container cleanliness and resistance are regularly inspected. GEFCO designs ergonomic packaging units to protect fragile components [www.gefco.sk].

4.5 Oil Industry Logistics

Transportation and storage of crude oil represent a strategically important component also of the Slovak economy, in particular of its energy sector. In Slovakia this activity is executed only by TRANSPETROL, Inc. via its oil pipeline network. TRANSPETROL, Inc. transported for its customers of 10,790,567 tonnes of crude oil
in total. The total volume of transported crude oil in 2009 reached the second highest level since 1999 and was higher by 16% compared with 2000.

In addition to the crude oil transportation, TRANSPETROL, Inc. is also involved in crude oil storage. The present capacity of stacks comes up to 680 thousand cubic meters and its major part corresponds with strict domestic legislative requirements as well as with the European standards in the field of formation and protection of the environment. Except the operative storage of crude oil for business partners, stacks serve as storage of crude oil for the State Material Reserves. In 2009, in accordance with the requirements of the crude oil customers, TRANSPETROL stored crude oil in the weight of 4,661,198 tonnes. It currently equals to a 90-day level of consumption of crude oil and crude oil products.

TRANSPETROL is in favour of applying of progressive information technologies which support safe operation of the oil pipeline system and the prevention of the environmental protection in the territory, it is located. The crude oil pipeline information system (COPIS) is developed as a spatial technical and environmental information system to support the control of the operation and maintenance of the oil pipeline system. TRANSPETROL kept on spreading the COPIS system by adding further geo – spatial data into the database of COPIS and improving of the COPIS system function. COPIS enables its users to gain picture information with tabular data about selected objects of the oil pipeline system, to evaluate the situation and the state of interactions of the oil pipeline system and the surrounding territory of interest, therefore to regulate the operation related to the maintenance and repair plan. Apart from COPIS, TRANSPETROL uses the Management Information System which informs “online” about the parameters of environmental performance, detects approaching to limit states and enables modelling of economic situations and strategic financial aims.

An information system and a system for the identification of oil spills, called LEOS, monitor the safety of the pipeline. The LEOS system identifies the exact position of leakage of even small volumes of liquid hydrocarbons in water-sensitive areas. The pipeline information system supports the evaluation of extraordinary events and the potential risks of interaction between the pipeline and the surrounding environment. The last accident on the pipeline system, caused by the third side, occurred in 2002 in the eastern Slovak village of Belža. The environmental protection system enabled TRANSPETROL to respond to the accident only three minutes after leaking started and therefore to eliminate the environmental pollution. Its disposal is not only time but also money consuming [www.transpetrol.sk].
5 Summary

We analysed five logistics companies in Slovakia. Despite the fact that each company offered different scope of services, they are identical in one thing – portfolio of their services must be innovated. Following table shows innovations in studied companies operating in the Slovak market according to the structure described by Spišiaková [16] mentioned in chapter 2.

**Tab. 1 Summary of innovative solutions in selected logistics companies**

<table>
<thead>
<tr>
<th>Type of innovation</th>
<th>Company</th>
<th>Specific innovation</th>
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<tbody>
<tr>
<td>Product innovations</td>
<td>DPD</td>
<td>- SMS notification about time of shipment delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- delivery of urgent consignments and their return shipping</td>
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<tr>
<td></td>
<td></td>
<td>- payment to DPD’s courier by credit card</td>
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<tr>
<td>Process innovations</td>
<td>DHL</td>
<td>- shipment delivery status online</td>
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<td></td>
<td></td>
<td>- tracing application on CO2-emissions</td>
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<tr>
<td>DPD</td>
<td></td>
<td>- on-line tool for consignment processing</td>
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<tr>
<td>DACHSER</td>
<td></td>
<td>- quick and safe handling and management of orders</td>
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<td></td>
<td></td>
<td>- two new lines of groupage service</td>
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<tr>
<td>GEFCO Slovakia, Ltd.</td>
<td></td>
<td>- logistics solutions for returnable packaging flow</td>
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<tr>
<td>TRANSPETROL</td>
<td></td>
<td>- crude oil pipeline information system</td>
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<td></td>
<td></td>
<td>- management information system</td>
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</tbody>
</table>

Source: [Own processing]

As we can see in the table, innovations in studied logistics companies were focused on process innovations. Only the company DPD implemented product innovations, too. Other types of innovations (organisational and marketing innovations) were not implemented by studied companies. On the other hand, in the research carried out by EurActiv.sk in cooperation with the National Agency for Development of Small and Medium-sized Enterprises within the project “Support of Innovation in Slovak Small and Medium-sized Enterprises” in industrial enterprises, process innovations took the third place, right after marketing and product innovations. Therefore we can state that innovation implementation is affected by various factors and one of them is the sphere of business activities. Nevertheless, the enterprises have to deal with innovations because all business activities are affected by them. Innovation can result in increasing competitive advantage of the enterprise and subsequent success in the market of goods and services [18-20].
6 Conclusion

The question “how to survive the market competition” is in the centre of attention of each enterprise subject. Business that wants to stay successful during this process must manage its activities effectively; therefore, it must outsource some specialists. Logistics companies provide mentioned activities in the area of logistics, e.g. they offer transportation services and the enterprise can perform its main business activity in a more effective way. At the present time logistics companies provide full scope of services to meet individual requirements of customers. However, offered services must be innovated continually in order to find new ways of successful marketing sustainability.

References


Resume

Whereas transport of goods was ensured by the enterprises in the past, nowadays there are logistics companies providing various solutions for transporting goods from producers to final customers. Constant innovation drives success and that is why logistics companies extend the scope of their services and provide more complex services. Economic aspect of outsourcing may not be ignored. The enterprise utilising outsourcing is able to spare money that can be invested in further development subsequently. Saving the time is other important aspect. Freight specialists select the
most appropriate services for the customer's requirements. Therefore, outsourcing is considered mature business strategy with positive effects on customers.

**Key words**

*Innovations, outsourcing, logistics companies*

*Ing. Silvia Lorincová, PhD.
Technical University in Zvolen
Faculty of Wood Sciences and Technology
Department of Business Economics
e-mail: silvia.lorincova@tuzvo.sk*

*Mgr. Žaneta Balážová
Technical University in Zvolen
Institute of Foreign Languages
e-mail: zaneta.balazova@tuzvo.sk*