

Practical experience shows that use of graphical method is very convenient and visual when forming operational daily plans for facilities completing. This will require drawing time axes to display the time of structures installation on site, the time when loading points in warehouses are busy, and the trucks operation time.

Conclusion.

The described method helps to implement the Just in Time concept and use its main positive aspects when planning buildings and structures construction using "just in sequence" installation technology. This takes into account, the actual status of all subsystems involved in facilities completing, production technology, employment, construction equipment, and transport. The practical experience of using this method shows that there are always several options for reasonable plans. The choice of the best of them is determined by specific conditions and options, both at construction sites and supplier plants and transport units.

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#### **DEVELOPMENT AND LOGISTICS OF E-COMMERCE IN THE WORLD AND THE REPUBLIC OF BELARUS**

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Recent years have seen an increasing development of e-commerce This is facilitated by scientific and technological progress in the field of information technology and electronics. E-commerce is an area of economic that incorporates all financial and trade transactions performed using computer networks, and business processes linked with performing such transactions.

E-commerce enables making purchases, sales, service, marketing activities, individual commercial transactions through Internet and computer networks [1].

Today, the latest Internet technologies and the global information network open up not only technical, but new economic opportunities as well.

Current progress in communication technologies have led to the creation of a global electronic environment for economic activity, which, in turn, has provided with new opportunities for the growth of e-commerce as a new form of organizing trade and economic activities of economic entities [2].

In 2020, China became the world's largest e-commerce market with e-commerce sales volume of \$1.935 trillion, which is up three times against the United States ranking second with \$586.92 billion [3].

It is necessary to note the experience of Russia in developing e-commerce.

According to Yandex.Market, the e-commerce market in the Russian Federation is estimated at 1 trillion rubles, its share in the total turnover of Russia is 4-5% [4].

Online platforms act both as an independent retail platform and a provider of digital trading platforms that unite consumers on the Internet and create a multi-lateral market.

One of the most noticeable trends is the emergence and spread of marketplaces – electronic trading platforms that unite many sellers.

Marketplace is an e-commerce business model, an online store providing information about goods and services of third parties whose transactions are processed by the marketplace operator. In general, the marketplace is an optimized online platform for providing products and services [5].

Based on 2020 data, about 50 marketplaces operate in Russia [6]. The main platforms ranking is shown in Fig. 1.

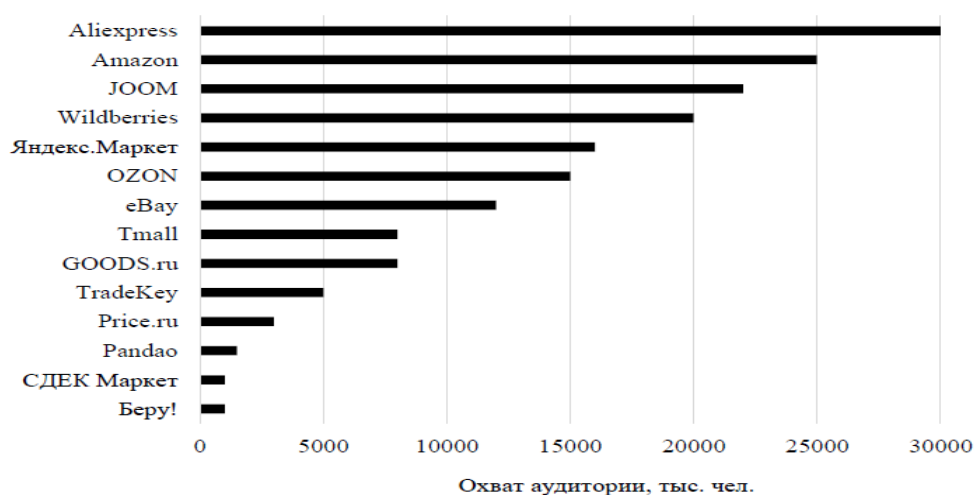


Figure 1 – Russian marketplaces outreach ranking

It should be noted that the leading places in the above ranking are taken by marketplaces offering goods from foreign sellers to Russian consumers.

As of early 2020, more than 50 thousand online stores are officially registered in Russia, but their actual number exceeds 250 thousand. Most online stores sell goods not only through online sales, but also sell in traditional way, especially this refers to large retail chains.

The leaders of the Russian e-commerce sector are companies that provide consumers with non-food products. In 2019, the number of online orders in online food stores increased by 49%. Over the same period, the amount of online sales increased by 40% [4].

Trends of e-commerce turnover of the food delivery market is shown in Table 1 [6].

