

Mutual Influence of Traditional Trading Chains and E-commerce: Trends and Metrics



Anna Dmytriv and Oksana Kobylyukh

Abstract The aim of this article is to study the tendencies of the transition of traditional trade networks into the e-commerce. On the basis of statistical data, the growing tendency of expanding the trading network of traditional stores through the establishment of online stores has been proved. Research results show that the Ukrainian online trading market is characterized by the development of new product categories such as food and household chemicals. The article provides a schematic list of spheres of e-commerce development influence, which undergo inevitable changes in connection with the popularization of on-line purchases. In this key becomes more actual building of smart supply chains which helps to manage product moving on its way from the production to the finish consumer. When companies are switching from traditional to e-commerce networks, the issue of benchmarking the effectiveness of off-line and online stores appears. In this context, Key Performance Indicators have been analyzed to measure the effectiveness of the online sales and marketing activities of new online sales outlets. The basic system of criteria for evaluating the effectiveness of newly created online stores is proposed.

Keywords E-commerce · Traditional trade chains · Transformation
Key performance indicators · Efficiency

A. Dmytriv (✉) · O. Kobylyukh
Department of Marketing and Logistics, Lviv Polytechnic National University,
Lviv, Ukraine
e-mail: anna.dmytriv@ukr.net

O. Kobylyukh
e-mail: Oksana.Kobylyukh@gmail.com

1 Introduction

E-commerce in the mid-1990s was not yet known like a business model, and today it poses a potential threat to traditional trading networks. As one of the authors of the Forbes magazine Steve Olenski wrote, “since Jeff Bezos sent his first online sale through Amazon in 1995, we, consumers, will never go back” [13]. Traditionally, trade has become the most important impetus for the survival of people from the beginning of the history we know, and with the massive spread of the Internet, a paradigm of change in how businesses are doing today.

In his “E-Commerce” book, Ritendra Goel notes that “traditional physical trade in goods and currency is becoming increasingly unpopular and more businesses are jumping on the e-commerce bandwagon” [7]. These trends are also relevant for the Ukrainian market—the border between traditional commerce and e-commerce is becoming more blurry as more and more companies start or continue to integrate Internet technologies into their own business processes. The development of e-commerce issues the growth of necessity to build smart supply chains, which can efficiently manage product movement from the very begging to the finish consumer [10, 12].

There is no a lot of theoretical and methodical surveys about e-commerce in Ukraine. But, the issue of promoting e-commerce in Ukraine, the opportunities and prospects for the transition of traditional trading companies to e-commerce, as well as the emergence of completely new companies that are characterized by only on-line trade, are the subject of research by some Ukrainian scientists. O. Shaleva describes the technology of e-business, its main toolkit and the sequence of actions in the process of organizing e-commerce [22]. As one of the elements of the e-economy, which emerged in the mid-1990s, M. Oklander in his writings recalls e-commerce on digital marketing [20, p. 57]. The questions of the expediency of opening an Internet storefront by a regular store are investigated by Pursky O., Grinyuk B. and Moroz I. [21], also they study the processes of functioning of the trading market on the basis of simulation of competitive interaction between the Internet store and the traditional store [14].

However, in our opinion, it’s needed to address a more detailed study to the impact of the development of e-commerce on other sectors of the economy, the potential areas of growth of goods and services for small and medium-sized businesses, the demand for which arises exclusively due to the spread of e-commerce.

2 E-commerce Trends: The Concept of Transformation of Traditional Trade into E-commerce

The widespread use of modern information technology has transformed the Internet computer network into a well-developed infrastructure, and the global Internet network today can be regarded as a huge electronic market that potentially can

reach almost all of the world's population. That is why software makers, trade and financial organizations are actively developing various types and ways of conducting business in the global network, which have different character (for example slim or agile) [8, 9]. At the moment, the development of e-commerce has become a very advantageous form of seller relationship with the buyer. The economic properties and features of e-commerce that arose in the process of its formation enabled it to compete in the world of modern global business and created the prerequisites for optimistic forecasts of its future.

Today in Ukraine a large number of traditional stores open their offices on the Internet and become simultaneous participants in traditional and e-commerce. Price differences between this type of sellers and sellers who use only e-commerce are important both from a theoretical and a practical point of view in the light of their impact on the implementation of various elements of the marketing mix. In this context, a large number of questions arise, from which studies were not conducted or were conducted just partly, such as:

- What are the implications for entrepreneurship tendencies for the transition of traditional stores into e-commerce;
- What new, innovative types of goods and services are emerging and developing as a result of increased purchasing of goods through the Internet;
- Which product groups are most popular in e-commerce and where there is potential for growth and development;
- What are the differences in the characteristics and strategies between these two types of Internet vendors, which may have differences in the price differentiation of goods;
- What are the advantages and disadvantages of a competitive trading environment with traditional and e-shops;
- Do sellers can have the advantage of setting higher prices than e-commerce stores using traditional sales channels and e-commerce.

According to Absolutnet, a leading American analytical agency in the field of e-commerce in North America, one of the global trends in Internet commerce in 2018 will be the transition of B2B business entirely to online stores [1, 11]. Changing the habits of B2B buyers is that they are already ready to use the features that are typical of B2C-online stores. It is worth noting that large volumes of sales on the industrial market enable B2B companies, having mastered e-commerce, to quickly outperform their competitors. In Ukraine, in 2017, the category of "raw materials and materials" was ranked among the fastest growing categories—according to the number of orders for online growth in the first half of 2017, it was 104% [11] (Fig. 1).

As we see from Fig. 1, the global trend of promotion of e-commerce in the B2B segment is also relevant for the Ukrainian market. It should be noted that this statistics is based on the results of one of the largest e-commerce portal Prom.ua in Ukraine, which represents 93.4 million products from 40.7 thousand verified sellers; The portal turnover is \$54.7 million a month, and the monthly customers visit

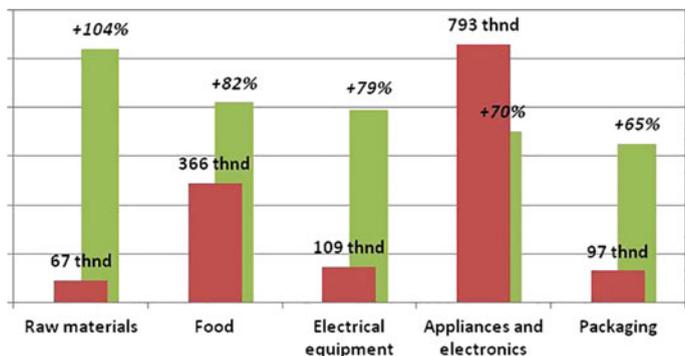


Fig. 1 TOP-5 growing categories in Ukrainian E-commerce market (compare 2017 to 2016 year). Source based on [11]

