

STANDARDS IN LOGISTIC – IFS LOGISTICS: DELHAIZE CASE STUDY

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Abstract: *Goods and people are rolling over roads and rails, cross the sea or to penetrate beneath the city. Transportation causes the occurrence of traffic. Transportation is the basis of the mobile world and Transport knows no boundaries. International standards set out the guidelines for the transportation service activity, telematic monitoring systems and freight traffic. This paper investigates the standards that are of increasing importance in recent years.*

Keywords: *Standards, IFS Logistics, ISO 28000, Tapa*

1. INTRODUCTION

Standards regulate the flow of data and harmonize complex technical systems, all in order to meet clients. Standards provide cross-border, comparable services and facilitate import and export. Standards are of great importance, and the topic of this work will be to describe one of the most important. The first one that has been reviewed is ISO 28000, which is specially developed for logistics companies and organizations that are handling the transportation. Then TAPA safety requirements in freight transport that determine the minimum threshold of eligibility standards for security in the supply chain that make trucks and similar activities. End of operation will be explained in detail the history of the development of the group IFS standards and the application of the IFS Logistic Company Share.

2. STANDARDIZATION

According to the Law on Standardization, standardization "activity on establishing provisions for common and repeated use, in relation to actual or potential problems, in order to achieve the optimal level of regulation in the present context," which includes the process of formulating, issuing and application of standards and on national, European and international level. The result of standardization of the standards as official documents, with the requirements relating to a product, a process in which the product is formed as a business or enterprise system established to perform a business activity that creates value (product or service) to the market (customers and end customers) and for owners.

Standardization may have one or more objectives which enable products, processes and services to match up with their initial purpose. The general objectives of standardization may be the

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achievement of readiness for purpose, compatibility, interchangeability, reducing the number of variants, safety, environmental protection and product protection. Other goals may be and health, mutual understanding, improving economic performance, removing barriers to trade and more.

3. STANDARDS IN LOGISTICS

The standard is a document established by consensus and adopted by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results in order to achieve the optimal level of regulation in specific areas. Standards are documented agreements whose contents are the technical specifications of other precise criteria to be used as rules, guidelines or definitions of characteristics with the aim of ensuring that materials, products, processes and services to fully meet its purpose.

3.1 ISO 28000 – security of supply chains

ISO 28000 was developed specifically for logistics companies and organizations that manage operations in the supply chain, ranging from producers, suppliers, distributors over logistics companies that provide freight forwarding, transport and storage to wholesale and retail. ISO 28000 requires organizations to consider the environment in which it works with the security aspect that bothers whether they are implemented adequate security measures and to identify the relevant legal requirements to which must be matched. The benefits of the introduction of this standard as internal (larger control over operations in the supply chain; larger efficiency; preparedness for emergencies; reduction of theft, breakage, criminal acts; prevention and reduction of economic losses) and external (increase competitiveness; possibility of participating in tenders; possibility of obtaining AEO status; increased confidence in clients and partners)

3.2 TAPA standard

Cargo crime is one of the biggest supply chain challenges for manufacturers of high value, high risk products and their logistics service providers. The threat is no longer just from opportunist criminals. Today, organized crime rings are operating globally and using increasingly violent attacks on vehicles, premises and personnel to achieve their aims. The Transported Asset Protection Association (TAPA) represents businesses fighting back against cargo crime that want to use real-time intelligence and the latest preventive measures to protect goods in the supply chain. TAPA is a unique forum that unites global manufacturers, logistics providers, freight carriers, law enforcement agencies, and other stakeholders with the common aim of reducing losses from international supply chains. Today, globally, TAPA's 700+ members include many of the world's leading consumer product brands as well as their logistics and transport providers with combined annual sales of over US\$900 billion, law enforcement agencies (LEA), insurers and other trade associations. The Association's Mission is to help protect our members' assets. TAPA's mission is to minimize cargo losses from the supply chain. TAPA achieves this through the development and application of global security standards, recognized industry practices, technology, education, benchmarking, regulatory collaboration, and the proactive identification of crime trends and supply chain security threats. TAPA Security Standards (FSR/TSR/TACSS) have been established to ensure the safe and secure transportation, storage handling of any TAPA member's (Buyer's) assets throughout the world. The Trucking Security Requirements (TSR) represents minimum standards, specifically for transporting products via road within a supply chain. TAPA TSR certification is discussed further in this document. The successful implementation of the TAPA Security Standards is dependent upon LSPs, Authorized Auditors and Buyers working in concert. However, the safe and secure transportation, storage and handling of the Buyer's assets is the responsibility of the LSP, its agents and subcontractors,

