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DISTANCE SELLING TECHNOLOGIES

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The purpose of the textbook “Distance Selling Technologies” is to provide students with knowledge in the field of organizing technological processes in various types of distance selling. The study manual is used within the discipline “distance trading”, “digital forms and methods of sales” and others. The textbook is prepared in accordance with the program of the discipline of the same name and is intended for students majoring in 38.03.06 “Trade business”.

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Introduction

Tracking customer flows has a direct impact. Distance selling is a popular form of commerce that has long been a part of our lives and is increasingly modernized every year. New technologies are being introduced.

Distance selling is the sale of goods under a retail purchase and sale agreement concluded based on the buyer's familiarization with the seller's description of the product contained in catalogs, prospectuses, booklets, or photographs, or through the use of postal networks, telecommunications networks, including the internet, as well as television and/or radio broadcast networks, or other means that preclude the buyer from directly examining the product or a sample when concluding such a contract.

Mail order (postal) sales have the longest history. This type is deservedly considered the beginning of distance selling. Mail order sales originated in the 19th and 20th centuries and were very popular in many countries. Distance selling gained a new dimension with the advent of radio and television.

E-commerce is a modern trend in trade. Its development was primarily driven by advances in information technology, but this type of trading has several advantages. One of these is the potential for lower prices in e-commerce compared to traditional trading. The potential for price reduction in e-commerce stems from lower costs associated with organizing the trade and technological process, and, through market mechanisms, from higher levels of competition. Low prices

and discount systems allow for the sale of goods to socially vulnerable groups.

E-commerce technologies allow for the optimization of a trading organization's supply of goods. E-commerce mechanisms allow retailers to build inventory based on consumer choice, using information about online consumer behavior. Building inventory based on consumer choice offers several advantages for both buyers and sellers: buyers can purchase precisely the products they need, choosing from a wide selection of products, and sellers avoid the cost of purchasing products for which there is no consumer demand.

The purpose of the "Distance Selling Technologies" textbook is to provide students with knowledge of the organization of technological processes in various types of distance selling.

1. Fundamentals of organizing technological processes in distance selling

The organization of technological processes in trade is in many ways similar to the traditional one, but also has some differences.

The main features of distance selling include the following: the purchase and sale of goods is carried out outside stationary places of trade; mandatory presence of a public offer; delivery of goods to the buyer at the place of demand; the possibility of settlements using remote technologies. The term “remotely” itself, when applied to the sale of goods, implies the absence of direct contact (in real time) between the buyer and the goods or their sample.

Sale of goods by remote means – sale of goods under a retail purchase and sale agreement, concluded on the basis of familiarization of the buyer with the description of the goods proposed by the seller, contained in catalogues, prospectuses, booklets or presented in photographs or using postal networks, telecommunication networks, including information – the Internet telecommunications network, as well as communication networks for broadcasting TV channels and (or) radio channels, or in other ways that exclude the possibility of the buyer directly familiarizing himself with the product or a sample of the product when concluding such an agreement.

The main features of distance trading include the following: the purchase and sale of goods is carried out outside of stationary trading locations; mandatory presence of a public offer;

delivery of goods to the buyer at the place of request; possibility of carrying out calculations using remote technologies.

The very term “remotely” in relation to the trade of goods implies the absence of direct contact (in real time) of the buyer with the product or its sample.

The significance of distance trading is to ensure the availability of goods for residents of remote regions – distance trading facilitates consumer access to the market and improves the supplier-consumer chain as a whole; as well as ensuring the accessibility of goods for people with limited mobility.

Characteristics of types of distance trading – electronic commerce is a type of distance trading aimed at carrying out acts of purchase and sale of goods using telecommunication networks; Catalog trading is a type of distance trading, which is implemented on the basis of distributing catalogs (brochures) among buyers, which present the range of goods sold. Ordering of goods is carried out by telephone, via the Internet or by sending a request by mail; television trading is a type of distance trading, which is implemented by providing potential buyers with information about the goods being sold through television broadcasting and taking orders by telephone.

The main advantages of distance trading for the seller are the expansion of the trading space – unlike a traditional trading enterprise, the service area of a trading enterprise selling goods remotely does not depend on the type of enterprise, its specialization, location and scale of activity;

increased competitiveness – distance selling allows companies to offer enhanced pre- and post-sales support, providing detailed product information and quickly responding to customer requests. For small enterprises there is an opportunity

to successfully compete with large corporations; greater awareness of customer needs – using remote communication tools, companies can receive detailed information about the needs of each individual customer and automatically offer products that meet their requirements; increasing the flexibility of doing business – the use of distance selling tools allows enterprises to more quickly respond to changes in consumer demand, the solvency of the population, the range of products offered, legislation, etc.; possibility of unlimited expansion of the assortment – if there are established relationships with suppliers, expansion of the assortment does not lead to the need to increase the area of the enterprise; speeding up the process of passing documents – the use of electronic forms of documents during remote interaction with counterparties reduces the time spent on establishing business relations with suppliers and buyers, interaction with government bodies, the media, etc.; reducing costs for organizing and operating an enterprise.

The main advantages of distance trading for the buyer are a wider selection of goods and trading organizations compared to traditional trade – buyers have the opportunity to choose companies offering goods, regardless of their geographical location; ease of visiting and comparing alternatives – the buyer does not need to personally visit the retail outlet; improving the quality of service – personalization of service, delivery of goods at a convenient time and place, increasing the amount of easily accessible information; price reduction – due to cost reduction, the seller has the opportunity to reduce prices; 24-hour access – the ability to place an order or receive information at any convenient time; saving time – the buyer gets the opportunity to reduce the time spent on the process of select-

ing a product and a retail outlet and placing an order. However, in order for the buyer's time to really be saved, carefully developed trading technology is necessary; variety of payment forms – the buyer is given the opportunity to use both traditional forms of payment and forms of payment using various payment systems.

In the process of servicing customers when selling goods remotely, the following operations must be implemented in the most general form: providing the buyer with information about the product and the necessary additional information (methods of receiving goods, payment methods, return options, etc.); receiving an order for goods from the buyer; receipt of payment and delivery (depending on the type of distance selling, the delivery and payment methods used, these stages can be implemented in different sequences).

When selling goods through catalogs, at the first stage of the trade and technological process, the process of distributing catalogs to potential buyers must be implemented. Product catalogs may be distributed by mail or hand delivery. It is possible to use combined trading methods, when part of the assortment is displayed in a stationary store, and part of the goods can be ordered through a catalog. In this case, the catalog is distributed in the store to visitors. Catalogs can be provided to a potential buyer either free of charge or for a fee. As practice shows, many consumers like to receive catalogs, moreover, they are ready to buy them. After reviewing the range of products presented in the catalog, the buyer places an order. Orders can be accepted in various ways – at post offices, at retail outlets, through telephone calls. The use of different methods of receiving orders affects the mechanism for processing

them. The next stage is order completion. During this stage, using automation and mechanization tools, orders are completed in accordance with consumer requests. The completed order is transferred for delivery. As a rule, trading through catalogs involves postal delivery of goods and payment for the purchase by cash on delivery.

When selling goods through television trading, the buyer gets acquainted with the trade offer by watching a specialized program presenting the product. A significant difference between television trading and other types of distance selling is that the buyer cannot control and choose the goods about which he wants to receive information. While viewing the tele-shopping program, the buyer gets acquainted with the sales offer that is currently being broadcast. This factor is one of the main disadvantages of television trading compared to other types of distance selling. Another disadvantage is the fairly significant costs of broadcasting videos on television. The advantage of presenting goods during television trading is the ability to present the product more effectively, to show in detail all its advantages, which allows you to influence the buyer in order to motivate him to buy. Video broadcast allows you to convincingly present a product, especially if it is complex and expensive. Based on the needs and problems of the target audience, talk about those advantages that the buyer is not even aware of. Effective product presentation is a significant advantage of selling products through television sales.

