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FORMATION OF ASSORTMENT POLICY IN TRADE

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An important area that directly affects the efficiency of economic activity of trade organizations is the formation of an assortment policy. The tutorial discusses the formation of a range of products taking into account various factors of the external and internal environment of a trade organization, as well as aspects of effective assortment management. The textbook covers issues related to the selection of the product range offered in the context of digital trade. The textbook is intended for students in such fields of study as 38.03.06 “trading business” and 38.04.06 “trading business” as part of bachelor's and master's programs.

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Introduction

The main task of trade is to organize the movement of material resources from the sphere of production to the sphere of consumption in such a way as to ensure the timely supply of goods in the right place, in sufficient quantity, the necessary range, and proper quality.

Assortment management issues are always extremely relevant for the retail business. The final indicators of financial results, profitability, and, in strategic terms, the company's competitive advantages and its position in the market depend on how effectively they are solved. Rational formation of the assortment of goods in the store and its management largely ensures the necessary level of customer service and growth of the most significant economic indicators of the trading enterprise.

Today, against the background of the expected decline in the purchasing power of the population, as well as possible restrictions on the entry of foreign goods into the Russian market, the range of retail enterprises requires significant adjustments and new approaches to management.

The purpose of the proposed study manual is to help students in studying the characteristics of the formation of the range in modern conditions, including:

- being in possession of the principles of thinking; as well as ability to summarize, analyze, perceive any information, set the objective and choose the ways to reach it;
- ability to find organization and management decisions in

non-standard situations, make own decisions and have the will to bear responsibility for them;

- awareness of the essence and meaning of information in the development of the modern society; being in possession of the main methods and means of receiving, storing and processing of information; computer skills as the tool for information management;
- willingness to apply economic laws and theories, to determine economic indicators;
- ability to apply the basic laws of social, humanitarian, economic and natural sciences in professional activities; as well as the methods of mathematical analysis and modeling, theoretical and experimental research; being in possession of the mathematical techniques in solving professional problems;
- ability to forecast business processes and evaluate their effectiveness;
- willingness to identify and meet the needs of the buyers of goods, their formation with the help of marketing communications; ability to study and forecast consumer demand, analyze marketing information and market conjuncture;
- ability to collect, store, process and evaluate the information needed for organization and management of professional activities (commercial, marketing, advertising, logistics or merchandising);
- ability to provide procurement and sale of goods; to manage the inventory;
- willingness to analyze, evaluate and develop the strategies for organization.

The basics of the formation of assortment policy in trade

Assortment management is an activity aimed at achieving the requirements of assortment rationality.

The main stages of management are:

– establishing requirements for the assortment rationality;
– defining the organization's product policy;
– assortment formation.

Regulation of the above factors is the essence of assortment management and is achieved by establishing certain requirements for a rational assortment. These requirements are regulated by a number of regulatory, engineering, and technological documents.

The success of a trade organization is largely determined by the quality of performance of functions and adherence to management principles. Management functions are a set of actions that are often repeated in the management process, having a direction and character. In the management of an enterprise's assortment, there are also four main management functions: assortment planning, assortment organization, assortment coordination, and its control.

Let's look at these functions in more detail.

Assortment planning is the process of defining a program of actions for creating an assortment based on the analysis of the market and all types of resources of the organization.

Assortment organization is the distribution of tasks between individual divisions or employees of an enterprise for the assortment formation and the establishment of interaction between them.

Assortment coordination is ensuring that the principles of assortment management are aligned with the company's strategic goals.

The control range is a type of management activity associated with the formation of information about the state and functioning range (accounting), studying data on the range (its analysis), work on diagnosis and evaluation of development processes and the achievement of objectives, efficiency, assortment strategies, successes and failures in the use of means and methods of control range.

Thus, the management of the company's assortment is a complex process that includes the main classical management functions.

The product range is a set of products with a common attribute or a set of attributes.

The product range is an important factor affecting the competitiveness of a trading company.

The product range is a complex system. In such system, the products differ by the variety of their consumer properties, characteristics of a particular purpose, nature of use, involvement in meeting the needs of consumers, and the effect of consumption. Products differ in terms of materials used to manufacture them, structural design solutions and manufacturing technologies, dimensional characteristics (volumetric, linear, and dimensional), shelf life, consumption periods, and multitude of other characteristics.

A difference is made between industrial and commercial product range. Industrial product range is a range of products manufactured in a particular industry or individual industrial enterprise.

Commercial product range is a range of products available in a commercial chain.

The industrial product range can be transformed into the commercial product range by sub-grading.

Commercial product range reflects the specialty of the store.

The selection of the product range must comply with the requirements of the law. A product range is a set of products formed according to certain characteristics and meeting a variety of similar and individual needs. A trade assortment is a set of goods formed by a trade organization taking into account its specialization, consumer demand, and material and technical base.

Assortment formation is the activity of creating a set of products that allows you to meet real or projected needs, as well as achieve goals defined by the organization's management.

Assortment formation cannot be abstracted from a specific organization and should be based on pre-selected goals and objectives that determine the direction of assortment development.

Factors of assortment formation:

There are general and specific factors of assortment formation.

The general factors that influence the formation of a trade assortment are demand and profitability.

Demand as a need, supported by the solvency of consumers, is the determining factor in the assortment formation. In turn, the demand depends on the segment of consumers (their income, national, demographic, and other characteristics).