throughout the collection, transit, storage and delivery to the recipient, as specified in a release or contract. Where the TSR is referenced or included in the contract between the LSP and Buyer, the TSR is part of the contracted security requirements between Buyer and LSP, and shall be referenced in the LSP's security programme. Further, where the TSR is part of the contracted security requirements any alleged failure by the LSP to implement any part of the TSR shall be resolved in line with managing disputes under the terms of the contract negotiated between Buyer and LSP.

3.3.IFS standards (International Featured Standard)

Supplier audits have been a permanent feature of retailer's systems and procedures for many years. Until 2003 they were performed by the quality assurance departments of the individual retailers, wholesalers and food services. The ever-rising demands of consumers, the increasing liabilities of retailers, wholesalers and food services, the increasing of legal requirements and the globalization of product supply, all made it essential to develop a uniform process/service compliance, quality assurance and food safety Standard. Also, a solution had to be found to reduce the time associated with a multitude of audits for involved stakeholders. The associated members of the German retail federation – Handelsverband Deutschland (HDE) – and of its French counterpart – Fédération des Entreprises du Commerce et de la Distribution (FCD) – drew up a quality and food safety standard for retailer branded food products named IFS Food, which is intended to allow the assessment of suppliers' products/processes quality and safety in accordance with a uniform approach. This Standard is now managed by IFS Management GmbH, a company owned by FCD and HDE, and applies to all the post-farm gate stages of food processing. IFS Food Standard has been benchmarked with GFSI Guidance Document and is recognized by GFSI (Global Food Safety Initiative).

The first Standard of the IFS Standard family was IFS Food, which was launched at first in Germany in 2003. An updated version was published in January 2004, which was developed by French and German retailers. Within 2005/2006, the Italian federation joined the IFS Working Groups and the development of IFS Food Version 5 was a collaboration of retail federations from France, Germany, Italy as well as retailers from Switzerland and Austria. For the current IFS Food version 6, the International Technical Committee and the national Working Groups from France, Germany (for the whole German speaking area), Italy, Spain and North America have been actively involved, in addition to retailers, stakeholders and representatives of industry, food services and certification bodies from all over the world. Currently, IFS Food has been developed and supported by food industry from Austria, France, Germany, Italy, Netherland, Spain, Switzerland, USA as well as experts from other European countries, Asia and South America. It is the aim of most retailers and producers to have transparency over their whole international supply chain, including the logistical activities. Buyers and quality managers in retail and industry require more and more transparency about the way their products are treated in the logistics chain and they were looking for a solution. In order to prevent logistics companies from being overwhelmed by different requirements, the German and French retailers, supported by other international retailers, developed the IFS Logistics Version 1 in 2006. Version 2 was a collaboration of three retail federations from France, Germany and Italy and the IFS North America working group. The Standard is applicable for all types of transport: truck, train, ship, plane or any other types of transportation, temperature controlled or ambient stable. The IFS Logistics Standard applies to food and non-food products. The IFS Logistics includes all logistical activities like loading, transportation, off-loading, storage, handling and further distribution. Some of the companies that implement IFS are: Delhaize, EDEKA, ALDI, LIDL, Auchan, Metro Group, the US Food, REWE GROUP.