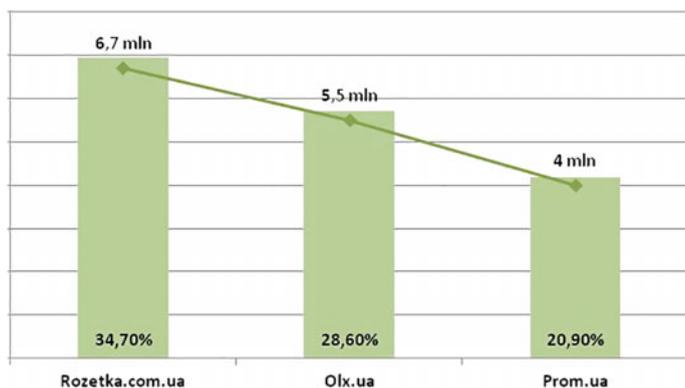


Fig. 2 TOP-3 local Ukrainian E-commerce-resources, most visited by customers in June 2017. Source based on [3, 4]

this site 62.8 million times [13]. According to the research company Gemius, this portal is used by 20.9% of Ukrainian users and it ranks third among local Internet resources (Fig. 2). Given the popularity of the portal Prom.ua, we can rely on the information presented in Fig. 1 and assume that the statistics of using the portal and consumer behavior when buying goods of different categories are typical for the whole Ukrainian market.

One of the global trends in e-commerce development in the world is also the duplication of e-commerce—most developed e-businesses with their own online stores also try to have their presence on marketplaces (or, as they are also called, trading platforms) [22, p. 12]. As we see from Figs. 1 and 2—such trading platforms are very popular in Ukraine and they are often used by traditional trading companies for their first entry into the world of e-commerce. Thus, the three largest trading platforms in Ukraine Prom.ua, Olx and Rozetka, according to Gemius

Audience in 2017, reached 53.6% of the Internet population in Ukraine. In general, the Internet audience in Ukraine grew in 2017 from 17.8 up to 19.1 million users. At the same time, the popularity of e-commerce sites increased from 12.3 to 13.6 million people, which is 71% of all Ukrainian Internet users [16]. As for the monetary characteristics of the market, in 2017 Ukrainians spent 14.2 billion UAH on the market, which is 68% more than the previous year, while the number of orders grew by 61% and the average check grew by 4% to UAH 962, which according to the average annual rate of the National Bank of Ukraine equaled 36.17 dollars USA [19].

3 Influence Areas of Transformation Traditional Trade into E-commerce

The development of e-commerce leads to changes in many related areas of the economy. There are a large number of research and articles on the advantages and disadvantages of e-commerce, among which, for example, the ability to make purchases for 24 h, the time lag between the selection and purchase, the availability of complete information on the site of the product, the ability to make a cashless payment, the individual customer care, saving time and money, increased standards of after sales services, leveling of geographic factors, and at the same time the existence of risks of financial fraud, the provision of false information, protection of individuals busy data and so on. The study of general economic phenomena that arise, intensify or level up in connection with the intensification of online trading of companies, today also requires attention from the side of scientists and researchers. The areas of influence of the transformation of traditional trade into electronic can be divided into the following five main groups: consumer behavior, logistics sector, labor market, commercial real estate and IT-sector (Fig. 3). In this study, we will focus mainly on the first two groups, the behavior of on-line buyers and the logistics sector, leaving the other groups as potential for further research.

The behavior of consumers with the onset of the e-commerce era has changed significantly. On-line purchases on the consumer packaged goods market (CPG) in the US over the past 5 years have increased by 350%, and in 2018 amounted to \$36 billion, while offline purchases increased by only 3.6% (Fig. 4).

As for Ukraine, for comparison, we can operate data for 2014 and 2017: in 2014, the volume of the e-commerce market in Ukraine was \$1.6 billion, and in 2017—\$1.9 billion, at the same time, volumes of traditional trade amounted to 36.9 and 22.1 billion USD appropriately, hence the share of online sales in the retail trade turnover of Ukraine increased by more than 4% from 4.3% in 2014 to 8.6% in 2017 (Fig. 5). For data and subsequent calculations, the indicators of the average annual exchange rate of the National Bank of Ukraine were used [19].

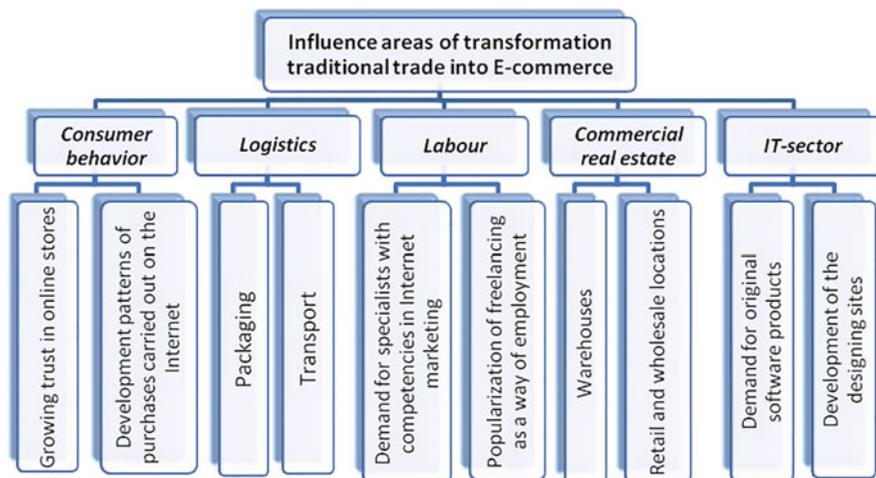


Fig. 3 Influence areas of transformation traditional trade into e-commerce. *Source* own development

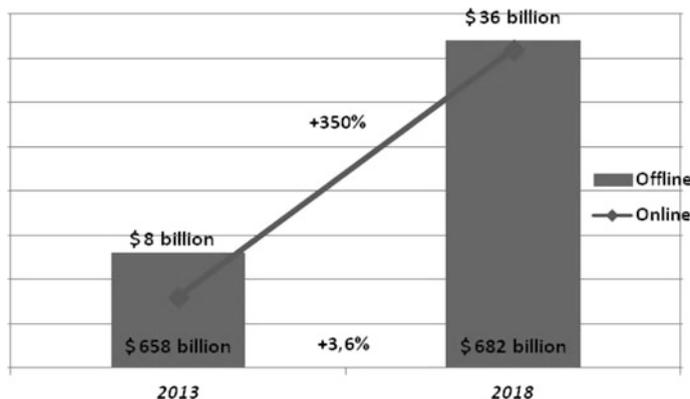


Fig. 4 Online and offline consumer packaged goods (CPG) sales in the United States in 2013 and 2018 (in billion U.S. dollars). *Source* based on [15]

Let’s consider the growth rates of offline and online trade in Ukraine. As shown in Fig. 6, the growth of e-commerce in 2017 compared with 2014 was 18.6% in USD, and 165.7% in the UAH equivalents.