At the first stage of the trade and technological process, a video is prepared and recorded for broadcast. When preparing an advertising show, various stands, mannequins, and demonstration videos are used, which allow you to examine the item

from all sides and evaluate its parameters, design, features and advantages. The use of modern photo and video equipment, as well as high-quality lighting, guarantees accurate color reproduction. This implementation format allows you to provide not only a short description, but also more voluminous and detailed characteristics for convenience. Key points are necessarily displayed on the screen and repeated several times during the broadcast. For example, such parameters include dimensions, size, functionality, material, etc. For each product, a short advertising video is shot, which already comes with voice-over text and is shown to familiarize the buyer with the functions and capabilities of the product. The rest of the information should be provided by sellers who are well versed in the features of the product and have all the necessary information. The work of the seller himself plays an important role in the work of a teleshop. Celebrities are often invited to demonstrate the properties of the product or tell its positive aspects. During the story, pauses are minimal, with bright graphics and sound, since the channel also has an entertainment function and should attract potential buyers. The advantages of the goods are the key points of the video; the emphasis is formed on them. After familiarizing yourself with the product, its characteristics and terms of purchase, the buyer places an order. On the screen, along with the product characteristics, telephone numbers are indicated where you can place an order. In addition, the sellers themselves regularly tell you how to place an order. Often, teleshopping is combined with the e-commerce format, and an order can be placed on the teleshopping website.

The trade and technological process is a complex of interconnected trade (commercial) and technological operations

and is the final stage of the entire movement of goods. The implementation and composition of trade (commercial) and technological operations significantly depend on the form of sale, respectively, distance selling enterprises have features of implementing both commercial and technological operations. One of the commercial operations, which has a number of differences in the activities of distance selling enterprises is the formation of the assortment. The assortment of goods is a complex system. In this system, goods differ in the variety of their consumer properties, features of purpose, nature of use, participation in satisfying needs, the effect of consumption. It is important for the enterprise in its work to adhere to the assortment determined by its assortment policy. The assortment in its quality indicators must meet the established requirements. The organization independently decides how often the assortment will be updated, whether it will be complex or simple, how wide it will be and much more. At the stage of assortment formation, it is necessary to analyze and take into account supply and demand in the global market, the competitive environment and the purchasing power of the population in the global market, since the boundaries of the activities of the distance selling enterprise are weakly limited geographically. When forming the structure of the assortment and pricing policy, it is necessary to take into account the possibility and economic feasibility of delivering goods to customers in remote regions and their solvency. Formation of the assortment matrix of a trading organization in the field of distance selling is not limited by the size of the retail space.

The sale of goods by catalogs is carried out in cases where the seller sells a range of goods by distributing special catalogs.

These catalogs can be distributed by mail or delivered in person. Moreover, catalogs can be provided to a potential client both free of charge and for a fee. The consumer, having familiarized himself with the catalog and the assortment of goods, can make a corresponding order by mail, by phone or in another way.

The essence of selling goods by catalogs comes down to the development and formation of catalogs, which present the entire range of goods sold by the company, describe their basic characteristics and prices. Such catalogs give potential buyers the opportunity not only to familiarize themselves in detail with the assortment, but also to order it. Trade carried out through catalogues stimulates customers to order goods by unobtrusively pointing out a particular product, offering attractive promotions and discounts. The trade and technological process is a complex of interconnected trade (commercial) and technological operations and is the final stage of the entire movement of goods. The implementation and composition of trade (commercial) and technological operations significantly depend on the form of sale, respectively, distance selling enterprises have features of implementing both commercial and technological operations. One of the commercial operations, which has a number of differences in the activities of distance selling enterprises is the formation of the assortment. The assortment of goods is a complex system. In this system, goods differ in the variety of their consumer properties, features of purpose, nature of use, participation in satisfying needs, the effect of consumption. It is important for the enterprise in its work to adhere to the assortment determined by its assortment policy. The assortment in its quality indicators must meet the established requirements. The organization independently de-

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Catalogs can be used to advertise and sell various product categories: cosmetics, clothing, electronics, jewelry, etc. One of the essential features of forming the product range when selling goods through catalogs is related to the process of delivering goods to customers.

As a rule, goods ordered through catalogs are delivered by the postal service. In this regard, when forming the product range, the possibility and economic feasibility of delivering goods by mail should be taken into account. First of all, large-sized and fragile goods should be avoided in the product range.

A catalog in a general sense is a complete list of all products sold by a company. Catalogs can be provided to potential customers in various ways – by issuing in stores, by address mailing, by distribution with a previous order, or by posting via the Internet.

Catalogs can be sent to both real and potential customers for various purposes, such as reminding them of the company and its products or stimulating them to make a purchase.

There are two main types of catalogs: direct order catalogs; industry catalogs.

Catalogs of the first type in most cases offer consumers products with average or low prices. As a rule, these are the products that buyers, all other things being equal, will risk purchasing based on the picture and the text that accompanies it. Such products may include professional and book publications, postal accessories, economy-class cosmetics, etc.

In this case, the catalogs themselves contain complete information about prices. Buyers are offered to immediately fill out an order form or call a certain phone number and place an order. The recipients of such catalogs are end consumers.

Catalogs of the second type serve as a basis for the sale of technical products for special purposes. In most cases, product catalogs in this case do not contain information about selling prices. In order to find out this information, a potential buyer must call the manufacturer before placing an order.

Such catalogs are aimed at specific applied professionals – intermediate consumers.

Certain principles underlie the formation of the catalog. The main one is the ease and simplicity of ordering from it. The accuracy and reliability of the information provided about the products plays an equally important role. The quality of the catalogs' development largely determines their attractiveness and success in the eyes of consumers, and, consequently, the commercial efficiency of the sale of products.

The formation of the product range of a TV store has certain features: all products sold in a TV store (clothing, jewelry, dishes, appliances, equipment, etc.) must be original, correspond to the stated description and characteristics, have "patent purity". In other words, counterfeits or any copies are not allowed for sale. Visually, the products may be similar to trending items or those sold in other physical or online stores. But, in terms of their characteristics and features, they must be truly exclusive and sold only on the TV store channel. During the development of an advertising campaign for a specific item, it is necessary to use special props to demonstrate all the qualities of the product, to demonstrate it from all sides. The assortment of a TV store must be regularly updated to retain regular customers.

In the process of servicing customers with a remote method of selling goods, in the most general form, the following operations must be implemented:

- presenting the buyer with information about the product and the necessary additional information (methods of receiving the product, payment methods, return options, etc.); receiving an order for goods from the buyer; receiving payment and delivery (depending on the type of distance selling, the methods of delivery and payment used, these stages can be implemented in a different sequence. When selling goods through catalogs, the first stage of the trade and technological process should include the process of distributing catalogs among potential buyers.

Product catalogs can be distributed by mail or delivered in person. It is possible to use combined trading methods, when part of the assortment is displayed in a stationary store, and part of the goods can be ordered through a catalog. In this case, the catalog is distributed in the store among visitors.

Catalogs can be provided to a potential buyer both free of charge and for a fee. As practice shows, many consumers like to receive catalogs, moreover, they are ready to buy them.

After reviewing the assortment of goods presented in the catalog, the buyer places an order.

Orders can be accepted in various ways – at post offices, at retail outlets, by phone calls. The use of different methods of accepting orders is reflected in the mechanism for processing them.

The next stage is order assembly. Within the framework of this stage, orders are assembled in accordance with consumer requests using automation and mechanization tools.

The assembled order is sent for delivery. As a rule, catalog sales involve postal delivery of goods and payment for the purchase by cash on delivery.