Scientific and technological progress is a powerful incentive to update the range of consumer products. The development of fundamentally new products that had no analogues before, as well as products of improved quality, is possible mainly as a result of the development of science, engineering, and technology.

Specialization of a trade organization is one of the most important factors in the formation of a product range. It is determined when the organization is created, licensed, or certified. The organization's management decides on the specialization that determines its future activities, including the assortment formation.

Product distribution channels are also important when creating the trade list. A well-established supply chain through distribution channels acceptable for trade, the rhythm of delivery at the right time and in the required volume facilitate the work on the assortment formation, ensure the preference for purchasing goods for which there is an established sales system.

Methods of stimulating demand formation, in particular advertising support for products, in a saturated market also affect the formation of a trade list.

The material and technical base of a trade organization can have a certain impact on the assortment formation. If the company does not have warehouses that ensure the safety of goods in proper conditions, or the area of the sales floor for the display of goods of a complex or expanded assortment, the organization should not plan such an assortment. For example, you can not include perishable or frozen food in the assortment if there is no refrigeration equipment.

The consumer segment that a trade organization reaches determines the range of products by the level of quality and prices (expensive or high-quality or cheap low-quality products). National, religious, and individual consumer needs can influence the assortment formation.

Range of goods has specific characteristics. There are six basic definitions that characterize the different sides of the range:

- Width of the range;
- Depth of the range;
- Stability of the range;
- Completeness of the range;
- Structure of the range;
- Extent of renewal.

The main properties of the range are the following: width, depth and stability.

Width of the range — number of existing groups and types of goods.

Depth of the range — number of different goods.

Stability of the range — provision of permanent range of goods of all groups, sub-groups, types and varieties, which must be in the store. Coefficient of stability range is defined as the ratio between the quantity of goods available for sale and the number of goods that is stated for the store (required quantity).

Trade range consists of two major parts: food and non-food goods. The ratio of these parts, changing the ratio in time confirms the patterns of trade range development.

The ratio (most often in percentage) of goods allocated on any grounds in accordance with their quantity means the structure of the range. The share of food and non-food goods in their quantity is the structure of trade range.

The following stages can be distinguished, when embedding the principles of category management:

Stage 1. Formation of the category of goods — determination of categories and principles for grouping all the goods based on consumer decision-making tree.

Stage 2. Determination of role of the category of goods under the Company's range policy — analysis of the capacities in relation to all levels of the category of goods by obtaining information about the market, customers, suppliers, competitors and retail operator.

Stage 3. Evaluation of the category of goods — provision of the category of goods with specific role on the basis of all the data obtained during the analysis of the market's perspectives and behavior.

Stage 4. Formation of the standards for product category/evaluation of the objectives of the category of goods — determination of standard values of specified indicators for each category of goods. Determination of the objectives and the indicators, which are to be reached with the categories of goods.

Stage 5. Determination of the strategy for the category of goods — development of marketing strategy, reflecting the role of the category of goods and designed to reach the objectives.

Stage 6. Development of the tactics for the category of goods — development and implementation of tactical activities in the field of range and price policy, supply plan and movement of goods due the format of the store.

Stage 7. Execution of the plans related to the category of goods — execution of business plans specified for the category and represented in the implementation of the strategy or tactics.

Stage 8. Control and adjustment of plans — evaluation, monitoring and correction on continuous and periodic basis.

Job description for the Category Manager:

- Maintains databases of suppliers within the category.
- Contacts suppliers.
- Studies new proposals from suppliers, analyses proposed range, makes decisions about adding them to the range matrix.
- Performs checks of the documents provided by suppliers together with the legal department and the security service.
- Solves disputable issues with suppliers in relation to conditions of supply, documents and payment for supplied goods.
- Implements promotions within the category.
- Responsible for the KPI of the category, implementation of plans and strategies, marketing plans, implementation of plans on marketing receipts from suppliers.
- Performs the work related to the planning of presentation of goods in the store.
- Responsible for the safety of all the funds and property of the Company.

Procurement process performed in retail companies is highly complex. It consists of preliminary, procurement and subsequent operations. Preliminary operations are the following: Studying and forecasting of consumer demand, preparation of orders for goods, preparation of operational orders for regular supply, analysis of relationships in the system of procurement, and the development of requirements for suppliers to improve the supply. These same operations include analysis and decision of the issues related to the goods and the trade companies, on which direct relations should be established, and what goods are advisable to buy through intermediary companies.

Procurement operations are the following: Conclusion of supply contracts, their extension, refinement, conclusion of individual transactions for the purchase of individual goods, receipt of goods and relevant payment.

Subsequent operations are considered to be the monitoring of contractual rights and procurement process in general.

Planning of procurement activites is performed in the following order:

- Collection of information on the basis of researches, study of specific magazines, catalogues, directories, oral information;
- Determination of the field of activity by studying already known and potential suppliers in terms of quality and prices of their goods, range of services provided, their reputation;
- Studying of goods by comparing them with the goods available on the market due to the quality;
- Analysis of the needs and capacities of potential suppliers;
- Calculation of the total needs, i.e. determination of the quantity of goods which the store is needed, given the structure of the range of goods;
- Choice of procurement strategy on the basis of the following options: Wholesale procurement

Regular procurement of small batches; as required;

- Operational decisions in the field of number and range, time of supply on the basis of financial ability and status of store procurement base;

- Control over the implementation of procurement activities (continuous or by random checks).