At the same time, due to the devaluation of the national currency, with an increase in the total retail trade turnover in UAH equivalents by 34.1%, the dollar equivalent dropped by 40.1% (Fig. 6). Comparing these two indicators, we can conclude that the phenomenon of transformation of traditional trade into e-commerce led to positive growth of e-commerce in dollar terms, against the

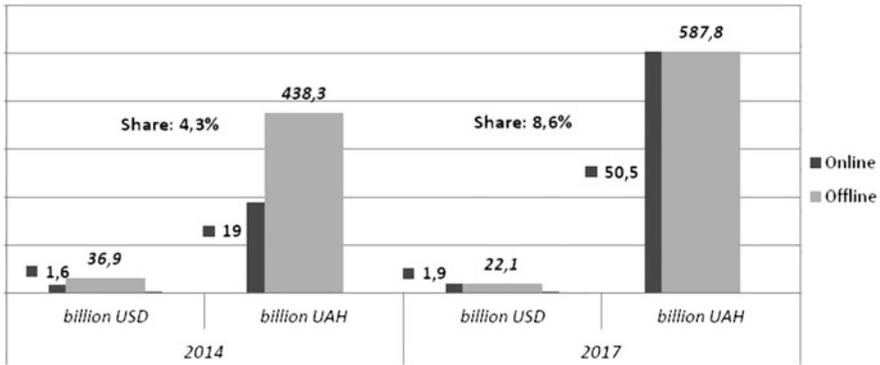


Fig. 5 Comparison of Ukrainian online and offline trade in 2014 and 2017 (share, %). *Source* own development, based on [4, 18]

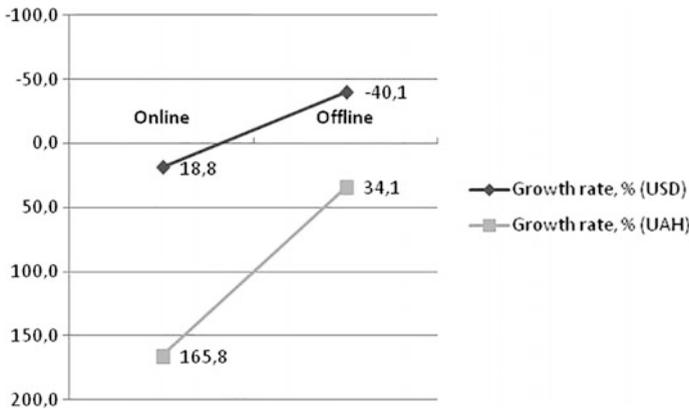


Fig. 6 Growth rates (%) of online and offline sales in Ukraine in 2017 to compare with 2014. *Source* based on [4]

background of decrease of this indicator for traditional trade. We can also make a substantiated conclusion that e-commerce in Ukraine is in a stage of stable development.

Thus, consumer confidence in e-commerce in Ukraine is increasing. Traditionally, Ukrainians buy clothes online, mobile phones, goods for beauty and health, as well as for home and garden. But, there are gradually emerging new online sales areas, including fast-growing food and beverages, tools, hobby goods, and books. This means that demand for goods in these categories will soon increase. Returning to Fig. 1, we can see that in 2017, food orders grew by 82% compared to the first half of 2016, and for the sales leader, the category “Clothing, footwear accessories”—only 32%. The demand for online food purchases has its own peculiarities, Ukrainians often order products of long-term storage or buy

certain goods in bulk. During the last half-year of 2017, the highest amounts of food products on the Internet was sold by the following products: tea, coffee and cocoa, chocolate, alcoholic beverages, wafers and cookies, spices, sweets, dietetic products, cheeses, chocolate and nut pasta.

The Internet as a point of sale today is becoming more and more extensive. Yes, companies can either create their own online stores, or use ready-made design developments, or place their offers on a variety of marketplaces under their own brand and adhere to corporate brand strategy. Marketplaces, such as Rozetka, even offer to companies collaboration based on the outsourcing system, to take full care of the organization of the sales process, and to leave for companies only logistical tasks. But in the future such electronic platforms are planning to create their own warehouses, so that in one order it was possible to deliver goods from different manufacturers/sellers. This, accordingly, will entail the development of non-commercial real estate, as indicated by us in Fig. 3. The development of postal services is, on the one hand, the reason for the development of e-commerce, and on the other hand—a consequence. For example, one of the most dynamically developing Ukrainian postal services is the delivery service “New Mail”, which can be considered as an engine of Internet commerce in Ukraine.

As mentioned above, the trade areas that are currently active in e-commerce, considering Internet resources as an additional way to distribute goods to the end-user market, include traditional trading networks for food and related products, as well as specialized networks on sale of household chemistry. One of the largest drogeries networks in Ukraine Watsons in May 2016 launched its own online store, built on the Hybris platform. Watsons came to the Ukrainian market in 2006, having acquired the well-known at that time the “DC” network, established in 1993. As for today, Drogerie-network Watsons has more than 440 stores and 25 pharmacies in more than 100 cities of Ukraine, with more than 4000 employees serving almost 3 million monthly customers. For the first month of the work, the online store of this traditional network giant sent only 47 parcels, with the number of on-line sessions reaching almost 150 thousand. This low conversion is mainly due to the fact that at the time of the launch of the store, not all the network products were there not all available products have been made enough description, the information could be incomplete, there was an incomplete functional, which today is important for potential buyers. There was also a need to optimize the Internet store for search engines. By the time of site optimization, the number of products on the site increased significantly—from 3000 SKU at the time of launch up to 12,000 SKU, and also the categorization of goods has been improved. Taking into account the fact that Watsons Company was popular in Ukraine and used the developed CRM system for many years, all clients of the company were informed about new possibilities of making purchases through the Internet store. Along with the implementation of the functionality that helps to increase conversions, expanding the capabilities of the customer’s personal office, the Watsons Company has been working on increasing the delivery capabilities, upgrading the Store Locator and product cards, enabling buyers to track the ordering path. Also, a year after the launch of the Internet store, the multimillion function was implemented. All these