When organizing payments, two main forms of payment can be used: prepayment and payment upon receipt of the goods. In the first case, payment can be made by bank transfer, via SMS messages, using Internet banking systems or using Internet payment systems. The second case includes payment in cash to the courier upon receipt of the goods and cash on delivery.

Delivery is one of the main issues, without which it is impossible to improve the level of services offered. The buyer, first of all, evaluates the quality of service in the online store by the speed of delivery of the goods.

If we are talking about selling an information product, the online store delivers it via electronic communication networks. In other cases, the following delivery methods are used: own delivery services; local and regional courier services; postal service; international express delivery service; pick-up.

When selling goods via TV sales, the buyer gets acquainted with the sales offer by watching a specialized program presenting the goods.

A significant difference between TV sales and other types of distance selling is that the buyer cannot control and choose the goods about which he wants to receive information. By watching the TV store program, the buyer gets acquainted with the sales offer that is currently being broadcast.

This factor is one of the main disadvantages of TV sales compared to other types of distance selling. Another disadvantage is the fairly significant costs of broadcasting video clips on television.

At the first stage of the trade and technological process, a video clip is prepared and recorded for broadcast. When preparing an advertising show, various stands, mannequins, and demonstration videos are used, which allow you to examine

the item from all sides and evaluate its parameters, design, features, and advantages. The use of modern photo and video equipment, as well as high-quality lighting, guarantee the accuracy of color reproduction. This format of implementation allows to provide not only a short description, but also more voluminous and detailed characteristics for convenience. Key points are necessarily displayed on the screen and repeated several times during the broadcast. For example, such parameters include dimensions, size, functionality, material, etc.

Today, the e-Commerce market has a variety of methods for payment of goods and services that differ significantly in their parameters. The differences are in the level of identification of the parties, the ability to track monetary transactions, as well as the conditions of their application. All payment methods used are divided into two categories – with or without the use of Internet technologies.

The first category of payment methods includes the following:

1. Cash payment. This method is used at the time of receipt of the goods or services in the case of courier delivery, or at the organization's office or pick-up point. This payment method provides security guarantees to both parties of the transaction, and the buyer can check the goods or evaluate the quality of the service before payment.
2. Payment using cash on delivery. This payment method can be used when goods are sent by mail: payment is made at the post office before receiving the goods. The buyer has the opportunity to inspect the goods before payment, and in case of deviations in quantity or quality of goods, problems with their return may arise, since the goods may have been damaged during postal deliv-

ery. Nonetheless, this method of delivery and payment is frequently used due to the relatively low cost of postal delivery, especially to remote regions.

3. Bank transfer. In this case, payment is made using the details of a commercial organization by debiting the required amount from the buyer's account. This method pertains to the prepayment category and, as in the previous case, payment is made before the goods or services are received. Therefore, as in the previous case, it is not possible for the buyer to check the quantity and quality of the goods before payment.
4. Payment from a mobile phone account. Payment is made by sending SMS messages to a designated number. This method is most often used for making payment for low-cost services.
5. Telebanking. Payment is made by managing a bank account using a regular or mobile phone.

The second category of payment methods involves the use of various online payment systems. Such systems may use a variety of payment means, the most popular of which are electronic money and bank cards. Development of non-cash methods of payment for goods and services using the Internet is one of the fundamental factors in the development of e-Commerce in the country.

The use of online payment systems requires compliance with a number of significant conditions. First of all, it is necessary to ensure the security of information transmitted to the payment system. The payer must be sure that the confidential information (such as bank card details) would be securely protected from unauthorized access.

Any payment system must ensure that authentication and authorization procedures be performed as efficiently as possible. These procedures involve checking the right to use certain payment methods and the ability to make a payment. On the one hand, these procedures should reliably protect the system and users' funds from illegal use, on the other hand, they should not make the payment process too much complicated. Security of payments is one of the main factors of successful functioning of a payment system.

A payment system must be scalable, i.e., an increase in the number of users of the payment system should not cause failures in its operation or affect the speed of payments. The use of a system should be simplified as much as possible, whilst the security level must not be compromised.

Online payment systems are divided into credit systems, involving remote management of a bank account, and debit systems, using electronic checks and electronic money.

The Internet banking service is one of the opportunities to access a bank account via the Internet and perform a number of operations, including payment for goods and services. This service is currently quite popular and is implemented by most banks. It enables to replace a physical visit to the Bank with an online visit, significantly saving the customer's time and allowing to remotely monitor the account status around the clock. With that, the list of available operations includes getting information about the account status and operations being performed, paying utility bills, paying for communication services, making money transfers, paying bills for the purchased goods and services, and some others. With the development of mobile Internet,

this service can be accessed using a cell phone, and many banks are developing applications for this with a similar set of functions.

In addition to online banking, the group of credit payment systems includes systems of payment using bank cards. The issuing bank performs the function of issuing bank cards, and the process of making payments with the card is serviced by the acquirer bank. Oftentimes, one and the same bank performs these functions.

The process of payment using bank cards consists of several stages. After placing an order on the online store's website and selecting bank card payment as the payment method, the buyer must transfer the bank card details to the payment system. This procedure can be performed both on the store's website and on the payment system server. The second option is implemented more often, because it provides greater security of the transmitted information. The next stage is the identification and authorization processes that are performed by the payment system processing center, and if they are successful, funds are transferred from the buyer's account in the issuing bank to the online store's current account.

Debit payment systems include payment systems using electronic checks and electronic money. The settlement process involves two parties – issuers and users. An issuer is an entity that issues electronic payment units that are used as a means of payment.

Systems that use electronic checks as a means of payment function similarly to systems with paper checks. The difference is in the way the check is presented and in the process of its transfer and presentation to the issuer. The check itself in such

systems is virtual and is certified with an electronic signature; it is transmitted via the Internet.

Payment systems based on electronic money are quite popular today and are frequently used. Electronic money is a non-personalized means of payment, circulated via the Internet. To use electronic money, the buyer must exchange regular money for electronic one in advance, using the system designated by the issuer. After the exchange, it can be stored on various media or in an electronic wallet.

When making payments, electronic money is transferred to the seller, who verifies its authenticity by presenting it to the issuer. Subsequently, money can be exchanged for real money or continue its circulation using the online system.

There are two types of electronic money: fiat and non-fiat. Electronic fiat money is necessarily expressed in one of the state currencies and is a type of monetary units of the state's payment system. This money is the official currency, along with traditional ones, and is accepted for payment in most organizations. Electronic non-fiat money is non-state payment means and is circulated in accordance with the rules of non-state payment systems. Only the issuer can ensure the paying capacity of such money.

Electronic money can only be issued by specifically accredited organizations. In different countries, the requirements for such organizations are somehow different: in Russia, electronic money may be issued by bank and non-bank credit organizations.

The development of payment systems based on electronic money is thanks to a number of advantages;

1. Electronic money has excellent divisibility.
2. The cost of issuing electronic money is quite low.

3. High degree of portability of money.
4. High speed of payments.
5. Electronic money does not lose its qualities over time.
6. Ability to protect money from theft and forgery.

Electronic money is most convenient to use when making payments of small amounts. In addition, the lack of personalization enables to make payments with a high degree of anonymity. All this leads to the development of payment systems based on electronic money.

The introduction of online payment systems can only be successful if a number of factors are observed. These include the security of making a payment, high speed of settlements, ease of use of the system, anonymity and a well-developed legal framework.

2. Vending technologies

The modern level of development of information technologies affects many fields of economic activity of the society, including the trade field. The process of automation in the trade field consists of numerous components, many of which have great potential for development in modern trade.