Retailers face the target to determine the proper quantity of bought goods for a certain period of supply, when organizing the procurement: Determine the quantity of procurement — to find the optimal quantity of the order, i.e. its level, at which the efficient use of non-trade premises can be reached, as well as inventory storage costs be minimized. All these factors are closely linked. For example, trying to reduce the level of inventory, there should not be no reduction in the level of customer service — the basis for the competitiveness of companies. Although frequent small orders to supply the goods reduce the inventory and consequently the need in storerooms, they also increase the costs related to the supply of goods.

It is rational to buy and sell only the limited number of items In the early stages of range formation in order to make commercial services focus on its efforts on quality improving and establishing standards for the quality of basic goods. Further expand of the range of goods is possible only after that.

Demand is characterized by payable demand of the population and is determined by the maximum ability of the buyers to pay for goods. The quantity of the demand is determined by the maximum number of goods that the buyer is willing to buy at the offered price for a certain period of time.

There are following types of demand:

- Macro-demand — demand for the goods of specific group of goods;
- Micro-demand — demand for specific goods;
- Realized demand — demand, ending by the buying;

- Unmet demand — demand for the goods that are not for sale;
- Forming demand — demand for new and less known goods.

Also, considering the relation of the buyer to the goods, there can be: well-defined demand, which does not allow the replacement of one product with the other; alternative demand, allowing the replacement, and impulse demand that occurs spontaneously under the influence of seen goods or trade advertising.

The main factors that form the demand are the following:

- Amount of available income of the population;
- Price level for the goods;
- Price level for the goods that replace the very goods in consumption;
- Price level for the goods that complement the very goods in consumption;
- Traditions of consumption;
- Intensity of advertising on the market;
- Season of the year;
- Expectations of consumers;
- Demographic characteristics of potential buyers (sex, age, nationality, professional membership, religious beliefs, etc.)

The influence of price on the quantity of demand is characterized by the so-called demand curve. Depending on the type of this curve, there can be distinguished: elastic demand, the quantity of which depends on the price of goods; and inelastic demand, which practically does not depend on the price. The second group includes the goods of prime necessity.

Between the quantity of demand for goods and the prices of the goods that replace them, is a direct correlation, i.e. the increase in the prices of replacing goods under consideration leads to the increase in demand. So, for example, the increase in the prices of tea, taking in consideration all other equal conditions, can lead to a greater demand for coffee, juice or soft drinks. Influence of changes in the prices on complementary goods will be reversed, i.e. the increase in the prices will decrease the demand for such goods. For example, increase in the price of sugar can lead to decrease the demand for tea and coffee, and vice versa.

The situation is not so simple, when the analysis of the influence of the buyer's income on the demand takes place. All the goods can be divided into two categories, depending on the nature of changes in the demand for the goods, considering changes in income: perfect goods, the demand for which is increased with the increase in income of buyers, and imperfect goods or goods of the lower category, the demand for which is decreased with the increase in income of buyers. It should be mentioned that the same goods can be perfect for one group of people of the population and imperfect to the other, depending on the level of income.

The intensity of advertising activity does not significantly influence the quantity of demand for goods of prime necessity, as well as the goods that are traditional in the region of the location of the trade company. In all other cases the increase in intensity of advertising activity leads to increased demand. However, such increase has its limits. It can be limited by market capacity and psychological characteristics of perception of advertising, when excessive intensity of advertising activity may lead to the opposite effect, i.e. to decrease demand.

It is very difficult to take into account the influence of expectations of all the buyers on the demand, because their changes are often random and can lead to a sharp increase in demand, for example, in expectation of higher prices, as well as the lower prices, when any information about new goods takes place.

And, finally, the demand for certain types of food, clothing, footwear and some other goods is subject to seasonal fluctuations. It must also be taken into account.

Everything mentioned above describes the demand for the goods related to a certain segment of the market (region, city, district), where the trade company is located. However, the existence of demand for goods in a certain segment of the market does not mean the demand for the same goods within a specific trade company. The competitiveness of the company, which is determined by many factors, as well as the number of competing companies must be taken into account for estimating and forecasting the demand in specific trade company. The main factors, influencing the competitiveness of the Company and the demand, shall be the following:

- Price level compared with the prices of competitors;
- Width of the range of goods;
- Quality of goods;
- Range of related goods;
- Availability and quality of additional services;
- Qualification of personnel;
- Location of the Company;
- Quality of advertising, etc.

In this context, the problems related to the analysis and forecasting the demand have become quite complex with the precise method of their solving to be depended on the type of goods or relevant group, as well as the type of demand and the objectives of the analysis.

Analysis of realized demand is to examine the structure of the sale of goods and the movement of registered inventory. Actual sale of goods for a certain period of time can be calculated from the ratio of goods balance:

Source information for the calculation of realized demand is the data on inventory at the beginning and the end of the period studied. Inventory data can also be considered. The data on the receipt of goods can be taken from invoices and waybills.

For products with longer retention periods the study of realized demand is to be supplemented by inventory analysis. The data on the level and the range structure of inventory allows to judge on trends in demand; compliance of goods procurement to the structure of demand of buyers; identify the goods of slow turnover.

Analysis of the dynamics of actual commodity turnover with an option to compare results allows to determine trends in the development of intra-group structure of satisfied demand for individual products. If there is a sustained change trend of satisfied demand with an opportunity to calculate the expected value of the demand for the coming period, it can be completed with various methods used. The most popular method is a prognosis of rolling average trend.