concerted actions have enabled the company to transfer the power of its network to the e-commerce sector—by the end of 2017, 1.5 million traffic is processed monthly through the online store. The number of SKUs has increased to 20,000, while the online store has products that are not available in offline stores. It is also important to note, when comparing traditional trade and e-commerce for this category of products, that the average check online purchase on the Watsons network is several times larger than the average check in traditional stores. The factors influencing this indicator are, firstly, the option of free courier delivery when purchasing a product for a sum of 400 UAH (\$15.04), as well as the tendency to purchase in the Internet-store products in large packages that are inconvenient to carry home by them. So, creating additional convenience for customers in the form of time and efforts saving, the company provides itself with a stable retail trade through e-commerce. According to the results of one and a half years of activity, the online section of drogerie network Watsons has taken a leading position among all the traditional stores of the network.

In the food sector, which is characterized by an increase of 82% in 2017 (Fig. 1), the transformation of traditional trade in e-commerce is also quite active. Networks of food stores duplicate their presence in the field of e-commerce in order to increase the volume of sales of their products by creating additional conveniences for an active group of online buyers, which is constantly growing.

Despite the growth of the e-commerce sector, we note that today's online shoppers are becoming increasingly demanding on the quality of content offered by sellers in on-line stores. In this regard, there is a new global trend called Rich Content, which involves optimizing content and modifying the functionality of the site in order to provide the customer with valuable information and facilitate the purchase process at all stages of interaction with the site. This will allow an online retailer to increase sales, increase conversions and win customer loyalty. All online buyers can be divided into the following three types:

- Browsers (visited the site randomly, out of curiosity);
- Seekers (are ready to buy, are interested in a certain category of goods, but did not select specific attributes or model);
- Searchers (know exactly what they need on the site, they are interested in minimizing the time to search, are characterized by a conversion above the average site).

According to research by PsfWeb, these three types of online buyers are in the following ratio: 75, 15–20, and 5–10% appropriately. The main characteristics of the behavior of on-line buyers are the following:

- desire to place an order anywhere (shop, internet, phone);
- to pay for goods in any way (cash, card, virtual money, bonuses, etc.);
- to get the goods anywhere (store, mail, courier delivery, warehouse, etc.);
- to receive after-sales service or return the goods where it is convenient;
- to get recommendations based on the history of brand interaction.

All these peculiarities of the behavior of online buyers should be considered by traditional business representatives, subject to the decision to enter the e-commerce market. Despite the above statistics, which show an increase in Ukrainians' trust in online purchases, one should not forget that the Ukrainian consumer has a stable habit of buying in offline stores, having the opportunity to check on the spot the integrity and quality of goods.

4 Evaluating the Efficiency of the Transformation of Retail Chains to E-commerce

All owners of online stores are committed to ensuring that their resources work efficiently. But how can you measure the effectiveness of the online store? What indicators of his work need to pay attention to assess how commercially profitable to maintain and develop an online store?

In order to succeed in the field of e-commerce, first of all, it is necessary to be guided by such inviolable trade rules as measuring the performance of the project. Marketing indicators are quite specific measurements, so they are reckoned in the KPI system, which allows you to manage the efforts of marketers [5].

KPI (Key Performance Indicators) is the number or point of data used to measure the effectiveness of achieving any goal. For example, for some online retailers, this may increase traffic by 50% next year. For this purpose, performance may be the number of daily visits or traffic sources (contextual advertising, search engine optimization (SEO) or display advertising, videos from YouTube).

Even at the stage of creating an online store you need to think about how it will be evaluated by its work, so that if necessary, be able to make any adjustments. The list of criteria for evaluation in each case may be individual, but in general it will always include 3 groups of performance indicators—KPI Sales, KPI Marketing, and KPI Service (Customer Service). Indicators of the effectiveness of investment are allocated separately.

The definition of KPI begins with a clear set of goals and an understanding of which business areas affect them. For some purposes, there may be many performance indicators—sometimes even too many—so often their number is narrowed to two or three significant data points. KPI Indicators are the values that most accurately and clearly indicate whether a business moves towards a given goal. Needless to say, performance indicators can and must be different for each goal and task of the online store, whether it is increasing sales, improving marketing or improving customer service.

Here are some examples of goals and related KPIs:

- *Goal 1*—Increase Sales by 10% in the next quarter. KPIs include the amount of daily sales, conversion rates, site traffic.

- *Goal 2*—increase conversions by 2% next year. KPIs include conversion rate, bounce rate at the stage of transition to the trash, associated delivery costs trends, and competitor price trends.
- *Goal 3*—Increase site traffic by 20% next year. KPIs include traffic, traffic sources, ad clicks, social links, bounce rates.
- *Goal 4*—reduce the number of calls to customers by half in 6 months. KPIs include classification of service calls, identification of pages of a site visited directly before a call, events that led to a call.

It is easy to see that there are many performance indicators, and their significance is directly related to measuring the progress of the goal. In the fourth example, monitoring what pages a potential customer visits before calling for support makes sense as it helps identify bottlenecks that, after eliminating, reduce the number of customer calls, but for example 3, this KPI is virtually inappropriate.

As to the benefits of using KPIs and their requirements, it's important to not only formulate and use KPI in their work, but to do it right. Otherwise, the problems will be more than benefits, so the customer's expectations will not be achieved, and the specialist may not receive payment, as the criteria for evaluating his work do not correspond to reality.

Thus, you can formulate the following requirements that KPIs have to meet:

- *Transparency*—everything must be clear to both the performers and the customer;
- *Absence of contradictions*—a situation where one indicator is contrary to another, is inadmissible;
- *Easy tracking*—to fix the score by criteria, you do not need to be an “gurus” of Excel, or spend extra time on the calculations;
- *Accounting for the interest of both parties*—the positive dynamics of this indicator should be favorable both to the customer and to the agency;
- *Measurement of effectiveness*—the criteria should give an idea of how the work progresses, which of the channels used is the most advantageous and whether the chosen direction is the right one.

And another important point. There should not be a lot of KPI in SEO, otherwise it just gets confusing. Let there be only 3–5 really important indicators than two dozen not particularly needed.