3.4 Implementation of IFS in logistics

Delhaize Group was founded near Charleoi, Belgium in 1867 by Jules Delhaize and his brothers Auguste, Edouard and Adolphe. He was helped in this endeavor by his future brother-in-law, Jules Vieujant. For their new company, they chose the lion, the symbol of strength, as their logo. They also chose a motto: unity is strength. As of 31 December 2014, Delhaize Group had a sales network (which includes directly operated, franchised, and affiliated stores) of 3,402 stores and employed approximately 150,000 people (excluding the stores and related associates of divested and discontinued operations). Store formats are primarily supermarkets, which represent 85% of Delhaize Group's sales network. Delhaize Group's sales network also includes other store formats such as neighborhood stores, convenience stores, and specialty stores. The company is actively engaged with the U.S. Environmental Protection Agency's Energy Star program to manage energy efficiency across its U.S. facilities-Delhaize is currently in the process of implementing the latest version of the IFS Logistics. By the end of the year this process should be completed. Below, we introduce the basic items of the IFS, and more will be handled those related to logistics.

Item 1 - Responsibility of senior management

Corporate policy / Corporate principles

Senior management is required to develop and implement corporate policy. Product safety, customer focus, environmental responsibility, sustainability and employees corporate should be taken into account.

The customer in focus-Documented procedures must be such as to establish and identify basic needs and expectations of the customer. Records of this process are evaluated and taken into account to determine the quality and safety of products.

Management Review-The company will identify infrastructure (at least annually) required to achieve compliance with the requirements for the product (eg, internal audit or control on the spot).

This review includes: wages, warehouses and storage, machinery and equipment, means of transportation, transportation unit and transport containers. Results of the review should be taken into consideration (taking into account risk) for investment planning.

Item 2 - Management system of product safety and quality

The basis of the company's control system security products will be fully implemented, systematic and comprehensive risk management and / or HACCP system. For food to be used and the HACCP system will be based on the principles of Codex Alimentarius. Risk management or HACCP system covering all product groups, as well as all processes from goods receipt to dispatch and delivery. Risk management / HACCP system will describe the difference between the logistic handling unpacked and packed products and between controlled temperature and ambient stable products. The company will have a team of risk management or HACCP team, which is multidisciplinary. The team will have strong support from senior management and members of the team will know in detail the activities in the entire building.

Item 3 - Resource management

The organization will implement a documented training and / or teaching programs. Records of the training program shall include: content of training; the frequency of training (in terms of food safety / hygiene least once a year, for non-food once every two years is sufficient),the tasks employee, a list of participant, languages, qualified trainer / teacher - an evaluation methodology (measuring the effectiveness of training and training programs). Basic training for security products must be carried out before starting work.

Documentary requirements related to the personal hygiene, and where there is need, infection control. These include as a minimum:

- Method of cleaning and disinfecting hands
- Eating and drinking
- Smoking
- Measures to be taken in case of cuts and skin damage. (Not a problem when it comes to packaged products)

Item 4 – Realization of services

General requirements for storage and transport:

- Review of contracts and communication: All requirements defined by the contract between the parties must be established and agreed upon prior to the conclusion of the supply contract. All data changes in the company Delhaize deals with the operational department.
- Suppliers and service providers: There are procedures for monitoring and evaluation of suppliers and service providers. Process monitoring includes the assessment of risk based on several criteria. Results from the evaluation of suppliers must be regularly inspected at least once a year.
- Particular requirements for materials handling: IFS special attention to what of goods allowed and what should not be stored together and transported. Traceability is one of the most important system that has been established. Responsible persons in the Company at any time know that the quantity of goods delivered / supplied, and from which supplier / pc retail store. Thanks to the RF technology at any time have all the information on the goods placed in the warehouse, so they shipped the first products with the shortest shelf life.
- The distribution center products are appropriately labeled (For example. products containing allergens must be stored and transported separately from products that do not contain allergens, in order to avoid contamination. The packaging of each product in bold are the names of allergens, in order to avoid confusion)
- The receipt of goods in the warehouse
 - The process defined work instructions.
 - Sectors the company responsible for the effective implementation of these operations are the logistics sector and category management.
 - All Processes that are implemented (eg. Fresh meat) defines a flow chart. It is implemented hazard analysis, critical points are mapped to and for each of them determine the corrective action.
 - The form of the receipt of the control truck in the warehouse. This document states that the conditions a truck carrying fresh meat must fulfill controller.
 - Conditions in the vehicle must be checked before loading and documented in order to ensure compliance with specific conditions. If any of these conditions is not respected technologist returned goods.
 - When loading vehicle, fill out the form on the records of hygiene and temperature conditions of the vehicle at the loading.