Table 1 – Trends of e-commerce turnover of the main participants of the food delivery market for 2018-2019

Company	Type of company	Turnover in 2018, billion rubles.	Turnover in 2019, billion rubles.	2019's growth rate against 2018, %
Utkonos	Online store	9.6	10.2	106.25
Delivery Club	Delivery Service	8.2	8.6	104.87
Yandex.Food	Delivery Service	7.3	7.8	106.85
OZON	Online store	1.4	3	114.29
O'Key	Online store	1.3	1.7	130.77
Azbuka vkusa	Online store	1.2	1.5	125.0
Auchan	Online store	0.7	1.5	214.3
Perekrestok	Online store	0.4	1.5	375.0
iGoods	Delivery Service	0.3	1.2	400.0
Instamart	Delivery Service	0.2	0.8	400.0
Golama	Delivery Service	-	0.4	-

The 2020 was fundamentally different from previous periods in that the global COVID-19 pandemic had a significant impact both on the economy as a whole and on trade processes in particular. As the 2020 has shown, it is the trade in food products and the delivery of ready-made food that will become widespread in the near future.

Thus, it should be noted that e-commerce is progressing. The existing global experience and global trends in developing Internet technologies can be an example of further progress of this direction in retail trade in the market of the Republic of Belarus [7].

However, we should not forget the existence of factors limiting the growth of e-commerce, including poor development or lack of logistics infrastructure required for timely goods delivery, as well as lack of confidence in online stores, prepayment schemes and consumers' unwillingness to share confidential information [8].

The main models of organizing retail trade on the Internet depending on the degree of trade and technological processes automation, are a front-office, back-office (vending machine) and an automatic store (or an online trading system).

The methodology of organizing e-trading in online store formats involves developing a system-process approach comprising a certain sequence of business processes that allow tracking each stage of introduction and aimed at maximum use of e-commerce resources in online store formats [9].

Stage 1	Justification for the need to introduce e-commerce	Analyzing market situation (market conditions)
		Analyzing the company's own capabilities
Stage 2	Choosing an e-commerce format	Company profiling
		Analyzing e-commerce formats
		Defining the objectives of introducing e-commerce
Stage 3	E-commerce project development	The choice of technical means of implementing e-commerce
		Developing terms of reference and project
		Project approval
Stage 4	Organizing e-commerce implementation process	Choosing an implementation strategy
		Developing implementation program
		Developing implementation stages
Stage 5	E-commerce introduction	E-commerce introduction
		Implementation control
		Analysis of the results obtained and calculating implementation effect

**Figure 2 – Methodology of e-commerce organizing in online store formats**

When organizing e-commerce in online store formats, numerous factors that influence the process are taken into account [10,11].

**Table 2 – Factors influencing the choice of e-commerce format**

Factors	E-commerce formats		
	Front-office	Online store	Online Trading System
<b>1. Mission and strategy of the company</b>			
Limited growth	+	+	
Growth	+	+	+
Combination	+	+	
<b>2. Introduction objectives</b>			
Image element	+	+	
Mass media	+	+	
Means of advertising	+	+	
Gaining extra profit		+	+
Increased number of potential consumers	+	+	+
Expanding the boundaries of the company's activities	+	+	+
<b>3. Type of trading company</b>			
Supermarket	+	+	
Department store	+		
Warehouse store	+	+	+
Kiddie World Department Store	+	+	
Hypermall	+	+	+
Trade house	+		
Second-hand shop	+	+	
Shopping centre	+		
Specialized (highly specialized) store	+	+	
<b>4. Type of goods sold</b>			
Food products	+	+	+
Complex technical goods	+	+	+
Clothing and footwear	+	+	+
Jewelry and luxury items	+	+	+
Cultural and household goods	+	+	+
Building materials	+	+	+
Car parts	+	+	+

Regardless of the content of supply management processes in the network economy, their essence is optimizing transaction costs in organization of supplies.

Delivery system are the rules and methods of delivery to the customer of the items ordered in the online store. Self-delivery.

This method, on one side, is less convenient for the visitor. But on the other side, it has significant advantages.

The customer can pick up products himself from two places:

- Retail outlet. If there are several of them, the customer selects one which is the closest to his home /work, while placing an order.

- Warehouse. In this case, a stand must be provided where people can pick up products. That is, the storage facility must have heating, lighting, be neat and have everything in order.

Own delivery or couriers service.