As we can see from the ratios, this method takes into account only the overall trend of demand changes and does not consider time dependencies (for example, seasonal demand fluctuations), and also does not provide an opportunity to determine the nature and level of influences on the listed above demand factors. To study the issues, we need to use methods of correlation and factor analysis, as well as various methods of approximation and determining trends, it is possible with the use of specifically developed and widely available computer software. However, even in this case, accurate forecasting of the demand is not always possible, because many random factors affect it. Therefore, all the described methods can only be used for approximate estimation or for prognosis of sufficiently stable product demand.

Study of unsatisfied demand is made by recording requirements of buyers. It is important to record not only the product name and frequency and mass demand level, but also product features like color, size, style, variety, etc. An average purchase sum multiplied by the number of cases of unsatisfied demand help us to calculate the volume.

The emerging demand for various products can be studied using methods like trade fairs and exhibitions, show rooms, surveys of buyers (both oral and written), tastings, as well as through special observations over sale processes of new or unknown products.

The benefit the method of surveys is that a single survey provides a whole set of information: emerging trends in demand, requirements of buyers regarding consumer properties of the goods, information about satisfied and unsatisfied demands, average size of a purchase, frequency of purchases of the product, average price that meets the expectations of customers, as well as expected number and demographic characteristics of potential buyers. It is also important to choose a correct number and composition of the respondents to have a representative group, reflecting the range of customers.

The obtained data must be considered as a source for determining potential sales volumes. Nevertheless, in conditions of wide interchangeability of products, overall excessive supply comparing to demand and with actual competitions the results gained will not reflect actual demand of population for a particular product. Therefore, to improve the accuracy of the calculations it is necessary to adjust them considering actual sales volumes.

Suppliers may be:

- producers and manufacturers;
- foreign suppliers (importers);
- wholesale companies;
- individuals (mediators).

We can highlight the following sources of information about suppliers:

- database (including proprietary);
- market research (third party and proprietary);
- commodity exchange;
- wholesale fairs;
- exhibitions and trade fairs (organized by producers);
- advertising messages (radio, tv, newspapers, magazines, catalogs, Internet);
- special offers with product information (quantity, price, delivery conditions, etc.) sent by suppliers to potential customers. Offers can be firm (for supply to a single potential customer; it contains the period the seller does not offer consignment of goods to another buyer) and free (free goods offer to the general public);
- a visit to the manufacturer of goods.

Provider search criteria are different — product price; product quality; product range; terms and conditions of delivery; terms of payment; lot size, etc. There is a large number of factors to be taken into account when choosing a supplier, as well as it is not possible for quantified evaluation of some of the factors. It causes a real challenge to select a supplier.

In different situations every criterion for every supplier is different. If the company focuses on the upper price segment, the criteria can be product quality; product range; terms and conditions of delivery.

If the company focuses on the lower price segment, the main criteria will be price ones as they effect on the total cost of the purchase of products.

Regarding a wholesale commercial company enterprise we have to admit that different partners supply different commodity. Accordingly, for every product the criterion of supplier selection will be different.

Supplier selection belongs to the tasks of multicriterion optimization. The tasks are selections of one of multiple Pareto points. When selecting a supplier they used to use the method of task combination for a single criterion.

To determine the importance of the criterion we can use the method of expert evaluation. it is based on opinions of specialists:

- through creation of an expert council developing a single opinion as a result of a discussion;
- by compiling and averaging evaluations performed by independent experts.

When selecting a supplier with the expert evaluation method you have to compile a list of all the factors that will be taken into account. Usually, all the factors are divided into two groups: major factors to be included in the late supply agreement, and additional factors that may not be described in the additional agreement, but have a significant impact on the final supplier selection.

The essence of the method is to assign a value to each supplier with points, then the points of each supplier are summarized. The importance (significance) level of each of the mentioned when selecting a supplier will be different, and you have to take it into account when summarize the points given.

To determine the weight of each criterion you can use the pairwise comparisons.

The scheme of the pairwise comparisons method is sensitive to fulfilling the matrix. 3 more or less equal factors can form so-called cycle with the 1st factor is better than the 2nd one, the second one is better than the 3rd one, but the 3rd one is better than the 1st one. It is also not possible to fill the matrix with correct values considering a coherence. Considering several factors (one is better than another) and when there are more of them than items in the scale, the excessive factors need to be assigned the same weight but it is not correct. Moreover, consistency requirements imposes certain restrictions on the weights, not allowing to use a series of numbers. Increasing scale would lead to nowhere, because the score made by a human using a 100 points scale is practically impossible.

The method of expert evaluation provides only the quantitative picture. It is only about the importance of the criteria, but not about losses of the company. For that you can create a matrix with rows assigned to prospective suppliers and columns assigned to criteria. Accordingly, table cells have to be filled with estimated cost, losses, risks, etc. for the company.

For example, if a criterion is related to a price of a supplier, an appropriate cell has to be filled with a cost for purchase, if a criterion is related to a location of a supplier, a cell has to contain cost for transportation, if a criterion is related to reliability of a, a cell has to contain cost to cover a risk with its probability.

Then sums for all rows are output and a supplier with optimal conditions is selected.

Building a table like that may be made repeatedly, built tables may be aggregated with each other, and the value may vary due to lower cost for transportation of the goods, bigger lots, volume discounts, etc. Nevertheless, building a table like that can uniquely determine the most advantageous supplier list for the company as well as alternatives, and can help to evaluate options considering even minimal differences that cannot be reflected with a five-point scale, etc.

