

Economics

If you draw a parallel between "Belwest" and "Nike", the disadvantages of the former and the advantages of the latter become apparent. Namely:

1. "Belwest" pays insufficient attention to high-tech solutions.

Information system SAP ERP has been implemented by "Belwest" only recently, while "Nike, Inc." has used it for a long time. Despite the positive effect of the introduction of this system, it is not enough for the most effective optimization of economic activities of the organization. "Nike" uses a number of high-tech solutions to ensure the most efficient operation of various departments of the company.

2. The company is not seeking to transfer the production part of the company in outsourcing, while "Nike" did it shortly after its founding. Recently, part of "Belwest" production has been made by a third party in China, but this was done only because of the fact that the Belarusian industry could not cope with the volume of production, grown in times due to good marketing policy.

As the experience of "Nike" shows, the transfer of production of the company to a third-party organization leads to benefits only.

3. "Belwest" does not extend sales geography.

The main directions of foreign economic activity of the company are the CIS countries (Russia, Latvia). "Nike", in its turn, takes full advantage of the globalization of the world economy and trade almost all over the world.

4. Insufficient use of the World Wide Web by "Belwest."

Online buying of the company's products is available only on the territory of the Republic of Belarus [<http://belwest.com/>]. There is no possibility to customize the product before buying. "Nike" has actively used online sales for a long time and the geography of online-shopping for consumers of this brand is much broader. Moreover, on the official website of the manufacturer "Nike" [<http://www.nike.com/>] it is possible to customize the goods before buying, i.e. to create a unique product from standard components using various combinations thereof. This is primarily due to well-organized logistics and flexible production (pull type).

The following conclusion can be drawn from our analysis. In order to improve the integration of the company "Belwest" in the international logistics network, it is necessary to implement high-tech solutions actively to optimize all processes and a logistics system as a whole, to transfer the production to third parties throughout the world, to expand the geography of sales, as well as to develop online trade.

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INTRODUCTION OF THE JOURNEY MONITORING SYSTEM IN THE PUBLIC TRANSPORT

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The article describes the automated monitoring system of public transport. Here it comes about the device structure, functions and the principles of operation of the device, the advantages and disadvantages of its implementation in the motor activity of enterprises engaged in passenger transportation.

Motor transport enterprises occupy an important place in the economy of the state. Along with the shipping of cargoes the carriage of passengers, which are carried out by public transport is not in less demand. Functioning of trucking companies is now continuously improving through the introduction of information systems. One example of such systems is the automated control system of travel.

Automated control system of travel is a single set of hardware, software and administrative measures that can be divided into the following subsystems:

- travel documents;
- the sale and distribution of tickets;

- monitoring and redemption of tickets;
- collecting and processing information.

The purpose of the introduction of the automated control system of travel (ACST) in passenger transport is to increase the quality of service for passengers and reduce the load on the local budget without increasing the tariff fare.

Consider the structure ACST in more detail.

1. The travel documents

Subsystem travel documents are a basic subsystem, the effectiveness of which largely determines the overall efficiency of the system. The subsystem consists of travel documents:

- the range of media types of tickets (magnetic card, contactless smart cards);
- the range of types of tickets (tickets for the "number of trips", seasonal, free);
- mechanisms to protect against counterfeiting of tickets.

As the main carrier of tickets for ACST paper map of ISO with highly coercive magnetic stripe (Fig. 1) is used.



Fig. 1. Chart Appearance and free boarding pass printing with the validator about trips on the reverse side

Source: [1].

2. The sale and distribution of tickets.

Subsystem of the sale and distribution of tickets is a mechanism of fare pay. In ACST tickets are sold:

- at the tickets sale terminals;
- by the drivers at the transport cabins;
- through a network of agents, distributors.

Free boarding passes are issued in specialized outlets of discounted tickets.

3. Control and redemption of tickets

The maximum effect is achieved by collecting fare when combining control devices and redemption of tickets (validators) devices with limited runs in the interior of the vehicle – turnstiles. Validator is a quick-detachable device which a driver gets in the control room before going out on the line and gives it back to a dispatcher after the shift. In the vehicle validator is installed into the mounting sleeve, which is mounted on the technological rack. To keep the validator safe it is locked in the mounting sleeve with the help of a key. If the vehicle is operated without the validator assembly the basket is plugged.

Turnstile is mounted on specially installed handrails and, unlike the validator is present in the vehicle permanently. During a power failure (also in case of emergency) rod turnstile bar, obstructing the passage gets down automatically (free exit of passengers from the vehicle is provided). After turning on the power the rod is raised by hand and fixed in a horizontal position automatically.

Validator processes the information that is recorded on magnetic tickets. If the ticket is being checked, then the validator turns on green lights enabling signal, produces a melodic sound that makes a note on the ticket turnstile and gives permission to pass. If the ticket is not valid, then the validator notifies about that with the red light and sharp sound.

Layout of the validator, mounting basket and turnstile is presented in figure 2.