Courier delivery is available only in a city where warehouses of the online store are located (or "just-in-time" delivery). It is obvious that a warehouse, if any, should be located close to the end user. In large cities, delivery used to be a serious problem just a few years ago. Own courier service required a serious budgeting and was profitable only at a certain stage of a store development. Outsourcing the delivery was also not a cheap pleasure.

Organizing own courier delivery is benefits only with a large number of transactions. The search for partners to deliver goods is based on products and consumers characteristics. For some groups of products, the most critical aspect is the speed and reliability of delivery, for others - the price. Own delivery services are usually used within small regions. Distant regions are served, as a rule, by mail or international delivery services.

At present, Belarus experiences a shortage of reliable delivery systems. Almost every Belarusian store has to keep its delivery service, while in foreign countries online stores benefit from services provided by companies specialised in goods delivery. The lack of companies providing such services limits the number of potential customers and, as a result, the profit of the enterprise [12, 17].

Delivery by mail

In this case, the customer will receive a package or a parcel with the order at BELPOCHTA post office corresponding to his postal address. The cost of delivery depends on the weight of the order, and the terms of delivery inside Belarus are usually 3-4 working days.

Parcel machines:

This option is something in between a courier and a self-delivery, since both parties have to arrive to the pick up point. These are storage boxes rented by the seller. The action algorithm is as follows:

the buyer pays for the order in a non-cash manner;

products are placed in a box;

the customer receives an SMS with the box number;

he comes to the point where the parcel machine is installed, enters the password and picks up goods.

Advantages are low cost and no need to keep a large equipped warehouse or staff. Suitable for a small private business.

Delivery by international postal service

To send goods abroad. This service will deliver the order within ten to fourteen days after placement. The parcel is transported by international mail to the border of the country, then it is transferred to the national postal service. Thus, the delivery strongly depends on the speed of mail in a particular region.

All parcels delivered by Belpochta or EMS (expedited mail, a division of Belpochta) fall into this category. To receive a parcel by Belpost, the online store must also send it by its national postal service (standard mail or express mail).

Depending on the country where the store is located, these may be: from the USA - UPS, from the UK - Royal Mail, from Germany - DeutschePost, from Spain - Sociedad Estatal Correos y Telégrafos, from France - La Poste, from Poland - Poczta Polska, from China - China post state, from Russia - Russian Post, etc. [13].

Delivery by international courier service.

To reduce the delivery time, as well as to delivery expensive, large, fragile, etc., goods, avoid problems with the goods safety and for other reasons, online stores can offer a delivery with one of the courier services. This might be either one of the world's famous international express delivery services: DHL, UPS, TNT, FedEx, FlipPOST or one of numerous national courier services. They have one thing in common – a higher cost and shorter delivery times compared to regular mail. Delivery time by courier services is up to a week.

If delivered by an international courier service, 100% prepayment is made by the customer. For example: UPS delivers anywhere in the world within three days. After receiving the payment, the goods and the cargo number are sent to the customer and he may track his parcel on the UPS website. All necessary information about delivery dates, tariffs, branches of the system are available on the company's website [14].

Transport Companies (TCs)

These are used for large items (e.g., furniture) or large batches of goods. This delivery method is most typical for wholesale trade, B2B segment, manufacturer's interaction with suppliers and distributors, distributors with dealers. Mainline transport means automobile, railway, sea (container transportation), air transport. It is difficult to give any prices and delivery times for this option. Such issues are resolved individually when making transaction.

The meaning and algorithm of cooperation is similar to postal transfer. Once the TC delivers the goods to the destination, the customer himself picks it up. But there is also an additional service, usually extra paid – delivery to the door.

Let's analyze the methods of goods delivery from various trading platforms, online stores.

Goods delivery from Aliexpress:

- Delivery by China Post. This is one of the most popular delivery methods with Aliexpress, which is offered by default in most cases.

- Delivery by courier companies:

CDEK is a well-known Russian logistics company.

EMS - expedited delivery. The parcel is first sent within China by Chinese EMS, then it is accepted by the Russian EMS and delivered to the addressee.

DHL is a German logistics company that is famous for incredibly fast delivery around the globe.

FedEx is an American courier company whose services are also quite expensive. On average, it is more expensive than EMS but cheaper than DHL.

ePacket is a combined delivery method. In China, the parcel is sent by EMS express service (i.e., it travels fast), and in Russia it is delivered by ordinary national mail. If compared with China Post, this delivery method is on average 5-7 days faster.

SF eParcel is a large logistics company, the delivery time is 30-45 days.