Currently, the use of vending forms of trade has great potential. The vending machine occupies a smaller area, which allows to install machines in places with high trafficability, where the opening of traditional shops is impossible, allows to save on staff salaries. Also, due to the psychological characteristics for some buyers, such a purchase is more convenient. The use of vending machines is possible both independently and as in addition to different forms of trading. At present, it is possible to name a number of goods that can't be sold by vending machines. In particular, they include cars, jewelry and all goods that are not related to food and essential goods. However, now, automated trading passes the limit of machines and in Europe machines for the sale of gold bars are popular. This type of machine has already passed the limit of banks and other specialized institutions. Machines are located mainly in shopping centers. However, in Russia at the moment to open such machines is risky, as gold and other precious metals are often fake, on the other hand, in many cities of Russia the standard of living is lower than in European countries. Since these goods are rather investment in their nature, its popularity in Russia during the unstable economic situation will be difficult.

An important element in automated trading is not only the product and its location, but also the preferences of the target audience. The modern forms of trade primarily attract young people, which determines the main consumer segment. The use of vending machines is also a tool in the development of trading networks when because of a small flow of customers the formation of stores of larger formats is unprofitable.

It is known that vending is a good alternative to traditional trading for many reasons. First, buying goods in the vending machine, the customer spends the minimum of time. An intermediary between the customer and the machine is not needed, therefore, the problem of qualified staff is solved. Moreover, the machine is easy to use due to the standardization of purchase procedures, which, accordingly, ensures the quality of service. The vending machine takes up little space and can operate round the clock seven days a week. Also, for numerous buyers the use of technical means is more convenient.

At the beginning of the development of modern forms of trade, the population can't use these machines, preferring traditional forms of trade. The wide introduction of automated forms was facilitated by their introduction in such areas as the sale of tickets for transport, express payment for communication services and a number of other areas. The use of traditional forms was associated for consumers, at least, with the loss of time. In turn, it led to the fact that the process of buying with the use of automated means of trade became more customary.

Currently, vending method of trade is primarily popular in crowded places: railway stations, universities, sports complexes, hospitals, office buildings, shopping centers, parks and many others. It will be noted that in modern conditions, vending trade

is more common in Europe, Japan, the USA, the UAE than in Russia. Despite the fact that the development of vending in the Russian Federation began recently, a domestic production of vending machines appeared. All this suggests that in our country vending is still a promising direction, a vector of growth and development of undeveloped niches and categories.

Moreover, in addition to traditional coffee and machines with food and drinks there are ones with household items, office goods, tights and many others. In modern conditions, social networks became widespread.

One of the popular social networking apps is photo sharing. Accordingly, the machine printing photos from your phone and social networks is very popular. Such devices are usually located in coffee shops, shopping centers and even universities.

Another domain of development of the use of automatic means of trade is their application in e-Commerce. It is known that a number of customers prefer to pick up the goods on their own, rather than to a delivery service. In this case, it is important for online stores is the organization of pickup services. The organization of services through traditional stores leads to costs such as rent, staff salaries and others. On the other hand, the pickup point does not directly do the entire trade and technological process, reducing it to simple operations of exchange of goods for money. At the moment of receiving the goods the customer's choice is already made. The desire to reduce the cost of cash and carry services leads to suboptimal employment schedule, remote location and other restrictions. It reduces the efficiency of economic activity of the online store as a whole. In modern conditions of e-tools have the greatest potential that can automate the issuing of goods – postmates, which is a cell

into which the goods are deposited and after payment the customer can pick up it.

It will be noted the complexity of the development of vending trade, taking into account the specifics of the Russian mentality. The main problem in the use of automated forms of trade is discomfort. First of all, the pensioners and the elderly, who have inconvenience and fear of buying have difficulties in the use of vending machines appear, as they are used to live communication. It is worth noting that fully robotic trading will put not only pensioners, but those people for whom such devices are new at a stand.

The next problem is the tendency of the population to violate the law. Among these problems we can cite, first, the desire to "cheat" the device, as well as vandalism. Ways and methods of hacking appears every day more and more, so the machines should be placed only in protected areas: with protection or under surveillance cameras.

In addition to hacking, there are other ways to spoil the vending machine and get the goods for free: starting with the use of raised bills and ending with the hacking of an entire network of devices by hackers. However, the most dangerous burglars are those who do not want to rob the machine, but simply to harm other customers. So, in the Moscow region were forced to remove all the dairies machines, despite the high profitability of the business, because of cases of poisoning of consumers. Malefactors didn't steal milk or proceeds, they tried to poison buyers by adding toxic substances in milk.

It is not worth to miss the human factor such as the error of the employee serving vending machines, incorrect collection and so on.

In this regard, to protect your business you need to use reliable vending machines or place them in a protected place, to train and motivate the staff serving the outlets.

Nowadays, mobile commerce received a great development. It is facilitated by the fact that a large number of operations cannot be made without mobile devices. The example of such a situation is a mobile application for parking cars. In this regard, vending machines can also be connected with mobile applications on the devices of potential consumers. This application can determine the location of the customer within distance from the machine, taking into account both the range of the machine and the list of consumer preferences, taking into account the data of previous purchases.

In places of large concentrations of potential customers are often installed at the same time several vending machines. The mobile application allows to refuse the use of input and output terminals directly in the part of vending devices, reducing the cost of its cost and maintenance. The choice and payment of goods is made using the possibilities of a mobile device. The disadvantage of this approach is the inability of some customers to use a number of machines, which with a certain probability can lead to an increase of queues near some devices in the presence of free others. In this regard, it is recommended to use the combination of input terminals, which in the case of automated forms will correspond to the electronic queue.

Electronic queue systems are currently quite expensive, but it is advisable to consider their technical component. The electronic queue system itself assumes the presence of an information input device (just a few keys), a simple computer for calculating customers, a printer, and monitors for displaying

information. Thus, this system does not involve any special equipment, which allows to predict the decrease of prices for such systems. Moreover, the mobile application allows to refuse all above components of interaction with the client, and the role of the central computer can be played directly by the vending machine. The information for the category of customers who do not use the mobile application can be displayed directly on the order terminal.

Vending machines have a great variety of customer service time. Using the mathematical machine of the theory of mass service, as well as the generally accepted in a number of shops queue length of five people, it can be noted (with an average service time of one minute) that the allowable flow of customers is 102 people per hour. In the case of the organization of the general queue, the average queue length will change slightly, but customers will spend in the queue not 5.6 minutes, but 2.6 minutes. Moreover, the process of faster queue movement is positively perceived by buyers, which has a direct impact on the image of the trade organization.

Using a mobile application, an important direction is also the formation of its own Wi-Fi network directly by vending machine, taking into account the hardware of modern digital devices is largely similar. It will be noted that the formation of its own Wi-Fi network allows to provide traffic analysis, which help to identify the main sources of information, the popularity of competing sites, that directly influence the efficiency of economic activities of trade organizations. Currently, cards that contain an electronic wallet and don't need a network connection are very popular. An example of such cards are transport cards (troika, podorozhnik). In combination with the use

of its own Wi-Fi-network of vending machine the use of these cards will allow to operate fully even in places where the full functioning of the Internet is impossible.

An important aspect of the development of automated trading is stimulation of trade. It can be both in the design of the trading device itself, and in attracting the attention of the customer to the sale items.

One of the problems of automated trading is the distrust of the target audience to the machines. The old generation of machines, which didn't give by mistake the goods and didn't return the money to the buyers, didn't give change after a purchase and made different errors in the investment funds, significantly ruined the reputation of this kind of trading. At the first stage of its development there were many failures because of which the buyer did not receive the previously paid goods. To increase confidence, it is necessary, first, to place the contact details of the service center, which can help to solve such problems. Secondly, it is necessary to place call manager's button on the machine, which could remotely solve problems and thereby increase customer loyalty.