The application of the strategy is optimal in the case of recurring purchases of goods, because constant adding up the influence of random factors declines and prognosis is the most accurate.

Comprehension questions

1. What is the product range?
2. How does demand affect the formation of a trade list?
3. Specify the internal factors that affect the assortment of a trading company
4. What is the essence of the trade range?
5. How the range is associated with the efficiency of the trade company?
6. What is the essence of the goods concept in trade?
7. What are the main characteristics of the range?
8. What is the stability of the range and how it can be reached?

9. What are the targets of range formation in the trade companies?
10. What are the factors, which influence the formation of trade range?
11. What is the influence of the range on the activities of the trade company?
12. What is the difference between permanent and variable ranges?
13. Does the inventory Influence on the formation of range in the trade?
14. How can you determine an optimal wholesale lot volume?
15. What criteria for selecting a supplier you know?
16. What kinds of demand you know?
17. How a search for a supplier is made?
18. How to document wholesale contractual relations?
19. What is the dependence of the criteria of a search for a supplier and a form of goods supplying?
20. What is the dependence of the criteria of a search for a supplier and goods properties?
21. The traditional scheme of commercial work in retail networks: advantages and disadvantages
22. Method of expert evaluation and its modifications
23. Selection of a supplier and supply frequency based on a particular product.
24. What components are included in the process of managing the product range in trade?
25. What assortment management functions do You know?
26. What is the essence of the assortment control function?

Essay topics

1. The range of the trade company must be permanent. Prove the truth or falsity of the statement. Prove your answer with arguments.
2. The management of a trade organization's product range is a continuous process that must be carried out even if the trade organization is functioning effectively. Do You agree with this statement? Explain the answer given.

Digital forms of sales in trade

In modern conditions, electronic commerce takes an important part in the daily routine of people. It happens first of all because of the cost reduction of the Internet access services, including the use of mobile networks, in which the Internet access service is included in the tariff plan and doesn't need the additional user's costs.

Electronic commerce is characterized by a high level of competition. In this case, it is important to attract the buyer to the site. The main source of attracting customers to the site are search systems. It is necessary to add that the particularity of such a promotion is a large variation of costs, directly related to both the specifics of the easy-to-sell goods, and the positioning of the trade organization in the consumer market.

The advent of the digital economy will be marked by the increased role of advanced technology in all economic activities. One of the areas directly affecting the economic efficiency of trading businesses is the competent preparation of the product range policy. The traditional methods to analyze and optimize the product range often use the estimate of realized demand, which is based on the turnover. However, this approach prevents from differentiating the reasons behind the refusal of buyers to purchase certain products, when such reasons are associated either with the low demand for a product, or with the terms of sale for that product in a particular store. In this regard, the use of advanced digital technology allows (with a certain degree of probability) to differentiate situations of refusal to purchase associated with the specific product offer in a particular store from the actual absence of demand.

We have to admit current methods of product range compilations are take from traditional commerce, though e-commerce have more options to compile an assortment. Potential benefits of electronic commerce, like the ability to deliver goods suspended, compilation of complementary goods, not necessarily with immediate delivery, are used poorly. Nevertheless in case of purchase of expensive or rare goods most buyers agree to wait for some time. It provides organizations the capacity to sell by pre-order. Dividing a product range into two parts has a great potential. It includes goods sold right from the store and on pre-order base. The approach plays a special role in the case of a regional e-commerce, where low population density does not allow stores to compile a wide product range. It provides an opportunity to create a natural assortment matrix to meet demands of consumers. It is necessary to be aware that assortment policy must satisfy demands without reducing the inventory turnover. To do it the product matrix of an online store should always have key products available to satisfy general demand, including season consideration, and product offers with complementary products.

When generating purchases all purchased goods can be divided into two categories: goods that generate the most revenue from online orders, and goods that play an important role to stimulate sales just because of their availability in the store. Their share in the value structure may be insignificant, but those goods define a choice of this or that online store to purchase from. In this regard, e-commerce organizations have to maintain a product range with items not available from competitors. It defines a wideness of product range offered to end customers.

We have to admit different products can have different main and supplementary products bought together, and the percentage may vary very widely. In particular, we can choose a brand of digital cameras with a branded spare battery hard to find.

Competitiveness of an online store depends largely on the convenience of purchase for buyers. Historically, there is a number of products best suited for sale online, say, digital goods, while selling goods with physical delivery are more difficult. Online e-commerce has a drawback because of a poor opportunities to acquaint with a desired product, as only a virtual opportunity for this is available. A good example of that kind of products are clothing and shoes, when purchasing the goods like that a buyer needs at least to try them and assess their consumer value visually. However, a good performance of sale of that kind of goods will be provided with availability of quantity of product items because of the wide range available.

For organizations selected e-commerce as a commercial model the use of traditional sale technologies like pickup can increase their competitiveness. Pickup service allows to offer an additional product range available at points of pickup. This method of obtaining goods is associated with time consuming of an end buyer and it defines a desire of the whole consumer shopping cart available in a minimum number of stores. In addition, with the pickup of goods purchased allows buyers to purchase additional products available at the points of pickup.

The Internet technology allows a buyer to acquaint with an offered product range and make his/her choice not leaving his/her home. It reduces a chance to offer the buyer a replacement of this or that product as the buyer just leave the store if the desired product is not available there. In this regard, it is appropriate, first, to enhance a proposed product range, and second, to provide as full product range on the store site as possible considering that the buyer making his/her consumer choice should have an opportunity to see replacement products.