Fig. 2. Layout (left to right) of the validator, mounting basket and turnstile

Source: [1].

The print on the ticket is produced by burning of the applied thermal layers, making it impossible to cleanup the mark.

4. Collection and processing of information

Without a control center where the monitoring of turnover tickets, passenger traffic and operation of the devices is being carried out it is not possible to get the effect of the introduction of ACST.

Kernel of the subsystem is a single processing center serving the enterprises for collecting the income and all transport operators.

In the center of the processing the following procedures are carried out:

- collecting data on traveling, ticket sales, issuing free tickets;
- maintaining centralized databases of passengers carriage, ticket sales, holders of discount tickets;
- formation of statistics on the carriage of passengers, ticket and issue free tickets;
- control over circulation of tickets in order to identify "suspicious";
- automatic generation and distribution of a stop list transport operators ;
- maintenance and distribution of regulatory and reference and control information.

Traveling data come from the control (from management server) fleet once a day at the end of the operational day of a transport operator. These data include information about suitable tickets and the tickets canceled according to the stop-list, and tickets canceled by the validator.

Data on sales of the tickets at ticket sales terminal through a network of distributors and agents and on the issue of free tickets come from the control of the revenue collection enterprise once a day at the end of the operational day.

On the basis of data concerning made trips "suspicious" tickets, which are recorded in the stop list are detected.

Formed stop list and updated directory of tickets are sent to the server fleet management of a dispatching motor company for subsequent loading into validators once a day. According to the information about made trips, ticket issuance of free tickets is generated and statistical and analytical reports are printed [2].

Automated control system of travel allows:

- to determine on each route real hourly passengers' demand in the transport and change the number and schedule of buses on each route in accordance with the identified needs;
- to supervise the work of the drivers on the line, including the implementation and execution of flight schedules;
- to stimulate the transport organizations, to raise the level of services provided;
- to bring passenger transport on the modern technological level.

Automated inspection technology of passage solves the following problems connected with public transport:

- 1) to eliminate stowaway passengers;
- 2) to take into account the operational performance of transport work;
- 3) to determine the need of passengers in transport;
- 4) to accurately take into account the carriage of beneficiaries according to different categories and make out reasonable bills for compensation of "drop out" income;
- 5) to monitor the implementation of trips by drivers.

However, the automated control system of travel has several disadvantages. The main of them are: the operation of ACST requires significant additional costs; strong slowdown boarding. The latter is due to the limitation of the entrance only the by front door, the necessity to go through the turnstile and purchase tickets from the driver. Small space in front of the turnstile allows the driver to start moving without waiting passengers pass through the turnstile. Long lines to land, especially in bad weather and during peak hours are inconvenient for passengers. People with disabilities and passengers with prams can not cross the turnstile and still enter through the middle door (there is usually a ramp for arrival). Thus, the logic of the "front door" is violated [3].

The introduction of the automated control system will optimize the work of the motor transportation enterprise, improve the quality of services and automate accounting of data and their processing.

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RESEARCH OF MATERIAL FLOW WITHIN THE ECONOMIC ASSESSMENT OF THE SUPPLY CHAIN OF CHEMICAL PRODUCTS IN THE REGION

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In the article we offer the order of material flow research which is carried out within the framework of economic assessment of a supply chain. The offered order is approbated on the example of the supply chain of chemical products in Vitebsk region.

The importance of an effective product flow management is defined by the size and dynamics of the turnover of material and financial resources. It has an essential impact on economic results of business processes. Nowadays scientists-economists and enterprise experts pay much attention to the problems of improvement of a product flow management. However, for all its indisputable importance, the theoretical elaboration of this problem isn't completed. Therefore, the formation and approbation of research-and-development phases of material flow is important today.

The foundation of a supply chain is the material flow. It's formed by transportation, warehousing and other operations with raw materials, semi-processed products and finished products. Therefore, the material flow – material resources, semi-processed products and finished products apply logistics operations such as embarking, unloading, packaging, transportation, consolidation, etc. [1, p. 124].

The material flow can be a stock of material resources, unfinished production, finished products if it isn't in motion. We should notice that each financial and information flow corresponds to its material flow. There is no due attention to the research of material flow in the system of a supply chain management. Experts almost don't study the capacity of flow, analyze the origin of "bottlenecks", and calculate logistical costs. The author offers her own vision of research of material flow processes.

Considering that chemical production in the Republic of Belarus is one of the leading fields of economy, its manufacturing and sale is realized in a complicated supply chain, we choose it as the object for research of flow processes in the region. We propose to pursue research on the following stages:

1. Select products of chemical industry for research. Primarily we select strategically important products for the region, then a large percentage of products in the output, products with marketing difficulties and low-gain products.

2. Analyze material flow according to selected parameters. Considering that the component of the supply chain of chemical products is the manufacturing enterprise, we pursue our research specifically in reference to the manufacturing enterprise.

3. Conclusion.

The performance measures of import and export material flow are demonstrated in the table 1.