Also, using vending machines, it is necessary to take into account the possible risks of vandalism, which leads to an increase in the cost of servicing the vending machine. Unfair competition can damage more. So, in the Moscow region it was necessary to remove all the dairies machines, despite the high profitability of the business, in connection with cases of consumers' poisoning. Malefactors didn't steal milk or proceeds, they tried to poison buyers by addition of toxic substances in milk.

3. Network planning in trade

Network planning consists of three stages:

1. Structural planning. It begins with dividing the project into clearly defined operations, for which duration is determined. Then a network schedule is built, which represents the interrelations of the project activities. This allows for a detailed analysis of all activities and improvements to the project structure before its implementation begins.
2. Schedule planning. It involves building a schedule that defines the start and end times of each activity and other time characteristics of the network schedule. This allows, in particular, to identify critical operations that require special attention in order to complete the project within the deadline. During schedule planning, the time characteristics of all activities are determined in order to optimize the network model, which improves the efficiency of using a resource.
3. Operational planning. During operational planning, a network schedule is used to compile periodic reports on the progress of the project. In this case, the network model can be subject to operational adjustments, as a result of which a new schedule for the rest of the project will be developed.

The network schedule shows the sequence of activities that are necessary to complete the technological process. The construction of the network (graph) is based on 3 main concepts:

- 1) work;

- 2) event;
- 3) path.

Work is a certain process that leads to the achievement of a certain result and requires the expenditure of some resources, has a duration in time. The term “work” can have the following meanings:

- 1) actual work that requires the expenditure of time and resources for a certain operation;
- 2) “waiting” – i.e. a process that does not require labor costs, but takes time fictitious work, which indicates a logical connection between two or more operations that does not require either time or resources. It is depicted on the graph by a dotted line (arrow) and indicates that the beginning of the next operation depends on the results of the previous one.

Event – a moment in time when some work is completed and others begin. An event is the result of the work performed and, unlike work, has no duration in time.

Thus, the beginning and end of any work are described by two events, which are called the initial and final events. Therefore, to identify a specific work, a work code (i, j) is used, consisting of the numbers of the initial i-ro and final j-ro events.

The work may also have other quantitative estimates that characterize the cost, material or labor resources required to complete it, etc.

A path is any sequence of interrelated events and works on a network graph. In a network graph, several types of paths should be distinguished:

- 1) a full path, i.e. a path from the initial to the final event;
- 2) a preceding path, i.e. a path from the initial event to a given one;

3) a subsequent path, i.e. a path from a given event to the final one.

The duration of any path is equal to the sum of the durations of the works that make it up.

The path with the greatest duration is called critical, and the works lying on this path are called critical works.

The duration of the work on the critical path determines the overall duration of the work package as a whole. Any deviation from the calculated parameters for the work on the critical path will affect the final deadline for all work. The critical path indicates the most intense and critical section of the work.

An event that has no preceding events, i.e., from which the project begins, is called an initial event.

An event that has no subsequent events and reflects the final goal of the project is called a final event.

Calculating a network schedule involves determining the following parameters: the duration of the critical path and the work on it, the earliest possible and latest acceptable start and end dates for the work, all types of time reserves for the work.

The duration of the work on the critical path determines the overall duration of the work package as a whole. Any deviation from the calculated parameters for the work on the critical path will affect the final deadline for all work. The critical path indicates the most intense and critical section of the work. Work on the critical path has no time reserve. The critical path is the basis for optimizing the plan. In order to reduce the execution time of the entire plan, it is necessary to reduce the duration of those works that are on the critical path.

The main time parameters of the network model are.

The early start date of the work is the point in time before which the work cannot start, the previous works must be completed.

Early completion date of work is a point in time, separated from the early start point of work by the duration of the latter.

Late start date of work is a point in time, after which the work cannot start, otherwise the deadlines for the implementation of the process will be violated.

Late completion date of work is a point in time, separated from the late start point of work by the duration of the latter.

Time reserve is a period of time, limited by the points of early and late completion of work.

All full paths, the duration of which is less than the critical one, are called non-critical. They have time reserves. Time reserves are understood as permissible shifts in the timing of events and work that do not change the timing of the final event.

Time reserves are full and free. Full time reserve is the period by which the start of work can be postponed or its duration can be increased with an unchanged length of the critical path. Full time reserve is defined as the difference between the late and early start of work or between the late and early finish of work. The critical path activities do not have a full time reserve, since their early parameters are equal to the late ones. Using the full time reserve on other non-critical paths results in the path to which the time reserve belonged becoming critical.

Free time reserve is the period by which the start of the activity can be postponed or its duration can be increased, provided that the early starts of subsequent activities do not change. This time reserve is used when one event includes two

or more activities. Free time reserve is defined as the difference between the early start of the subsequent activity and the early finish of the activity in question.

Time reserve allows for an increase in the duration of the activity or to start it somewhat later, and also provides the opportunity to maneuver internal financial, material, and labor resources.

The early start of the subsequent activity is determined by the early finish of the preceding one. The maximum value of the early finishes of the activities indicates the duration of the critical path.

To calculate the total time reserves, it is necessary to determine the late start and finish of the activities. The late starts and finishes are found starting from the final event. The late finish of the activity ending with the last event is equal to the maximum of their early finishes (critical path).

In the network diagram, in order to have data as a cumulative total, each constraint on the early start of the activity is recorded on the left bar of the cross placed above the event. The late finish of the activity is recorded on the right bar of the cross. In the diagram, events with identical entries on both bars of the cross lie on the critical path. All activities lying on the critical path are “bottlenecks” since they have no time reserve.

4. Business game "Competition"

Three trading companies sell a homogeneous product on a common market segment. The wholesale price of goods is the same for all enterprises. At the beginning of the game, enterprises have same monetary assets and inventories. Credit and debts at the beginning of the game are excluded.

Three players or three groups of players participate in the game. Each player (or group) makes decisions for one trading enterprise. The game has two options:

- playing with real players;
- playing with computer.

The game is built on a step-by-step principle. At regular intervals, which are the step of the game, players independently of each other selects the values, which remain constant during the step:

- amount of delivery of the goods,
- retail price of the goods,

In the first option, the game is played between real people, while the computer performs market modeling and economic calculations. In the second case, one of the players is the computer, the other two are real persons.

After that, sales and profits for each enterprise are calculated. The goods traded by enterprises do not belong to basic necessities, therefore, the demand for a product falls with the profit increase.

Increased cost of stimulating the sales leads to an increase in sales volumes, however, this increase is limited by the market capacity.

The calculation of the total sales volume for each enterprise is carried out in the following sequence:

1. Current demand on the considered market segment is calculated on the basis of the average level of retail prices and the total cost of stimulating the sales.
2. Distribution of the obtained value of the possible sales volume between enterprises. The distribution is based on specific values of the retail price and the cost of stimulating the sales of each enterprise, meanwhile not only the decisions taken at this step of the game are considered, but also those taken at earlier steps. The further earlier decisions are from the current step, the less impact they have.
3. Adjustment of sales volume for each enterprise based on the available stock of goods. If the possible volume of sales for a particular enterprise is bigger than the inventory value, then one part of this volume gets lost (buyers refused to buy or postponed it), and another part goes to competitors and is distributed among them depending on the level of their retail prices and the cost of stimulating the sales (buyers applied for purchase to another enterprise).

Gross income and enterprise profit are calculated, after the volume of sales for each enterprise is known. When calculating the costs of the enterprise, the following assumptions are made:

- transport costs are proportional to the number of delivered goods (in the simplest version of the game they can equal zero);

- the cost of storage of goods is proportional to the average amount of storage (in the simplest version of the game, they can also equal zero);
- other costs items are accepted as equal for all enterprises.