The main focus of improving the competitiveness of business activities is the promotion of the e-commerce site on the Internet. The solution of this task is largely associated with the choice of one or another set of keywords describing the product range. We have to admit that the cost of promotion of various key words can vary a lot while the most demanded products cost the most in promotion. In this regard, the product range should include products with maximum performance from the product offer point of view.

An important moment for solution if the task to increase competitiveness in e-commerce is a direct decision on inclusion some goods into the product range and exclusion of some other goods. The e-commerce technology has great potential in compilation of a product range on the basis of consumer preference analysis. To identify demands for goods not available in a store, a traditional store needs to run a marketing research, e.g. survey of customers, add special tasks to employees, while online stores need to analyze activities of their customers on their websites. The activities may be searches of various kinds buyers make, modifications of the searches, time spent for browsing product catalogs and other parameters. A fully automated trade system can use automatic algorithms for forming good purchases not only on the base of products sold, but on the base of predicted demands from these or those activities of the site users. In return it helps to response to demands fast, taking into account consumer preferences.

Today various social networks are very popular. We have to admit various social networks are used by customers of various segments. Many commercial organizations provide an active policy in social networks, as they are their key feedback channel defining the product rage of the e-commerce organization.

Now the lower is the population density, the narrower is the offered assortment of goods to the consumers, and the higher are costs for organization of physical distribution with it. It is being explained by the fact that, on one hand, cost of delivery of goods to the regions is higher and on another side probability of a purchase of goods by buyers is lower. Reduction of the level of prices on goods being sold is the important task of regional goods movement. Unfortunately, lower density of population of regions leads to the fact that value of goods is dividing into a smaller number of people, which leads to increase of value of goods and hence to reduction of a breadth of assortment.
Organization of a large quantity of regional decentralized goods connections is the more complex problem than use of hub system of goods supply. Efficiency of investment in creation of such a system is sufficiently high.

Requirements of buyers are the major factor determining a realized assortment of products. Use of e commerce mechanisms serves to the solution of this task.

Provision of availability to population of goods is the important social task of organizations of trade. But in traditional trade, as was said above, high costs for goods movement are hampering resolution of the mentioned task.

Electronic trade is a modern direction of trade development. Development of electronic trading was in the first place determined by development of information technology, but in the development such a kind of trading activity has a number of advantages. One of them is a potentially lower price level in electronic trading in comparison to traditional one. Potential of reduction of prices of electronic trading is being formed on basis of lower costs for organization of a trade-technological process, as well as is determined based on the market mechanisms by higher level of competition. The low prices, the discount systems allow to sell goods to socially-open groups of population[2].

The electronic trading technologies allow to optimize backing of a trade organization with goods resources. The mechanisms of electronic trading allow the trade organizations to form stock-in-trades on basis of a consumer choice, using information about behavior of a consumer in the internet network,

Formation of stock-in-trades on basis of a consumer choice possesses a number of advantages for a buyer, as well as for a seller — the buyer receives a possibility to acquire precisely those goods that he needs choosing from a sufficiently wide assortment of a proposal in goods, but the seller does not incur costs for procurement of the products on which there's no consumer demand. Originally the product sales were presupposed in academic works with use of a service of delivery of goods to the buyer, but the practice showed great popularity of a service of self-exportation of goods. Sale of goods with use of a service of self-exportation of goods allows to implement the process of buying of goods to a buyer maximally similar to a traditional form while trade organizations have an opportunity to form an optimal range of products.

The sale of digital products allows implementing the process of pure e-commerce as the product has no material basis and, accordingly, there is no need for delivery of this commodity. The whole process of purchase and sale may take just a few minutes. The scope of offer of digital products at the market is growing, accordingly the number of sales transactions is growing as well.

Creation of its unauthorized copies is the major problem on sale of digital goods. If a consumer is unable to copy goods having material basis or costs for such copy usually exceed value of goods, digital goods are copied without problems. Thus the unconscientious consumer strives to acquire one minimum consumer, a copy of goods more often — and, in addition, to create the necessary number of copies. A large quantity of cases of an abuse of their rights by buyers is addressed in judicial practice of a number of countries and sale of digital goods gives the additional occasion for consumer extremism if the consumer has made a copy, he does not need directly purchased goods any more.

For the purpose of protection against such risks commercial means of protection are applying — some components making creation of copies of such goods more difficult or impossible are brought into digital goods. But application of technical preservatives creates of itself problems for legal users — they need to post additional actions on entry of additional codes, storage of documentation. The cases when officially purchased disks led to bigger wear or a breakdown of equipment are known. Since the other side, application of protective means compromises a concept of digital goods itself. The buyer can acquire a music piece for the purpose of listening a certain device such as a portable player. But recording a musical composition to memory of such a device is per se a copy that it will be incredible in case of protections. For this purpose, DRM technology is applying, but the vast majority of users do not know what it is like. At the same time the delinquents who made illegal copies will not experience such problems.

Sale of digital goods is contributing to development of regions. Often tourists are buyers of digital goods. At the same time the tourist acquires digital goods directly for use on the device he has which requires certain material basis of sale of goods. The situation becomes more complicated if the tourist does not have the equipment which will allow him/ her to load information to memory of his/ her device. Music players are the example, the one using the private memory for storage. In that regard introduction in trade organizations of a service of load of information to memory of a matching device seems optimal.