- Enter data: on carrier, registration number of the truck, whether the truck clean, if installed termomouse etc.
- Termomouse - a device that reads and records the temperature data during distribution. What is particularly significant-temperature during transport and storage must be the same, in order to maintain the cold chain.

IFS seeks to list a specific critical points. When it comes to the storage of goods, then this is the temperature. If you do not comply with certain conditions to be completed Record for the return of the fresh meat. The temperature in the warehouse is read every 2 hours. For example, raw meat must be stored at a temperature of 0 to 4 degrees C.

When the fresh meat is being delivered, there is a quality control prior to the acceptance. What is characteristic for the company Delhaize is to check the goods carried out in two places, upon receipt of the goods in the warehouse and in the retail store. At least 20% of acceptance volumes must be sent for verification. Sampling is conducted randomly with pallets, to prevent the possibility of abuse

Item 5 – Measurement, analysis and improvement

Internal audits are conducted according to the relevant application. IFS points out that there must be a complaint handling. There are procedures for managing non-compliances and nonconforming products as well as for withdrawal.

Item 6 – Protecting Food and external inspections

The person responsible for the preservation of food is part of the key personnel or has access to a team of top management.

Oblates frequency of these checks is determined on the basis of risk analysis and assessment of associated risks. Risks will be evaluated by competent personnel. On the basis of risk assessment and legal requirements to identify the areas that are critical to safety.

4. CONCLUSIONS

Today, standards are a prerequisite for successful business of any company. They enable them to achieve better contact with customers to distinguish themselves from the competition, to secure a better position in the market. Also, standards show that their goods are safe, that they meet conditions related to the transportation and warehousing. The standards are to take special consideration by the companies, because all the tenders need to meet those standards. Therefore, every company's goal is to meet those standards and organize their workload according to those standards. Considered to be among the IFS standards, which is increasingly applied. They are used by companies primarily in Europe, but they are more and more present on the markets of America and Asia.

REFERENCES

- [1] <http://www.tapaonline.org/standards>
- [2] http://www.iso.org/iso/catalogue_detail?csnumber=44641
- [3] <http://www.kvalitet.org.rs/standardi/standardi>
- [4] IFS Logistics Version 2.1.

SIMULATION ANALYSIS OF ORDER PICKERS WORKING SHIFTS: THE CASE STUDY OF MILŠPED

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Abstract: *The trend of increasing frequency and decreasing the quantity of goods in each delivery, as well as shorter deadlines for these deliveries, sets a difficult task in front of logistics providers, whose primary field of work is providing these services. Shifts scheduling and determining optimal number of the order pickers can significantly contribute to an adequate response to these requests. There are many different methods and tools that could be used in this purpose, and one of them is simulation. The advantage of simulation is reflected in the fact that the right model can represent a real system, with a possibility of changing different model parameters in order to obtain the best possible solution to the given problem. This paper covers the creation of order picking subsystem model in Milšped company. Before model creation, preparation of input data obtained by processing the received orders in the company, on an annual basis, is needed. By changing certain parameters, such as the number of workers in shifts, their efficiency and shift intervals themselves, and after processing the output data, decision can be made on which solution is the best from a set of simulated scenarios. By correcting model and taking into account all the factors while creating it, can contribute to a better projection of a real system functioning through simulation.*

Keywords: *Milšped, order picking, shifts scheduling, simulation model*

1. INTRODUCTION

The purpose of a simulation is to determine the information on real-world system using a model with the aim of their optimal planning and utilization. The computational modelling is the most economic mode of complex system simulation for this purpose. A simulation is a very powerful tool providing high-quality of logistics system analysis, quantification and dimensioning.

The elaboration of these models is significantly facilitated by the development of simulation software packages and one of them is FlexSim, which was used for simulation analysis of order pickers' working shifts in Milšped company. FlexSim belongs to software group being used for modelling systems whose states are changing in discrete time moments as a consequence of some events' realization. Some of the specific problems that could be solved by it are: improvement of efficient utilization of existing resources, reduction of queues and time spent in them, alternative investment project analysis etc. (Banks et al., 2005).

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