The idea that KPIs should be based on measurable goals allows you to highlight a set of general performance indicators for the e-commerce industry. Table 1 shows key performance indicators in e-commerce, although, of course, they are not limited to the only ones.

In the following chapters, let's consider the more basic ones.

Table 1 Key performance indicators in e-commerce

Key performance indicators for sales	Key performance indicators for marketing	Key performance indicators for customer service
<ul style="list-style-type: none"> • Sales volumes (time, day, monthly, quarterly and annual) • Average order size/Average check (sometimes referred to as average market basket) • Average revenue per visit • Conversion rate • The share of abandoned baskets • Comparison of orders from new customers with sales to existing customers • The cost of goods sold • The ratio of the total available market value to the retailer's segment • Affinity of products (which products are ordered together) • Value of products (which products are viewed consistently) • Inventory levels (inventory levels) • Competitor prices 	<ul style="list-style-type: none"> • Output of the web resource in the TOP • Traffic to the site • Conversion • The share of repeat visitors • Refusal to purchase • Thrown baskets • Time spent on the site • Number of page views • Source of traffic • Time analysis (when visitors come during the day) • The number of subscribers to the mailing list • Text message subscribers • Number of initiated chat sessions • Number of subscribers in social networks • Volume of paid traffic • Traffic to a corporate blog • The number and quality of reviews for goods • Branded or display advertising CTR • Indicators of effectiveness of affiliate programs 	<ul style="list-style-type: none"> • Indicator of the cost of customer involvement • Customer return rate • Processing speed of the order • Feedback • Growth of ice base • The number of emails from customers • Number of customer calls • Number of chat conversations with clients • Average time to solve the problem • Classification of issues

Source own development based on [2]

5 Key Performance Indicators for E-commerce Sales

The group of KPI for e-commerce sales includes such basic indicators:

1. *The average purchase receipt* is one of the key indicators in any business. The indicator is calculated as the ratio of the orders number to the amount of revenue of the Internet store for a certain period—month, quarter, year, etc. With these data you can assess the effectiveness of the sales department, the relevance of the system of discounts and in general, the work of the Internet store.

The higher the average purchase check compared to the funds invested in each buyer, the better for the online store, because it means increased profits. If the amount of the average check is almost equal to the cost of attracting the buyer or even below it, then urgent measures to correct the situation—either reduce the cost of attracting buyers, or direct efforts to increase the average check, for example, through cross-selling or up-selling.

It is important not the size but the depth of the average check, because the more items you can sell to the customer, the higher the cost of the check. If it is oriented to the category of light goods, then you can additionally sell it any component from the same category. If the customer buys a fairly expensive luxury product, then you can, accordingly, sell an additional service for its service. That is, the presence of two or more products in check is one of the good indicators of efficiency in e-commerce.

You can increase the average check of an online store by the following methods:

- use the techniques of cross-selling and resale (withdrawal of product recommendations);
 - setting the threshold of the cost of the order, after which the delivery will be free of charge;
 - introduction of loyalty programs for regular buyers and attractive commercial offers—related products, discounts and incentive bonuses, etc. For example, offer in an online store to buy an additional product at a discount or a general discount for the amount of the order.
2. *Sales*—a criterion for the development of an online store: the more sales are made over a period of time, the greater the sales turnover of the store and the higher the profit in the end. The sales volume is a figure that is assigned to the plan by managers for a certain period of time. Plans can be placed on a month, quarter or year. From the point of view of KPI's online store in the e-commerce segment, the sales plan must be presented in the context of a month, a week, and a day. That is, each manager must daily analyze these targets and compare them with real data. Moreover, in terms of the current traffic that is projected, each manager must know the conversion plan.

Net profit—an indicator for which, in fact, an online store was created. Profit data needs to be analyzed to determine whether the net profit of the owner is satisfied. If the size of this indicator is unsatisfactory, it signals that in the work of the Internet store it is necessary to change something—to reduce costs, to increase the trade margin, to control the relevance of prices, to increase the number of buyers, etc.

3. *Conversion* is one of the most important indicators of this group, if not the most important one. It's important to evaluate not the number of clicks, but the number of targeted actions, that is, sales. The conversion is the number of calls and the number of orders executed, the result of which is the sold product. Conversion—the ratio of the number of buyers to the total number of visitors to the online store—clearly shows how effective the marketing is, whether it leads to the online store of targeted visitors or generates traffic in vain.

If store visitors are targeted, but the conversion is still low, it may be a problem with usability that does not satisfy customers in terms of ordering, shipping and payment, and so on. It should start with the optimization of the most important pages of the site: a commodity card; registration; a basket; ordering you should test the buttons “add to the basket”, the registration form on the site, the formats of the description of the goods, options for ordering (from registrations or without it, in 1 click or in several steps). For example, you can experiment with the location of information blocks, changing call-to-action, adding or adjusting existing items. Even the literate processing of text content can significantly affect the conversion rate.

Conversion tracking is one of the most important indicators for online stores. And, in addition to actual sales, you can track the types of interactions like adding and removing a product from the trash, adding products to Favorites, registering users, and more.

According to Nielsen Norman Group, the average return on e-commerce conversion in 2014 was only 3%. Acceptable conversion rate ranges from 1 to 10%. If it is a lower unit—you should look for a reason. In order to increase the percentage of conversion efficiency, you need to analyze the usability of the site, the relevance of prices, the response to the processing of the order.

Improved conversions allow you to make far more profit from a commercial site, with consistent traffic levels. This is especially important, especially if you use pay-per-view advertising channels.

6 Key Performance Indicators for E-commerce Marketing

With the KPI marketing team, you can determine how well you invest in marketing, and make timely adjustments to your advertising campaigns. This group may include the following indicators.

1. *Thrown basket*—the number of so-called dropped baskets clearly demonstrates whether there are problems with the ordering of goods from visitors to the Internet store. If such an indicator is higher than the average for the niche of the online store or there is a tendency to increase it, then it is important to conduct an additional analysis of the Internet store for problems with usability or other barriers to purchase, as well as engage in remarketing.

As practice shows, the rate of refusal to buy at the stage of the formation of the basket, may be up to 70%, depending on the specifics of the business. According to studies by the Baymard Institute, the average is 67.75%. Why is this happening?

There can be a lot of reasons:

- the cost of goods in the order does not correspond to the value indicated in the product card. Or, for example, in the basket there is an additional line of delivery cost, which increases the value of the goods and pushes the customer;
- the promotional code for the discount does not work;

- the visitor does not see whether delivery of the goods to his country or region;
- additional costs, such as taxes, appear on the order form;
- insufficient number of payment options for the order;
- technical problems with payment filling.