In the modern world role of mobile commerce is vast. An ever larger user population constantly uses in everyday life mobile computer devices such as tablets, mobile phones, etc. And the manufacturers of these devices embed a function of a purchase of digital goods in the own Web shops in them. It leads to additional revenues of producers of mobile devices, convenience of users because purchased goods with high probability will be easily used on a mobile device, legalization of market of digital goods.

But such an approach leads to strong reduction of competition. The buyer is locked into a particular Web shop, moreover, some manufacturers put severe artificial technical restrictions on use of digital goods purchased on the side. As a result, the producers receive vast advantages — a large part of revenues remains in their Internet — stores — and the buyer remains attached to a competitive mobile device — at the replacement of a mobile device the buyer will be able to continue the use of favorite digital goods (at worst, they will have to reacquire them in the same Internet store, but often transfer is executed free). During a purchase of a device by another manufacturer digital goods can be absent in an assortment of his Web shop and the buyer will not be able to acquire goods for whatever money.

To the present time practice is very much spread when goods are sold together with some electronic device. Impossibility to buy an electronic device without digital goods conflicts with legislation and is a subject of proceedings.

The digital goods which are free according to the decision of their manufacturers, including for commercial use, are the following problem. For an ordinary consumer the fact of right of free usage is coming with advantage and lead to an economy of monetary funds, as well as to absence of complexities in copy protections, then for commercial organizations there arise complications with determination of value of such property. In essence free digital good is presented by a manufacturer to a consumer and in accordance with legislation its value must be determined at cost of goods (an analogue). But the digital goods are per se unique and the task of a definition of an analogue is solved in extremely complicated manner. Audio– books which received the wide circulation in a segment of consumers of retirement age — appear as implementation of social role on sale of such goods.

Comprehension questions

1. What are the advantages of e-commerce before, during and after a trade transaction?
2. What are the main supply models via the Internet.
3. What is the role of Internet intermediaries in wholesale electronic commerce.
4. List the functions of an electronic trading platform.
5. What kinds of electronic trading platforms are currently the most popular and why?
6. What are the main stages of commercial and technological process of an electronic trading platform.What are digital goods?
7. What is the role of material foundations of digital goods?
8. What are peculiarities of selling digital goods?
9. What factors can influence the compilation of a digital product range?

Business game "Formation of Assortment Policy in Trade"

The "Formation of Assortment Policy in Trade" is aimed at the formation of students' systematic understanding of the theory and practice of different trading technologies with the following purposes: reasonable range management; acceleration of turnover and stimulation of the speed of sale of goods in a highly competitive consumer market.

The main window of the developed software is shown in Figure 1.

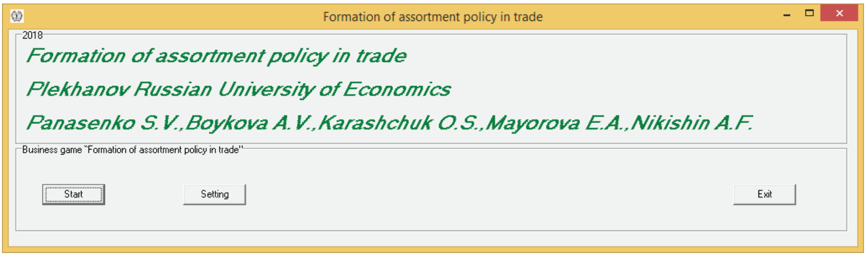

Figure 1. — Main program window

At the beginning of the business game, you must set a number of parameters directly related to the proposed product range (Figure 2):

- "Goods" – product name;
- "Minimum demand" – minimum demand;
- "Maximum demand" – maximum demand;
- "Probabilistic law" – the probability law of demand for goods formation;
- "Trends" – the main trend in the demand for goods change;

– "Purchase price" – selling price;
– "Batch procurement" – a purchased batch;
– "Surcharge" – trade markup.

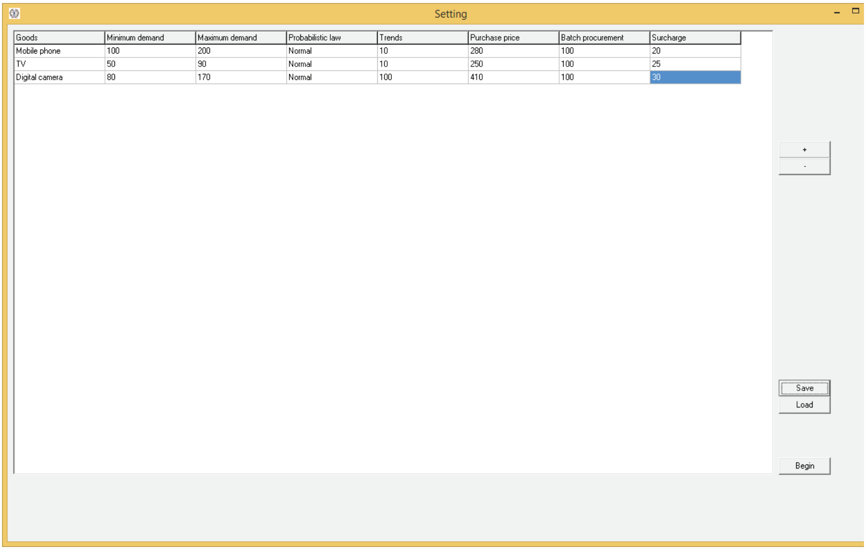

Figure 2 — Settings window

Additional parameters, including the initial monetary asset, the number of players, and other costs are entered immediately before the start of the business game. It is also indicated whether the business game is limited to the purchase of goods in the absence of funds in the current account of the player (Figure 3).

