Pick by line process in the logistics company with the impeachment application

Magdalena Drewniak
Faculty of Management, Czestochowa University of Technology, Czestochowa, Poland
E-mail address: mdrewniak@wp.pl

ABSTRACT

This article addresses the issue of the Pick By Line Process used by the logistics company, with the impeachment application, that is the improvement implementation in the PBL distribution channel, by developing the system solution to ensure a uniform distribution of the assortment line in the absence of 100% of assortment by the supplier, in order to improve the product availability for the customers in the aforementioned situation. In the logistics company, the modern solutions were used to monitor the functionality of limiting the stock status of goods, as well as of increasing the warehouse capacity in the number of the assortment lines. The method of quantitative observation was used to develop the program concept at the aforementioned workstation based on available literature.

Keywords: Pick By Line, management, logistics, commercial network, warehouse of goods

1. INTRODUCTION

The term of logistics along with development and application of the logistics concepts have a relatively rich origin and tradition worldwide. The various sources of origin and development of the notion of "logistics" are mentioned in the literature of the subject. Intensive research on this issue was first launched in the United States and later in the Western European countries, which led to numerous interpretations and emergence of many terms and theoretical concepts in this field (P. Blaik, Logistics, PWE, Warsaw 2001, p. 37).

The logistics centre is a spatially functional facility with its infrastructure and organisation, where any logistics services related to the receipt, storage, distribution and
delivery of goods are being realised, and any accompanying services provided by the business entities independent from sender or recipient.

The efficient product relocation is the creation of the modal nodal points in the logistic network, commonly referred to the logistic service centres. Transitional form of creating such logistic service centres was the integrated storage warehouses, also called storage districts.

The development of logistics is mainly related to development of the economy, which must meet any customer expectations and make profit. Cost reductions and widespread globalisation are the main inspirations to build such centres, as they contribute to the increase in efficiency and effectiveness of the logistics processes, as well as to the customer satisfaction – the complexity of service. They are able to concentrate any investments in the logistics infrastructure and investments in production and distribution.

The creation of the logistics centres may be also associated with a poor location that can cause traffic congestions, generate freight traffic through city centres, destroy urban roads, not adapted to heavy freight traffic. The logistics centres focus on applying the impeachment application method that is the system approach as a whole. Such systemic approach is also any designed and planned activity, for which standards of execution have been developed and any unambiguously executive schedules have been established. The systemic approach ensures predictability and repeatability of any activities in the process and enterprise.

The entire Pick By Line process is very important from the point of view of the delivery date, as the distribution centre is only a temporary owner of the product. The customers themselves send an order directly to the manufacturer regarding the demand of the individual sales points and on the basis of the delivered goods, the warehouse prepares the goods for the individual units. This method requires large storage areas, where the goods are immediately distributed to the various commercial outlets.

2. PICK BY LINE PROCESS

The most important activity in distribution and logistics is planning, which should be based on already proven values and numerical indicators. Without good planning, it is not possible to efficiently operate the distribution centre. In order to optimise costs, good cooperation between the various departments of transport, storage and administration is required. In case of decision-making by any individual departments on their own, the centre will not achieve success.

The Pick By Line process is every activity performed in the warehouse in relation to the goods preparation for the further shipment. Indeed important matter in the whole storage process is to smoothly plan throughout, in order to optimise costs.

The internal logistics of each distribution centre is based on several basic operational activities (Figure 1). Logistics is therefore an organised system of planning, implementation and control of the physical flow of goods from the place of their origin to the place of their consumption, along with any information streams assigned to them (Kompendium wiedzy o logistyce, E. Gołembska (Ed.), PWN, Warsaw 2004, p. 25-30).

Any operational activities at the logistics centre are based on the control of the basic technical and economic processes in the sphere of the commodity flows, within each structure, and the potential and needs for rationalisation of these processes. The distribution centre has three zones (Figure 2).
The admissions office, also known as the reception area, is dedicated to the operational and technical activities of receiving materials and goods. It is the first and basic part of the
warehouse. The second important area in the warehouse is the storage area, which is responsible for a proper storage or temporary storage of stocks for a fixed period of time. In this zone, the orders are executed, which then go to the third zone that is the release zone.

The last zone deals with the goods packaging, preparation of any appropriate warehouse documentation and the goods transport outside. The point element of the logistics infrastructure is the logistic centres of the highest degree of complexity, as they consist of the most diverse links (Table 1).

In any logistic centres and warehouses, there occur storage of goods and are realised the main logistics functions related to supply, production and distribution. Each enterprise using those services possesses there their own centres of supply, installation and distribution.

3. STORAGE MANAGEMENT

The warehouse is a place, sometimes virtual, through which supplies enter and materials, goods and finished products exit. The warehouse is a link in the logistics system, where goods are temporarily stored and directed to the next supply chain. Warehouses can be both the supply and delivery points, as well as the points of concentration or distribution of the product flows in the logistic system. The processes of storage and shipment are taking place in the warehouse. Any dominance of each specific process depends on the function of the warehouse. The required functions fundamentally influence the location, technology, and the work organisation used in such warehouse (503-514).