It is very important to evaluate the rate of abandoned baskets. It is necessary to test new ideas for optimizing the process of placing an order and working with thrown baskets: send letters with a message that the order is not completed and the goods are waiting for the buyer in the basket, to try to get feedback, why the purchase was not made.

2. *The output of a web resource in the TOP* is an important indicator of a properly selected marketing strategy. How difficult it will be to achieve this depends on the qualifications of the selected specialists, the specifics of the business and the employment of niches.

Organic search is one of the main channels for attracting potential buyers to the online store. And in order to promote an online store in one or another search engine, there is usually a set of measures to achieve the highest positions in the search results for certain keywords. Measuring the achieved position with these words is necessary for a proper assessment of the efforts made, making adjustments to the plan of progress.

As many people already know, website promotion requires time. Especially when it is about a young project and a highly competitive niche. Tracking the visibility of the site through the semantic kernel allows you to solve several problems at once.

The first is to evaluate the dynamics of promotion in the early stages of promotion. Traffic from organic search is quite inert and it can take a lot of time before its stable receipt. But Google Search Console's search visibility allows you to track much earlier. If there is a stable growth, then everything is going well.

The second important point is the assessment of the growth prospects. The wider the semantic core of queries that the site displays in the issuance, the more traffic you can get if you tighten them as close as possible to the top 10.

This indicator is also relevant when analyzing individual pages with a good attendance, so that you can understand which occurrences of queries can be further included in the text, and also by which it can be tightened to get even more conversions.

3. *Number of traffic.* To assess the expediency of investing in the promotion of the Internet store and its products in these or other Internet marketing channels, it is necessary to necessarily analyze the amount of traffic generated by each of the channels. You can do this with popular web analytics services such as Yandex. Metrics and Google Analytics, and it's useful to use UTM tags to get the most accurate results for each of your running campaigns.

You will not get anywhere on just one search. Yes, you can achieve excellent sales on sales of "pure organic", through active work on SEO-optimization site.

However, you need to understand that potential customers can be anywhere, and they themselves will not definitely come—you need to go towards them.

Therefore, a specialist who is promoting the site, must track the traffic on each of the channels, measuring and comparing their effectiveness. In itself, this KPI is not, but the increase in traffic for each of the sources, as a result, will definitely have a positive effect on the business of the client. In addition, it will help track any abnormalities quickly and quickly identify which of the channels it relates to, and draw up an action plan to return everything to their places.

Using such a tool for analyzing both Google Analytics and Yandex Metrics, you can find out which promotion channels work best, which resources bring more visitors to the site, how social networks work, and which channels you underestimated before.

What indicators should be monitored:

- How many new visitors have been received for a specific source
- What are the characteristics of behavior they differ (views, percentage of failures, etc.)
- What is the conversion rate for each of the sources
- What is the level of income for each of the channels

It is necessary to track not only the sources of attracting visitors, but their returns. It may well be that the same email-distribution gives you the best conversion and sales figures, and the online store does not pay much attention to this direction.

If one of the channels shows a good engagement of visitors to the site and sales growth—you need to increase the budget for this channel. And if the channel is not effective, it's necessary to minimize costs or optimize the work, for example, removing ineffective keywords from the advertising campaign in Yandex. Direct or to view the seo-kernel on which the site moves.

4. *The average time spent on the site and the average number of pages viewed.*

Many online store owners and marketers ignore the estimates of these two criteria, considering they are not indicative. But they allow you to make some useful conclusions about the work of the Internet store. If these indicators are low, then you should evaluate the quality of site traffic. How fast does your site load? What pages are most viewed on the site, and which ones are less? Users are impatient and expect the site to work fast.

It's important to understand that for landing pages or online retailers with a small range these figures can be relatively small, while in large stores, the average number of pages viewed may be more than 20. Also, if the average store of goods in the online store is small in the order, for example, 1–2, then the average time spent by the visitor on the site will be small, because the choice of the product does not need to spend a lot of time.

By analyzing the attendance of grocery pages, you can understand the product benefits of visitors and how they interact with the site. Perhaps the online store has

excellent products, but potential buyers cannot find them through poor site navigation. For example, the online store offers good discount products, but they are only available in the general section of the site. It is necessary to create a separate catalog “Sale”, “Discounted Goods”, “Best Offers”, thus attracting attention to the necessary goods.

5. *Refusal to purchase.* In order to understand how effective the pages of the site are we need similar metrics. A refusal is considered to be a variant when the user leaves the site immediately upon leaving the site. With the help of analytics services, you can see the percentage of failure and understand the reasons that caused it. To calculate the failure rate, you need to divide the number of visitors who quickly left the resource by the total number of users who logged in. After analyzing the reasons—design, usability, quality of content, you can reduce the failure rate and increase the flow of targeted traffic.

7 Key Performance Indicators for Customer Service in E-commerce

E-commerce Key Performance Indicators for customer service include:

1. *Indicator of the cost of customer acquisition*—this is the amount that needs to be spent on the client, so that he eventually made a targeted action. This indicator shows the return on investment. Since it is possible to carry out various measures and to invest money in advertising, but if, in addition to clicks, nothing is received, the question of investment payback appears quite acute.
2. *The cost of attracting the target visitor* gives an opportunity to understand how profitable it is to invest in one or another way of attracting customers to the online store. The optimal value of this indicator is strictly individual for each store and even for each specific product group in this store, but in general, the average cost of attracting the buyer should be below the average check, otherwise the continuation of the online store may be simply unprofitable.
3. *The visitor/client's value* is desirable to calculate for each of the traffic channels used, since it allows you to understand whether the investment is paying off and whether it is worth continuing to work in this direction. Moreover, it is necessary to take into account not only advertising costs, but also the cost of the work of a specialist (if he is in the state), as well as the total labor costs.

Often it turns out that the budget for SEO seems to be a great customer, but after calculating this indicator it turns out that this marketing channel is the most profitable. The e-commerce module in Google Analytics is an essential tool for the online store in the context of this goal. The resulting information allows you to reformat the budget, redistributing it to more profitable channels. Also, if necessary, justify the need to allocate additional financing from the customer.

4. *Customer Return/Rebate Indicator*. Many entrepreneurs know that basic sales are not sudden purchases, but customers who are returning for re-purchase. Therefore, the first purchase in this online store should be the best in the life of the buyer—the service; the loyalty system should call back again. If a customer returns for a purchase over and over again, this is an indication that the online store provides quality service.