Taxation of enterprises is not taken into account.

The game provides for restrictions on the minimum size of the party supply, meanwhile the number of purchased goods selected by players is automatically adjusted so that the number of parties is an integer. Possibility of natural loss of goods during storage within the norms of natural loss is also envisaged.

Vendor payments are made on the principle of prepayment, so one can buy the goods for an amount not exceeding the value of the current monetary asset. Corresponding amounts are subtracted from the enterprise's monetary asset before the start of the step. Transport costs, cost of stimulating the sales, and storage costs are recorded at the end of each step. Other costs are recorded at the end of each month.

The game provides for the possibility of lending to the enterprise. Each player has an opportunity to take credit at any step of the game. There are three types of credits, which differ in terms of the credit period, the amount of interest for the loan, and the frequency of interest payments. Credit conditions are set before the start of the game and are the same for all participants. At the same time, the company can take no more than two credits. The amount of the credit is not limited, the credit period is limited within the game. The amount of interest on the credit and the necessary amount for repayment of the credit are automatically debited from the company monetary assets upon the occurrence of the respective term.

The company, which has exhausted the possibility of lending and left without money, declared bankrupt and no longer participates in the game. Then the game continues with two participants. If one of them declares bankrupt as well, the remaining player becomes a monopolist and wins the game.

If none of the players declared bankrupt, the game ends after passing a predetermined number of steps.

Players may enable the generating random events mode. These events are:

Change in the wholesale price of the goods. The wholesale price can both increase and decrease, while remaining the same for all enterprises. The current wholesale price is displayed on the screen.

Seasonal demand increase (decrease) that leads to market size increase (decrease) The moment when the demand is starting to change is chosen at random, the change itself occurs gradually within a few steps of the game, deviations at each step do not exceed 10–15%. Players may see warnings on expected seasonal demand variation on the screen. Seasonal variation applies to all enterprises.

Strike. The enterprise's work stops during this step, in addition, one-time costs are required in order to eliminate the consequences of the strike, the value of the costs is determined randomly.

Wholesale batch at a discount. The supplier offered a large batch of goods at a discount to one of the players. The player can accept or refuse this offer. The purchase of the party at a discount does not deprive the player of the opportunity to purchase an additional required amount of goods at a standard wholesale price.

Monetary loss. This type of random situations includes various monetary losses (fines, thefts, etc.). The enterprise's monetary asset is automatically reduced by the corresponding amount, which is selected randomly with the corresponding information appearing on the screen. A player can sue, and the amount of fine will decrease or increase depending on a decision.

Full purchase of goods. All goods are purchased by one buyer at the beginning of the step at an appointed price

Material loss. Loss of goods as a result of natural disasters, theft, violation of storage conditions. The stock of goods is reduced by the amount of loss, which is selected randomly.

The supplier's warehouse is closed. In this case, deliveries of the goods are impossible during the next step.

There are several levels of difficulty in the game, each of them depends on the cost of delivery and storage of goods and certain random situations. All these parameters are adjustable and can be set by the teacher before the start of the game.

The players are estimated in accordance with the results of the game and the ratio between the initial monetary asset and the received profit, the level of complexity and quality of decisions made in the course of the game are also taken into account.

To proceed to the next step, select continue. The game is played according to the number of the steps indicated in the settings of the option by the teacher, which can not be changed during the game.

The fields "Wholesale price," "Monetary asset," and "Stock of goods" are informational and not allowed to enter. By pressing "?" in the field "Monetary asset", the balance of funds with the purchase included appears. Filling in the fields is intended when using the program:

- The batch size – it should be kept in mind that only values that meet the requirements for the wholesale batch are allowed. As mentioned above, the number of purchased goods selected by the players is automatically adjusted so that the number of batches is an integer, note that the lowest permissible value is selected;
- Retail price – the price at which the goods are supposed to be sold;
- Trade costs – the cost of stimulating the sale of goods.

In case after all purchases the enterprise has a negative amount of means on the account, the program will not allow to move further (only in the business game mode). In this case, the player has two options – either to take a credit or to declare bankrupt (which means a loser side).

Data entry is carried out by all players in turn, in the game with a computer option the computer first sets the data.

After entering the data, a table will appear, showing the results.

In this table the possible sales volume shows the amount of demand for the goods in a particular enterprise, the realized sales volume is calculated in accordance with the available stock of the goods. The remainder of the goods is indicated at the end of the step in the “Stock of goods” line. The “out of retail” line is filled in a random situation “full purchase of goods by one buyer.”

Today, e-commerce requires improved sales technologies for effective development. This improvement is primarily achieved through the development and implementation of digital technologies, which are used in the vast majority of business processes of e-commerce retailers, such as management, logistics, customer service, and many others.

Currently, an increasing number of purchases are being made not in traditional online stores, but on marketplaces, which allow buyers to select products from a variety of independent sellers. For buyers, a marketplace is a trading platform, often characterized by positive consumer trust and the ability to find a wide variety of products while comparing prices and reviews from other buyers. All these factors create a convenient shopping experience, optimize customer interactions, and facilitate delivery of goods to customers, which positively impacts sales growth and contributes to increased profits. Therefore, the increasing role of marketplaces in modern commerce is one of the technologies for sales development. Marketplaces often serve two roles: firstly, they provide information services to a range of retailers, but they also act as direct sellers of certain products.

Convenience of shopping and a wide selection of products – all of this largely determines the important role of marketplaces in modern commerce. Currently, marketplaces perform not only direct information functions but also a number of operations within the trading and technological process. In this regard, the Fulfiment service is currently gaining popularity, where the seller only needs to transfer the product to the marketplace, and the marketplace handles further operations independently. Many marketplaces are currently developing around companies that initially had no direct connection to e-commerce, such as Sber (formerly Sberbank) and Yandex. In this regard, a potential development direction is the integration of marketplaces into ecosystems where the functions of the marketplace itself are difficult to identify. In the long term, ecosystems are expected to play a significant role in modern commerce, and their limited number will directly impact all

stages of the trading and technological process. Many retailers prefer marketplaces with a developed logistics system as their primary distribution channel, rather than organizing delivery themselves. To successfully operate in the highly competitive marketplace environment, companies are forced to change their product offerings and adapt to marketplace trends. Furthermore, retailers can use various sales-boosting tools in their personal accounts. According to research agency Data Insight, the pandemic has added more than 10 million new consumers to the online retail market, including older consumers. It's worth noting that the online retail audience is maturing. This is forcing retailers to change their product offering strategies to adapt to new demand trends. In modern conditions, artificial intelligence systems have been widely developed. Such systems are most widely used in the field of e-commerce, due to its direct focus on digital interaction technologies between sellers and buyers.

Organizing the sale of goods through a retail organization's website requires certain customer actions that can be recorded by appropriate technical means and analyzed using an artificial intelligence system. These actions include visiting catalog pages, the time spent viewing each page, search queries, and a number of other actions. This information can be analyzed by an artificial intelligence system, which, in turn, allows for conclusions about the role of various products in the assortment matrix, the characteristics of customer choice, and the groups of complementary and substitute products.

Currently, online customer support is often also built using artificial intelligence, with communication with a consultant replaced by a chatbot. The advantages of this approach in-

clude high response rates, 24/7 availability, and reduced costs for the retail organization. A disadvantage of this approach is a lower-quality analysis of customer requests, since the artificial intelligence system can only formulate its response based on a previously submitted training sample. However, analyzing the performance of such a system allows for improving the training set by using real customer requests as input and the correct actions of the artificial intelligence system as output.

Unlike human interaction, a chatbot always executes the entire program of predetermined actions, stores all information, and can independently analyze it. Therefore, the use of automated systems allows for tracking customer behavior patterns, determining which consumer properties of the offered product range are actually in demand, and assessing how well the existing product range meets end-user expectations.