In the said logistic company, the main warehouse program is the WMS program, aimed to record and analyse all the activities carried out within the entire storage area. It concerns the monitoring of the flow of goods across the whole multi warehouse system.

The registration of every delivery is preceded by issuing an appropriate document, which causes the fact that one issued document becomes one delivery of goods. Any delivery prior to its acceptance is controlled for the compliance with the proper order of the company. The warehouse manager carry out checks, then he writes down the results of his inspection on the CI paper documents. Each stage of acceptance, storage, complementation and release affects the size and manner of forming the warehouse. They form separate systems, so called the Warehouse Functional Zones.

Accepting any product entering the warehouse is an activity, which starts at the moment of its delivery. The main tasks performed while accepting goods are the following (Table 2).

The applied system in the discussed enterprise, WMS, allows for quick handling of logistics processes in the warehouses of various sizes. Thanks to the division into variants of different advanced stages, this system is also used in the warehouses of different modules.

The warehouse management deals with all decision-making processes that affect the warehouse assortment levels.

The WMS transport module is responsible for carrying out unit shipments between two storage locations using the PDA terminals or a piece of paper. Realisation of the transport order in the system is based on the appropriate scanning of the transport edge points (scanning of the relevant bar codes of physical spaces) by a laser scanner located at the terminal or by a hand scanner (in the case of a piece of paper) and simultaneously on physically transportation of the unit. During carrying out some transports, it is also required to scan the bar code of the transported unit, which is an additional accuracy control of the process.
Table 2. Basic tasks related to receiving goods into the warehouse

<table>
<thead>
<tr>
<th>WORKS</th>
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<tbody>
<tr>
<td></td>
<td>Unloading</td>
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<tr>
<td></td>
<td>Sorting</td>
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<tr>
<td></td>
<td>Identification</td>
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<tr>
<td></td>
<td>Preparation of goods for storage</td>
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<tr>
<td></td>
<td>Delivery to storage area</td>
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<td></td>
<td>Reception of goods from reception area</td>
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<td></td>
<td>Arrangement of goods in the storage area</td>
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<td></td>
<td>Storing goods</td>
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<td></td>
<td>Periodic inspection</td>
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<tr>
<td></td>
<td>Transfer of goods to the picking zone</td>
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<td></td>
<td>Release of goods</td>
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</tbody>
</table>

The logistics centre is equipped with the high storage shelves, means of transport and computerised Warehouse Management System. The logistic centre area is guarded and monitored. Each product has its own precise location, to which the shortest path is determined by the computer. Internal transport is carried out using the modern forklift trucks. The centre has the modern office space, which is available to its customers. Each office is equipped with a computer network and the high-speed Internet access.

The warehouse documentation is maintained in order to properly manage the flow of materials or goods, materials and finished products held by certain entity. It is the head of unit/owner of the company, who determines any form of and obligation to keep the stock records. Generally accepted documents, confirming movement in the warehouse, are (Table 3).

Table 3. Basic documents in stock trade

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<tbody>
<tr>
<td>PZ</td>
<td>- take from the outside</td>
</tr>
<tr>
<td></td>
<td>(Document used for material purchase and free admission)</td>
</tr>
<tr>
<td>PW</td>
<td>- Internal adoption</td>
</tr>
<tr>
<td></td>
<td>(Document used to receive material from the unit of the company)</td>
</tr>
<tr>
<td>MM</td>
<td>- transaction of the interurban</td>
</tr>
<tr>
<td></td>
<td>(This is a basic document that confirms the movement of materials between inside stores, in which both warehouses are composed)</td>
</tr>
<tr>
<td>WZ</td>
<td>- end outside</td>
</tr>
<tr>
<td></td>
<td>(A warehouse document used to document the distribution of material for sale or for free distribution)</td>
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<td></td>
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</tbody>
</table>
| RW | -Internal expenditure  
(A document confirming the release of materials for the internal needs of organizational units and enterprises) |
| ZW | -interior return  
(Document ZW is the basis for documentation of material return) |

The warehouse documentation consists of every electronic or paper records related to the work of the warehouse. Is is done due to realisation the properly process the flow of goods and materials stored therein. Applying the proper manner of documentation makes it possible to efficiently keep receipts and distribution of the goods, as well as the size of their states. Such record also provides information on the different types and phases of the warehouse turnover.

4. CONCLUSIONS

The logistic infrastructure network enables to move goods and to perform operations on them, at the time when shipment does not take place. The article reviews the storage and the characteristics of the flow of goods in the warehouse. The basic warehouse tasks led by the decision-making body were presented. There is a huge relation between them, which fosters the relationship between functions and their task too. As the confirmation of the aforementioned relations, there is the fact that the classic task of the logistics centre is to realise the integration functions that guarantee the synchronised flow of resources necessary to control the flow of information. The distribution centres focus primarily on the storage, repackaging and monitoring of any goods. Due to the fact of the convenient location potential, allowing cooperation of many specialised enterprises, the logistic centre guarantees the optimal logistic service and thus the highest level of the customer service. The essence and role of the modern warehousing systems, operating in the logistic supply chains was presented.

References


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