In addition, it's always easier to retrieve visitors than to attract new ones. To do this, you need to use the tools of collecting email addresses of users, remarketing technology and call-to-action to join company groups on social networks.

Normally, the longer the online store works, the more it has to have returned customers, except when the goods sold by the store are not re-purchased. If the store has been operating on the market for a long time and the audience of its regular customers is still small or absent, this may mean that customers do not find the necessary goods in the Internet store, they do not satisfy the purchased goods or the terms of order and service. Also, a small rate of returning visitors may be in stores that sell only one product for a long time and no options for resale. For example, construction companies: after the purchase of an apartment from a developer, the visitor disappears from the need to visit the developer's site.

5. *Processing speed of the order*. It is important for each order in an online store to track the speed of its processing, since this largely depends on the degree of customer satisfaction with the execution of his order. The optimal order processing time is very individual and depends on both the features of ordered goods and the terms of purchase. Estimate processing speed can be by difference in time of receipt of the order and its coordination with the buyer or, for example, the difference between the time of receipt of the order and its sending.

The faster the application is processed by the client, the higher his response. The reaction to the application is quick—the client is satisfied, he points out the company as a reliable supplier of goods and services. Therefore, it is necessary to use in their work such fast response services as Call-Back.

6. *Feedback*. It is very important to establish feedback with the client in order to understand—how the online store is positioning itself on the market that meets customer expectations or not.
7. *Average time to solve the problem*. If the customer is dissatisfied with the product or services, it is necessary to solve the problem quickly and first of all. So the Internet store will show customers who recognize their mistakes and provide quality service, which in turn protects him from negative reviews on the network, causing confidence in his brand.
8. *Growth of the base of "ice"*. If the landing pages (product pages) of the online store are understandable to the users and informative, then it is advisable to methodically inform customers about current promotions and offers by email, leaving the base of the target contacts, this will necessarily trigger the growth of the ice.

Most indicators can be divided into more detailed indicators. Thus, if an online store takes some action to influence Index A, then the situation may arise when A remains unchanged, A1 increases due to impact, and A2 falls due to unclear reasons. The management of the online store concludes that the efforts are not profitable and, as a result of the experiment, the overall indicator A goes down [17]. You always have to clearly imagine what actions are affecting. This is not always the case.

For each business, the indicators will be their own. It is known that new online stores are practically 100% traded without their membership, which means they cannot have criteria related to the warehouse, but on the contrary, they will prevail KPI in assessing the work of suppliers. And in an online store that sells 95% of the warehouse and 5% on-order, the vendor metrics will be completely different. Similarly, different criteria will be used for different product groups. For example, for clothes or shoes, one of the reasons for the failure is “did not fit the size”, although for laptops it is excluded.

Taking into account the above, it is expedient to form a basic system of criteria for evaluating the effectiveness of newly created online stores (Table 2).

Table 2 Recommended base system of criteria for evaluating the effectiveness of newly created online stores

Sphere	Indicator	Index content
The site	Traffic (traffic)	Unique visitors during the reporting period
		Total number of site visitors
		Used to calculate the total conversion rate
	Structure of traffic	% specifies how much traffic comes from different channels—search engine, advertising, mailing and direct traffic (traffic sources grow and detail with increasing attendance)
		Is used as the beginning of a detailed analysis of traffic sources
	Number of site orders (cart)	The number of customers who ordered the order through the basket
		Is used when calculating the conversion of the order form, the number of orders through other sources (telephone, ICQ, chat)
	Refusals to the trash (order form)	% of customers who added the item to the basket and then did not make a purchase
		% of customers who started ordering and did not complete
		Both indicators point to disadvantages in the process of purchase: not all information provided, inconvenient form, etc.

(continued)

Table 2 (continued)

Sphere	Indicator	Index content
Sales	The volume of orders	All incoming orders are trash, phone, ICQ, etc.
	Fulfillment of orders	Only shipped orders
	Share of completed orders	% of orders executed in their total number Allows you to notice the problem immediately, without using other indicators
	Reasons for unsatisfied orders	The causes may be different: the customer’s failure, customer’s failure, lack of communication with the client, did not fit the size (clothing/footwear), does not suit the time/rows/methods of delivery
		The reasons for the non-executed orders allow you to immediately determine the direction of further improvements in the work
		The division of responsibility for “causes” between employees gives a positive result
	Number of orders by phone	As a rule, in online stores two sources of ordering—a site and phone
	The share of orders by phone/site	% of orders by phone (site) Allows you to determine the total number of orders
Return of goods	It is used for planning and calculations, in particular for the warehouse. It should be remembered that this is a frozen working capital	
Structure of delivery (in the city by courier/car, in regions, self-service)	Different delivery methods and self-checkout need to be defined to understand the structure and logistics	
Call center	Frequency of failures upon receipt (on delivery/self-service)	It is calculated for each type of delivery, taking into account self-delivery
		It is important to take into account the specific reasons for the refusal, for further steps in checking the equipment or changing the delivery partner
	Number of incoming calls	The number of incoming calls to the call center during the reporting period
	Average number of processed calls per manager	The average value of processed calls per manager
	Missed calls share	The growth of incoming and outgoing calls indicates the need to expand the call center or improve the quality of managers

(continued)

Table 2 (continued)

Sphere	Indicator	Index content
Economy	Average service time (sales department)	Average time before the manager is raised (waiting time)
		Average talk time
		Average manager conversion (number of orders to the number of calls)
	Order amount/amount of orders executed (turnover)	The sum of all orders/orders executed (turnover)
		It is appropriate to calculate the reasons for non-fulfillment in the context
	Average check	the amount of orders executed is divided by the number of orders
		It is appropriate to count on the various promotional channels or categories of goods—the average price in the category
Gross profit	The difference between the net income from sales and the cost of the goods from the supplier	
Average gross profit by order	Gross profit divided by the number of orders executed	
	Allows you to understand how best to sell products with a lower margin	
Share of gross profit (% of the amount of orders) of advertising costs	Should be less than 100% at normal work and may be more than 100% when the customer base is consciously formed, with the prospect of higher revenues due to repeated purchases	
	It is expedient to count on different channels and different categories of goods	
Advertising	Cost of visitor (buyer)	Funds spent on attracting visitors (buyers) are divided by the number of visitors (buyers)
		Possible calculation with the inclusion in the cost of advertisement advertising salaries and SMM-manager
		It is expedient to count on different channels and different categories of goods
		Makes it possible to determine measures to stimulate sales
	The cost of attracting a new buyer/the cost of re-ordering	Usually attracting a new buyer is more expensive than re-buying
Makes it possible to decide on the increase/decrease of the cost of attracting a new buyer, to expand the client base and future revenue from re-purchases		