5. Promising technologies for organizing distance selling

Another important use of artificial intelligence in retail is to assist in guiding customer choice. Some product lines require more careful selection, particularly fitting and color matching, which complicates the use of remote technologies for selling such goods. An artificial intelligence system allows for the customer to make a choice in such situations and, using feedback technologies and product return statistics, to analyze the effectiveness of the previously proposed recommendation and adjust it accordingly.

Artificial intelligence systems also play an important role in solving incentive problems in e-commerce retail. Analyzing customer behavior allows for targeted offers. In the medium and long term, the integration of artificial intelligence in guiding customer choice, including shopping cart selection and, in the long term, automated order generation, is expected.

Big Data technology – the analysis of big data – is also a fundamental foundation for building high-quality forecasts, generating mathematical models, and training artificial intelligence systems. Today, e-commerce organizations can obtain a vast amount of statistical information, primarily related to consumer behavior, purchases, preferences, selection patterns, and much more. To process this significant volume of information, Big Data technologies are used, enabling the fastest possible processing and delivery of results. For example, this technology is actively used to generate recommendations for

customers when choosing a specific product. To achieve this, it is advisable to process information about other customers' joint purchases in near real time and suggest the most relevant products. This is especially relevant for marketplaces, where the product selection is extremely wide.

Important factors when choosing products in online stores include attractive prices, the availability of product reviews, and, for young millennials and members of Generation Z, the eco-friendliness of the products. These generations often use smartphones rather than computers when shopping.

Mobile phones are currently the most widely used internet device across the country, including Russia. And since Generation Z will make up a third of the workforce by 2030, it's safe to assume that mobile shopping will only increase in the future. Shopping through mobile apps and voice assistants will become even more commonplace.

Voice interfaces are currently one of the most popular alternatives to text search. Approximately 45% of all internet users said they used voice search or voice commands at least once in the past month.

In Russia, voice assistants are rarely used for online shopping. However, according to Adweek forecasts, within a few years, the majority of all internet searches will be conducted exclusively by voice. However, consumers worldwide prefer to trust voice assistants only for inexpensive purchases – ordering food delivery, paying for a taxi, buying groceries, or buying household items. Larger purchases, such as furniture and plane tickets, are typically made independently. However, the use of voice input is often associated with a number of potential difficulties, which will be discussed below.

Furthermore, image recognition tools have become increasingly popular in recent years. According to statistics, nearly a third of internet users worldwide actively use various image recognition tools on their mobile devices. This feature also represents a particularly interesting opportunity for e-commerce brands, including those in categories such as fashion, beauty, home goods, and even consumer electronics.

Currently, there are numerous apps and search engines that can help you find a similar or identical image to the photo you're searching for in just a few seconds. The number of users of these search platforms is constantly growing, and this feature is steadily becoming a part of our everyday lives.

This feature can also be adapted for modern online stores, improving product searches within the catalog. By integrating image recognition into an online store's search bar, potential customers will be able to find similar products with photos from the store's current product range. A potential customer can visit the online store, upload a photo, and the app will identify and display similar clothing items from its catalog. This will allow you to create similar looks even from just a few wardrobe items, and will help increase the number of items purchased.

If potential buyers can quickly find the product they're looking for online, they're much more likely to make a purchase. This is why retailers are using visual search on their platforms to optimize the customer journey from search to purchase and increase conversion. In the medium and long term, a combination of visual search and a number of factors, such as voice information and others, offers potential.

E-commerce in grocery and prepared foods, while currently experiencing positive growth, lags behind other product cat-

egories. Much of the positive growth in sales of these products is artificial and related to restrictions imposed during the pandemic. One factor hindering the development of online grocery retail is customer distrust of the employees who process orders. This poses the risk of receiving products with a short shelf life or quality that doesn't meet customer requirements. Typically, such concerns arise primarily when ordering vegetables, fruits, and other products with short expiration dates.

One way to address this issue and increase customer confidence could be to implement the ability to monitor the order picking process via video call. To do this, the customer should be given the option, at the time of ordering, to select which items they want to personally monitor and make adjustments if necessary. However, implementing this technology will impact the store's assembly costs and, therefore, in the short term, may need to be offered, for example, on a paid basis or to a premium customer segment. Therefore, in the short term, it would be more practical to implement only the ability to monitor the order picking process and keep the customer informed about the various stages, with actual monitoring possible only in the long and medium term.

Another significant factor currently hindering the growth of online retail for everyday goods is the delivery process. For online purchases, delivery is essential, and for the buyer, this means either specifying a pickup date and time when placing the order, which is not always convenient, or incurring additional costs for in-store pickup or pickup at a pickup location. According to a PwC study, when ordering home delivery, buyers prefer the ability to receive the item on the day of the order, and 88% are willing to pay for this service. However, the lack of customer-

facing delivery options significantly reduces the likelihood of ordering. Therefore, it makes sense for online stores to develop delivery options, offering the option of receiving the item on the day of the order or even within a few hours. However, today, this service is not always expensive or premium.

Contactless delivery technologies, such as door-to-door delivery, can reduce the need for the buyer to wait for the courier. This eliminates the need for the buyer to be present at the time of delivery. This technology is effective for small, regular, low-value purchases, where the risk of loss is low. This risk can also be minimized by a number of other factors, such as in buildings with a concierge. In turn, the use of such technology allows distance selling to eliminate the drawback of having to allocate a designated time slot for courier delivery.

The ability for customers to receive goods quickly places additional burden on online store courier services, which, given the overall transport congestion in large cities, becomes an additional challenge. One solution is to increase the number of couriers, but this increases costs. New delivery technologies, such as robotic couriers, are currently being tested. Yandex launched a first-generation courier at the end of 2019. This robot is capable of making local deliveries over short distances, navigating using sensors. It can recognize passersby and cars, and can predict their behavior. Problems typically arise in high traffic conditions and poor visibility. It should be noted that, due to the aforementioned limitations, the implementation of this technology is only possible in the medium term. In the long term, drone delivery using aerial drones is more feasible. However, this technology has several limitations, which will be discussed later. One of the main limitations is the cost of air de-

livery vehicles, which are currently comparable to those of robotic couriers. However, air delivery offers a more open, three-dimensional environment, allowing for a more efficient system of interaction between various objects. It should also be noted that implementing this technology requires infrastructure development and legislative regulation, which limits its potential for use only in the long term.

Customers note that the convenience of the payment process is an important factor in completing a purchase. Today, when paying online, the process typically requires the buyer to enter card details and confirm the transaction using a verification code sent to their mobile phone. Consequently, without card details or access to the mobile phone, payment becomes impossible.

One effective solution to this problem is FaceID, a payment confirmation technology. This requires a camera, which is now available on many laptops and desktop computers, simplifying and speeding up the online payment process. Furthermore, eliminating the need to enter card details, which poses an additional risk, will also increase the conversion rate of online stores.

However, it should be noted that this technology is still developing, and therefore can be recommended as an additional method of identification and payment. This technology is a good complement to authorization via special SMS or Push messages, which are currently targeted by malicious attacks. It should be noted that the current use of FaceID and FacePay technologies rightfully has a number of drawbacks, requiring additional authorization. Therefore, potential developments include the use of SMS or push notifications in the short term, voice technologies in the medium term, and the use of the full-range of biometric data in the long term.

Today, it's difficult to imagine an effective and growing retail business without a website. This is essential both for image and, most importantly, as an additional sales channel. A website's effectiveness in terms of sales is determined by a significant number of factors. Primarily, this includes the product range, pricing, and delivery and payment terms. However, the method for presenting the product range on the website is also crucial. Various technologies are used for this purpose. Today, simply providing a product photo and description isn't always sufficient to achieve effective sales. For some products, the problem of evaluating a product based on its description, without physical contact, is quite acute.