Having analyzing the delivery methods, it should be noted that goods delivery of goods to the end consumer from the Aliexpress trading platform is organized as follows: the customer places an order on the website, pays it in any convenient means and, if possible, selects delivery. If the customer has chosen delivery at the seller's discretion, then the seller chooses the delivery option most optimal primarily for himself, but at the same time he is interested in the customer receiving the order and returning to the store again.

Goods delivery to consumers in the online store "21vek":

Delivery by courier to the client.

Self-delivery from pick up points in different cities of the country.

Orders weighing up to 10 kg are delivered either by the courier service of the store or by the GloBel24 delivery service, or by mail (EMS). Determined by the seller.

Goods delivery to end consumers from eBay trading platform:

Delivery to the Republic of Belarus, Russian Federation is made by Shiptor transport company. Within destination countries by couriers DPD, IML, Shiptor, mail.

Delivery to order pick up points – by DPD and Boxberry.

Courier express delivery "to the door" with EMS by state mail.

Goods delivery to end consumers from online store Kit.by:

Goods are delivered by the store's own transport to each consumer.

Despite all disadvantages, the courier service is indispensable for the delivery of "urgent" goods, which primarily include food and medicines. Delivery of large, fragile or very expensive goods is also within the courier service activity [16, 18].

When delivering goods by courier, the courier uses an invoice which indicates the name of the transported goods, quantity and price. The invoice is signed by head of the supplier company, the courier, and the buyer.

Settlement documents required for the transfer of the delivered goods: invoice, bill of lading, cash receipt (if paid in cash). Some online stores use mobile cash registers for a courier to print out a cash receipt receiving payment from the customer.

It is worth creating own delivery service for an online store only with a sufficiently large volume of sales, thus the use of own courier service will actually reduce overhead costs for goods delivery.

Delivery by mail is one of the simplest and generally available methods. Wide enough range of goods can be sent by registered parcel with the the cost of delivery being relatively small. Delivery both within one city and within the whole country is very simple. Disadvantages of this method include the duration of delivery (even within the same city), a weak guarantee of goods safety.

The more delivery options an online store offers to customers, the larger the potential audience it can reach.

Compared to traditional logistics, e-commerce logistics is more operative in terms of responding the product delivery and higher requirements. Logistic personnel cannot prepare the goods requested by the customer in advance (logistics personnel cannot predict his activity) but must deliver the goods when the customer places an order via the Internet. Another feature is related to the type of order: regardless of the delivery option chosen by the customer (home delivery, through mediators, etc.), the preparation of goods is personal. In this case, the interaction between the warehouse and transport logistics is extremely important.

When choosing an online store, Belarusians primarily pay attention to the following factors:

better price and its validity, suitable terms of payment, delivery and warranty;

the site convenience, precise description and feedback about products;

previous shopping experience, site reputation, recommendations;

order procedure.

52% of Belarusian consumers place orders in online stores through the shopping cart, without clarifying by phone or chat. 26% after ordering on the website give details by phone. 14% chat with the seller before ordering something online, 8% call the online store themselves. Most often, young people aged 18-24 chat with sellers, those aged 36-40 call the online store [15].

The most popular ways to place an order:

1 Through the shopping cart on the website, without clarification by phone or chat (52%)

2 Call from the online store after placing an order on the website (26%)

3 Chat with the seller (14%, 18-24)

4 Call to the online store (8%, 36-40)

53% of Belarusians pay for online purchases after receiving the goods. However, 27% are ready to pay in advance but involving the so-called secure transaction.

The most popular ways to pay for an order:

1 Payment upon receipt (53%)

2 Secure transaction (27%)

3 Full prepayment (16%)

4 Partial prepayment at the time of ordering and post-payment (4%).

A typical mechanism of a secure transaction: the buyer sends pre-payment to the marketplace which transfers money to the seller after the customer confirms receipt of the order. Thus, marketplaces ensure the security of online transactions for customers and sellers and guarantee that the customer will receive the goods (or refund, if the goods are

of poor quality), and the seller will receive the money. Secure transactions are available on the websites of other countries. Belarusian marketplaces will be able to offer such opportunity once the law is adopted allowing payments in favor of third parties. The National Bank is currently working on such a law.

The most popular ways of order delivery

- 1 Free delivery by mail (41%, clothing, footwear and accessories; cosmetics and perfumes)
- 2 Free courier delivery (23%)
- 3 Paid courier delivery (13%, furniture and household goods)
- 4 Paid delivery by mail (13%)
- 5 Self-delivery (11%)

Most often Belarusians receive orders from online stores for free: orders are delivered to the post office or by courier. Belarusian consumers take free delivery for granted, and it will be hard for them to get used to the fact that delivery is the same service as cleaning an apartment or replacing tires, for which sooner or later they will have to pay. Only 13% of our compatriots are ready to pay for delivery so far: at the same time, this most often refers to large goods, such as furniture and household goods.