(continued)

Table 2 (continued)

Sphere	Indicator	Index content
Personnel	The share of orders for each manager	The ratio of the number of orders to a specific manager to the total
		Allows you to evenly distribute the load and signals the need for state expansion or process optimization
		Allows effectively using the system of motivation of the personnel
	The share of wages of staff in gross profit	The salary fund, including taxes, is divided into gross profit
		In effective work there should be less than one (100%)
		The value of the indicator should fall, while hiring new employees to give a slight boost

Source own development based on [2]

At different stages of “maturation” of the online store will require different indicators. In the beginning, general metrics such as a conversion across the site will be analyzed, and you will continue to delve into the traffic source conversion, the cost of attracting a new customer, and the cost of re-purchasing existing customers.

There are still a lot of key performance indicators for the online store. But to track immediately all such indicators are inappropriate and, moreover, ineffective. Therefore, it is recommended to focus on the 5–10 most important indicators for a given task. For example, if there is a problem of increasing the conversion, then the most significant KPI in this case will be the conversion rate and the amount of thrown baskets. But if, say, the goal is to increase traffic, then you need to track the amount of traffic, the performance of different advertising channels, the rate of failure.

After setting goals and defining KPIs, monitoring these indicators should become a daily routine. And most importantly: business decisions should be made on the basis of efficiency, and KPI should be guided by one or another action.

Methods of working with performance indicators are:

1. *Regular monitoring (problem prevention)*. When things are going well, orders are pretty good and profits are increasing, as a rule, statistics are thought to last. KPI monitoring helps to spot weaknesses and take action in a timely manner. Configure the analyst in a hurry when troubles have occurred, late. For example, the number of orders increases, the number of returns, too. It’s kind of logical. But statistics show that the percentage of returns itself has become higher. It is necessary to understand the reasons. What goods are more often returned? Why? Which courier service has more returns? You may need to change the transport company, refine the product or improve the client service.

2. *Solution to the problem.* Any problem in the online store depends on several factors. Analyze everyone, find a weak spot and fix it. For example, the effect of advertising has fallen. The online store is investing more money, and buyers are no longer getting it. Here you need to analyze KPIs for advertising channels: advertising costs, order count, conversion, average bill. Identify the most damaging channel, or refuse it, or find a solution to how to make it more effective—it's better to focus on advertising messages, change the point of entry or redraw an advertising message. And what about external factors? All KPI depend on many external factors that you cannot influence—seasonality, weather, availability of competitors, time of month, weekends and holidays, unstable political situation, etc. There may be no effect on advertising, as a competitor appeared and took away all the customers. Here it is even more necessary to analyze performance indicators. Identify your strengths and improve them. Influence on external factors is not possible, but to improve the work of the company to you strength. And KPI will help.
3. *Achievement of the goal.* For the purpose, the appropriate KPIs are determined and you need to work on improving each one. For example, the goal is to increase the conversion in the next quarter. You need to analyze the conversion rates for each sales channel and the number of unfinished orders. Incomplete orders are a huge field for improvements. In the analytics system, you can configure the constituent purpose (in Yandex.Metrics) or the sequence of goals (in Google Analytics) for the trash to see at which stage people go. A peculiar crater of sales—it will also allow you to find out which visitors from each of the sales channels are more likely to throw the basket, which goods are most often forgotten. If customers go through the process of entering personal data, you need to improve the relevant page. Maybe it is unclear to them in what form to enter data, or captcha is complicated. If you go from the payment page, it may be worth adding payment methods.

8 Conclusions

The rapid growth of the e-commerce market and the massive transition of traditional commerce to the Internet lead the growth of various tangent spheres of the economy, including logistics. Logistics services with the development of on-line trade have got a significant impetus for development, in particular the Smart Supply Chains have arose, and they ensure the optimization of the processes of moving goods from the starting points of production to the end user through a combination of optimal delivery methods. Further research requires structural changes in the logistics market and Smart Supply Chains that arise under the influence of the transition of traditional business into e-commerce.

The KPI list for e-commerce, which is presented above, is far from exhaustive. However, these indicators, in 90% of cases, will be quite sufficient for the effective

development of the online-store; an understanding of what stage is now a business, which marketing channel gives better returns and where to go further.

Performance Indicators (KPIs) can be called a kind of cornerstone on the path to success in online trading. Monitoring Key Performance Indicators will help e-commerce-entrepreneurs to track their progress towards goals in sales, marketing, and customer service.

For a KPI specialist in reports, you can bring the interaction with the client to a new level, and remove a lot of possible questions about the effectiveness of its work. The owner of the online store, in turn, gets a visual picture of how successful the promotion of his project, and how the change in these or other indicators affect the business.

The retail system in the coming years will continue to be formed in the plane of omnichannelity. Omnichannelity—is the reality of retail. Consumers are looking for a product on the shelf to buy it online, and study the product online before going to the store.

While maintaining the importance of offline stores, traditional formats will not be able to avoid digital-transformation. The following recommendations will allow better adapting to changing requests from unique customers:

1. It is necessary to rethink the process of sale and purchase. The online marketplace changes consumer habits in the field of shopping. More and more formats are coming to the fore in online and offline trade. In France, the number of points Click and Collect exceeds the number of hypermarkets. In the United States, more and more buyers leave home delivery orders, and 18% of online shopping for everyday consumer goods is a subject to subscription.
2. Recognize the importance of mobile devices in building relationships with buyers. According to the GSMA (Association of Mobile Operators), by 2020, the number of mobile service providers in the world will grow to 5.8 billion, with the largest part of the emerging markets. The ways of communicating with customers should vary according to their habits: modern consumers are inseparable from their mobile devices—and retailers, and manufacturers do not have to divide them.
3. Offer digital-options in the store. Innovative in-store solutions can both streamline the shopping experience and enrich it with new experiences. Consumers do not want to spend time in queues and prefer to receive information about products and attractive offers promptly. It is in the interests of retailers to respond in a timely manner to the requests of their buyers.
4. Efficient investment in infrastructure. CRM systems, quick cashier shops, a variety of payment options, and support for continuous communications with mobile devices—this is the future that is available now. By prioritizing, one should keep in mind the peculiarities and expectations of individual purchasing groups.

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