To minimize this problem, online stores today employ various technologies. One possible way to more effectively present a product to a buyer is through video consultations. The buyer can request a video call with a sales consultant, and the store employee will show a sample of the product and answer the buyer's questions. However, this is only possible for retailers that combine online and offline sales channels.

Another way to more effectively showcase a product on the website is to create 3D images of the product. These models allow the buyer to virtually inspect the product from all sides, rotate it, and examine its features in more detail.

It should be noted that this 3D is not real. The buyer sees a flat image and uses their imagination to complete it. Nature intended that 3D images be formed by transmitting various information to the human eye. This 3D is real. Therefore, in the medium term, the use of 3D with glasses is envisaged. This requires the purchase of specialized equipment, but such equipment is relatively inexpensive. A distinction is made between

active and passive 3D. In active 3D, the monitor alternately generates an image for each eye. Passive 3D relies solely on polarizing films, which significantly reduces the cost of the equipment, but also slightly reduces image quality. Finally, anaglyph, where the image is separated by color, is practically free.

In the long term, eliminating the need for glasses has significant potential. Prototypes of such devices have been developed by FujiFilm (a drawback is that the relative position of the user's eyes and the display must be precisely determined, which is impossible for photo frames presented by FujiFilm, but quite feasible for online purchases). However, mass production of such devices is not currently underway, and their cost is high, making this technology only a long-term prospect.

One modern technology, yet underutilized in the retail sector, is blockchain. This technology allows for more secure data storage using decentralized, distributed databases.

Blockchain technology has numerous potential applications in retail. This technology could become a key element in the development of international trade. Its use is currently being seen on the Ethereum platform for transactions. Despite several limitations related to data protection and rights management, transactions using blockchain technology are automated, reducing costs and accelerating their execution.

Blockchain technology can be used to reduce the risks associated with information loss and theft. The use of blockchain platforms as reliable information aggregators will reduce paperwork and improve the reliability of supplier information, which is particularly relevant in international trade.

The inability to change information in a database built using blockchain technology is particularly relevant in the area

of property rights protection. This will reduce the challenges associated with the sale of digital goods, allowing for more effective identification of copyright holders and the protection of their rights.

With the rapid development and implementation of digital technologies, digital security issues, especially the security of personal data, are becoming increasingly pressing. The current level of digital technology development is primarily aimed at providing convenience to users, but each new technology also carries the risk of new fraudulent methods previously unknown to IT specialists. It is impossible to detect all hacker tricks in advance. Therefore, the primary danger and risk is the need to ensure security directly in the network space, protecting information displayed on the user's screen or transmitted over telecommunications networks.

The use of any information technology is directly linked to electronic devices, the effects of which, despite their extensive history of use, remain poorly understood. Moreover, modern display devices rely on direct light to the user's eyes, which is unnatural. The problem of direct light can be solved by using e-paper technology, which does not use light sources; however, both image quality and rendering speed are extremely low. Such a device could find widespread use, but only with a proper sales promotion program.

The situation is exacerbated by the use of 3D technologies, which are directly related to the use of glasses. Anaglyph technology produces completely different images in terms of color in the two eyes, while active 3D means that the image is actually presented to the eye less than half the time. Although in both cases the person sees a full image, the information pro-

vided is unnatural and negatively impacts the brain. Passive 3D technology does not have this drawback, but there is currently little research on the effects of polarized light. Moreover, in existing devices, light remains polarized constantly, even without the use of glasses. Therefore, it is necessary to note the negative health impacts directly related primarily to 3D technology.

The high potential for the development of FaceID facial identification technology and, consequently, FacePay, the payment for goods and services using one's face, has previously been demonstrated. Cases of FacePay being triggered by photographs have already been reported, and it is also unknown how the system will perform during its widespread implementation. In this regard, it's worth noting the security of biometric data and the potential for falsification during electronic payments as a risk.

Currently, a number of retailers are expressing the opinion that most of their sales are coming from marketplaces rather than their own websites. While previously there were opportunities for price competition and website promotion in search engines and social media, these are currently ineffective – buyers launch the marketplace's mobile app and search for products exclusively there. At the same time, marketplaces and ecosystems are currently integrating, which determines the high economic potential of marketplaces within ecosystems in competitive markets. Therefore, there is a risk of market monopolization by ecosystems.

Drone delivery technology, using airspace, was previously noted as a promising technology. This technology is potentially more promising than delivery by robotic couriers, as airspace is three-dimensional and unoccupied by humans, whose

behavior is unpredictable. With the development of the necessary infrastructure and legal framework, fully digital control is possible. This would also relieve courier services from burdening two-dimensional highways. However, the reliability of technology is always characterized by a certain probability of failure, and a drone crash at altitude with heavy goods could result in serious consequences, including fatalities. Therefore, it is important to note the potential for accidents, including fatalities, during delivery.

Information is presented to consumers in distance selling primarily through visual means. Consumers receive information directly via a monitor display, and the information is captured using digital cameras. However, the primary characteristic of a monitor is its digital gamut, or the accuracy of the colors it renders. The capabilities of a digital camera are also determined by its dynamic range. When using budget-level devices, these capabilities are insufficient to adequately inform the buyer about the product. Parameters such as weight and dimensions can only be conveyed numerically, while some parameters, such as odor, are impossible altogether. Therefore, it is worth noting the risk of insufficiently accurate information delivery to the consumer, which is associated with the capabilities of budget-level equipment.

The use of all the above-mentioned technologies also requires collaboration with organizations in other sectors, such as those providing communications and logistics services. One of the real risks currently being discussed is power supply. In particular, delivery robots and drones use relatively high-capacity batteries as a power source. If they become more widespread, this will increase the load on the power grid, necessitat-

ing upgrades. In this regard, it is important to note the rising prices for third-party services.

Finally, it is also important to consider the attitude of market participants themselves toward innovation. In particular, the implementation of blockchain reduces potential fraud, makes it impossible to enter or change information retroactively, and makes most transactions completely transparent and controllable. This is an advantage of the technology for the state, but it is disadvantageous for market participants themselves. Therefore, there is a risk that market participants themselves will not accept the changes.

References

1. Aleksina S.B., Ivanov G. G., Kryshalev V. K., Pankina T. V. Sales Promotion Methods in Trade: A Textbook / S. B. Aleksina, G. G. Ivanov, V. K. Kryshalev, T. V. Pankina. – Moscow: FORUM: INFRA-M, 2026. – 304 p.
2. Bragin L.A., Pankina T. V. Organization of retail trade on the Internet: textbook – Moscow: FORUM: INFRA-M., 2023. – 120 p.
3. Dashkov, L. P. Organization, technology and design of enterprises (in trade): a textbook for bachelors / Dashkov L. P., Pambukhchiyants V. K., Pambukhchiyants O. V., – 12th edition, revised and enlarged. – Moscow: Dashkov i K, 2019. – 456 p.
4. Dyganova R. R. Optimization of Quality Parameters of Trade Services in Distance Selling // Regional Problems of Economic Transformation. 2024. – No. 4 (162). – P. 213–221.
5. Kulichkova A.D., Nikishin A. F. Digital Technologies in Trade Activities in the Context of Import Substitution // Economy and Management: Problems, Solutions. 2024. – Vol. 3. – No. 5 (146). – P. 129–134.
6. Prokhorova M.V., Kodanina A. L. Organizing an Online Store: A Practical Guide / M. V. Prokhorova, A. L. Kodanina. – 6th ed., reprinted. – Moscow: Dashkov i K° Publishing and Trading Corporation, 2023. – 332 p.