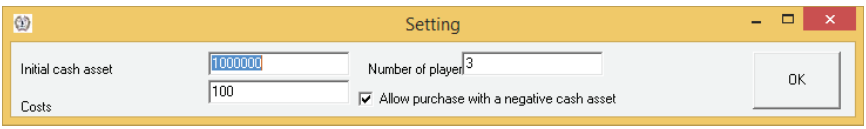

Figure 3 — The settings window for the additional parameters of the business game

The beginning of the game is characterized by zero stock of the goods, as well as the implementation rate for each product.

Accordingly, each player has the opportunity to purchase certain goods at his own discretion (Figure 4).

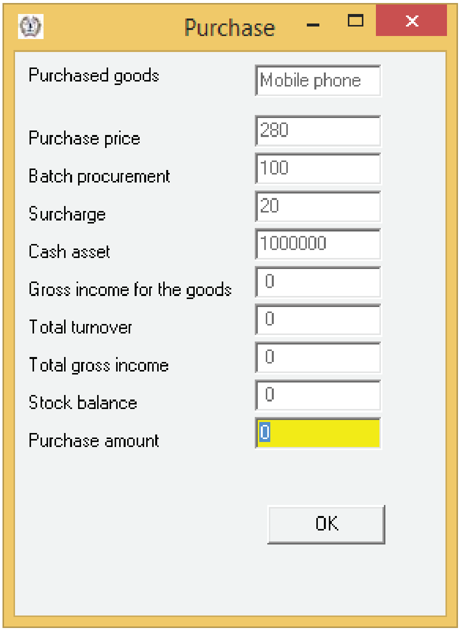

Figure 4 — Dialogue for product purchase

If during the purchase the size of the purchased batch does not meet the requirements of the supplier, the player receives a message (Figure 5).

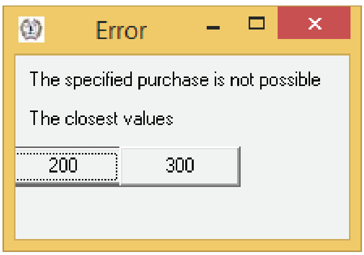

Figure 5 — Adjustment of the purchased batch

During the purchase of the selected product the player is provided full information on it: purchase price, minimum batch, used level of trade markup, stock of goods in the warehouse, turnover, and gross income for the goods from the beginning of the game, as well as a number of other parameters.

The step is completed after purchasing the goods ("next" button), after which the customer demand is emulated (in accordance with the previously chosen probability distribution law), and the game moves to the next step (Figure 6).

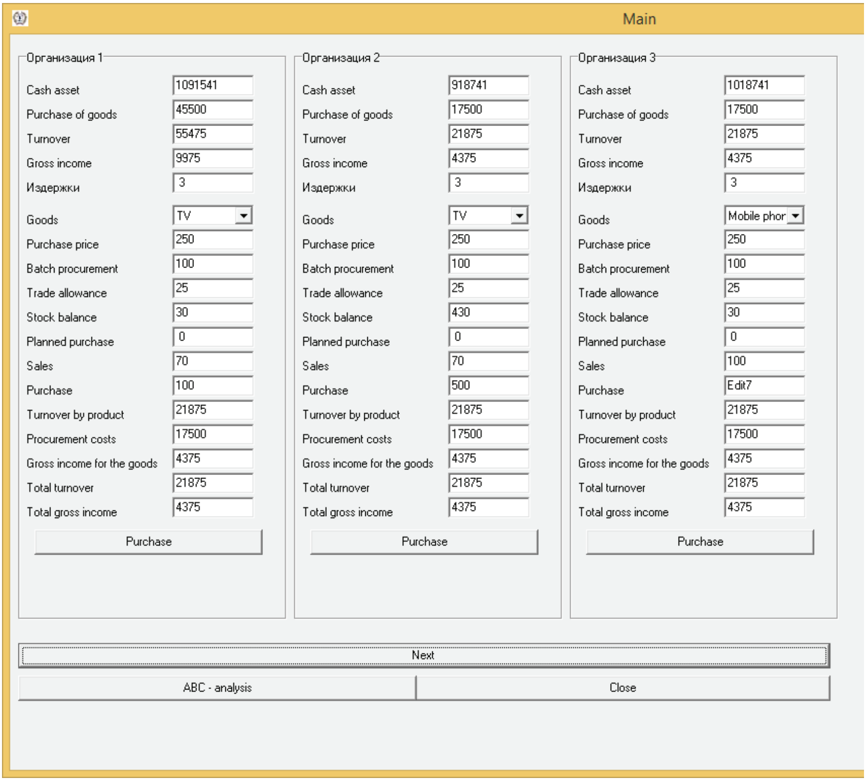

Figure 6 — Main program window

Thus, the main program window shows constantly updated information on the trade organization monetary asset, the purchase of goods, the accumulated turnover and gross income, costs. Also, similar information is displayed on the product selected by the user. The business game is aimed at formation of assortment policy that maximizes the trade organization income. Also at the end of the game the opportunity to conduct ABC-analysis of the range of goods turnover and gross income is provided for, which.

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