For more effective implementation of e-commerce technologies in the Republic of Belarus, the following directions of its development seem to be the most optimal:

- creating a full range of Belarusian goods in compliance with the international codification system, attracting investors' funds to create e-commerce systems;
- more active implementation of the "public key" concept, legal permission to conclude documents in electronic form, without duplicating them on paper. This will lead to a 40% reduction in document flow, reduce costs and time for paperwork, provide a convenient form of interaction between the state, business, and individuals;
- bringing national standards in the field of electronic payments to international standards. Taking into account the availability of a large number of banking cards in the Republic of Belarus, the development and implementation of an electronic payment system requires the development of electronic payment system. Introduction of online acquiring of bank cards will increase the number of purchases via the Internet and spur the development of e-commerce in the B2C segment.

Based on the analysis, it is seen that already today 90% of all online stores belong to individual entrepreneurs and micro-companies. That is why the prospects for developing e-commerce mainly fall on these business entities.

Therefore, to acquire a positive trend in developing e-commerce, the Republic of Belarus should first of all encourage the main representatives of this trade industry.

At the first stage (2018-2021), the priority areas were:

- development of e-commerce (electronic document management and marketing, e-procurement) and logistics, which will increase the share of e-commerce in the retail turnover of trade organizations to 10% in 2030;
- expanding the use of the e-declarations;
- creating conditions for launching online stores and expansion of mobile payments;
- organizing retail facilities within walking distance along with large retail structures which use network technologies;
- developing cross-border trade;
- improving the efficiency of the distribution network abroad, creating joint ventures, service centers, trading houses, information and consulting centers;
- organization of international exhibitions, fairs, presentations of innovative goods and services; development of the national export promotion system through expanding the forms of guarantee, insurance and financing of export transactions with the support of the state.

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## THE CONCEPT AND ASPECTS OF THE FUNCTIONING OF A SUSTAINABLE SUPPLY CHAIN

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### Abstract

The article presents the term "sustainable" in the context of the supply chain, the concept and structure of the supply chain. The description of the international standard ISO 26000 is given, which systematizes the knowledge about broadly defined corporate social responsibility (CSR). The essence of a sustainable supply chain is revealed. The objectives in managing supply chain from logistic standpoint are defined. Actions to improve the supply chain stability in a responsible business environment in certain areas of its functioning are proposed as recommendations. The article provides with examples of approaches to a sustainable supply chain at different stages of the life cycle.

**Keywords:** supply chain, sustainable development, environmental friendliness, economic and social aspects.

### Introduction

The uncertainty of the future, dictated by unpredictable indicators of economic development, often has negative consequences for the business sphere, affecting the functioning of supply chains. This situation forces business entities to search for alternative flexible solutions that adapt enterprises to rapidly changing environmental conditions. Logistics specialists increasingly see the future in so-called sustainable supply chains [9]. Currently, sustainable development is a response to growing social, economic and environmental challenges, the purpose of which is to meet the needs of not only the end user, but also all participants in the supply chain, taking into account environmental aspects.

The National Strategy for Sustainable Development of the Republic of Belarus until 2030, the programs of environmental associations and other organizations in the field of environmental protection address issues of social responsibility of enterprises. As part of improving a sustainable supply chain, it is necessary to consider the methods and techniques that individual elements of the supply chain should follow in order to bring their products to specific social, economic and environmental requirements. The process of adapting functioning supply chains to the conditions of doing responsible business has already started in the Belarusian business environment. The purpose of this article is to consider issues related to the formation of a sustainable supply chain in a responsible business environment.

### The concept of a "sustainable" supply chain in the aspect of responsible business

The term "sustainable" in the context of the supply chain can be understood as achieving a state of equilibrium that provides a balance between individual positions in the final balance of the enterprise. However, the most common is the definition according to which sustainability is understood as "development that meets the needs of the present without compromising the ability of future generations to meet their needs" [5]. The evolution of the concept of corporate social responsibility and the direction of social responsibility in the supply chain is shown in Figure 1.



*Figure – 1 Evolution of the concept of corporate social responsibility and social direction of responsibility in the supply chain*

Thus, balancing social and economic development with environmental protection is an area of sustainable development. Other legal instruments reflecting the essence of sustainable development are recognized international standards, which include, but not limited to: ISO 26 000 standard, the Principles of the UN Global Compact, etc.