

Evolution of technologies in marketing: leading trends

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Abstract In modern conditions of digitalization of the economy in marketing research appears a sustainable interest in learning technology to promote brand, products and services using company-producers and advertisers. Given the rapid pace of changes that have affected almost all spheres of life of consumers, there is a need to analyse the development of marketing technologies.

This paper proposes the main evolutionary stages due to the changes and associated with scientific and technological achievements in public life and that defined the main trends. The paper presents some novel and astonishing results of research work carried out by a team of scientists within the thematic research topic entitled "Evaluation of the effect of neuro-linguistic manipulations on consumer behaviour in the digital transformation of society".

1 Introduction

In recent decades, the practice of marketing is changing quite quickly - in this regard, there is a need for innovative, non-standard thinking. The rapid growth of Big Data, the sharing economy, privacy concerns, and social media require marketing to acquire more knowledge more quickly. To solve these problems, it is necessary to analyse the main evolutionary stages of technology development in marketing and identify their new directions. With the development of the information society and the spread of Internet technologies there is a transformation of traditional processes of economic activity.

At the same time, marketing communications become the most important factor in the successful functioning of companies. New technologies are changing everyday life within the boundaries of not only labour relations, but also in communication, as well as in achievement of own goals. Many processes are automated, and innovative solutions become an integral part of creative campaigns.

Traditional approaches and methods have been developed in the era of industrial society and significantly lose their positions with the arrival of new types of connections, formed under the influence of Internet technologies. In this regard, there is a need to analyse emerging trends and develop other approaches to their management.

2 Literature review

The comprehensive development of companies is due to the spread of information technology. The main features of the concept of the information society were defined by Bell (1974). In addition, the economic characteristics of the information society are well represented in the writings of Ritzer (2007). Other researchers emphasize the general virtualization of the economy, social processes, culture, and the increasing dynamics of information relations (McKenzie 1997; Webster 2006). The image of the new network society, built as a system of special open structures, cells and nodes capable of unlimited expansion on the basis of communications using the

communicative code, is noted in the works of Manuel Castells (Castells 2000). One of the features of the Internet, namely the virtual community, is characterized by Wellman: “*communities are nets of interpersonal relations that provide the social interaction, support, information, feeling of belonging to a group and social identity*” (Wellman 2002). Another scientist, Reinhold (2019) offers the following definition: “The virtual communities are social unities that appear in the Net when a group of people support the discussion long and close enough to form a net of personal relations in the cyber environment” (Rheingold 2019). It is important to note that the Internet is used as a means of building communication channels with potential consumers. For example, social networks are a powerful tool that allows customers to take their entire social network with them on a shopping trip (Kietzmann et al. 2011). In addition, the popularity of social networks is due to the presence of links that have the effect of sharing information and the speed of access to it by users. Roggeveen and Grewal (2016) call it the wheel of social media engagement. At the same time, the availability of social networks allows customers to use them as a source of information about companies, brands, products and services. Thus, potential buyers can check product ratings, promote a particular product or service, ask questions, send coupons, exchange opinions, photos, live videos, and express dissatisfaction with the products or services of the business (Piotrowicz and Cuthbertson 2014). Moreover, social media allows users to benefit from social structures, relationships and knowledge while becoming creators and influencers in the global community (Kim et al. 2014).

Continuous changes in marketing research are caused by real events and facts in business. Academic views of scientists have made a great contribution to the development of marketing thought (Day 1996; Day and Montgomery 1999; Kerin 1996; or Lutz 2011). Opinions on the lines of development of marketing are represented by the writings of Bolton (Bolton 2003), Lusch (1999), Rust (2006), or Stewart (2002). The future of marketing thought and practice, according to Kumar (2015) is determined by three components: academic research, marketplace actions, and societal developments.

General scientific methods of cognition based on system-logical and interdisciplinary approaches were used in the research. Grouping methods, empirical, statistical, graphical and other methods were used to process and summarize the information.

3 Discussion and results

As known, in marketing, the key aspect of effectiveness is creativity, sufficient to attract customers and create a brand. Let us consider the main evolutionary stages of technology development in marketing.

Traditional advertising

The basis of traditional advertising agencies is the creative talent manifested by creative director, art director, graphic artists, copywriters. They are masters of 30-second time on television and radio and places on the pages of magazines and newspapers. They use their talent and experience in the development and production of high-end advertising. However, not all manufacturers and sellers could use such advertising. Many made do with second-level creativity or avoided advertising on television and radio altogether. Traditional marketing stimulates growth, promotes the endless search for satisfaction of needs and desires, and apparently treats resources as never before in abundance (Csikszentmihalyi 2000; or Swim et al. 2011).

Online advertising

Today's surveys show that daily use of the Internet plays a significant role in daily lives of consumers around the world. With appearance of the Internet there is a new type of advertising - online display. Banners, animated images and flash advertising have become a new kind of creativity to attract customers and build a brand on the Internet. It is worth noting that the production of these ads required much less effort and funding than the best videos Clio Awards (one of the oldest international advertising festivals existing since 1959). Thus, a larger number of stakeholders could use such advertising, given the limitations in financial resources, especially start-ups. Moreover, large companies that can afford high-end agencies for the production of television advertising, convinced of the effectiveness of Internet ads, began to conclude contracts for the production of such advertising. So, in addition to a few dozen high-class television agencies including Ogilvy, JWT, Saatchi & Saatchi etc. there were thousands of small digital agencies, offering its customers a production of creative banners. Moreover, for the production of such advertising companies, through outsourcing, one can apply to India or another country without loss in the quality of services provided.

In the course of the research conducted by the Financial University, various degrees of influence of factors on consumer behaviour were revealed (see Fig. 1). Thus, the quality of necessary goods/services is fundamental when making a purchase decision (59.4 %). At the same time, half of respondents are attracted by "affordability" (51.2%) and ease of use and search of information on store's website (50.0 %). Another 34.8% prefer to buy goods or services over the Internet in the event that the seller guarantees a high speed of execution of the order/service,

and for 23.4% of respondent's relevance of the information on the website of the store/financial institution is important. One in five respondents (18.0%) will be interested in an online store in the case of a wide range of necessary (and related) goods/services. At the same time, the attractiveness of the design of the website of the organization, the conformity of goods/services with modern trends (presence of well-known brands, regular updates of the range, etc.) and a possibility to virtually test the product/service have a minor impact on consumer choice. Figure 1 that follows depicts the factors that influence the choice when making a purchase through modern digital technologies (shop/financial institution website, Internet banking, mobile applications, etc.) (a question with a choice of multiple answers).

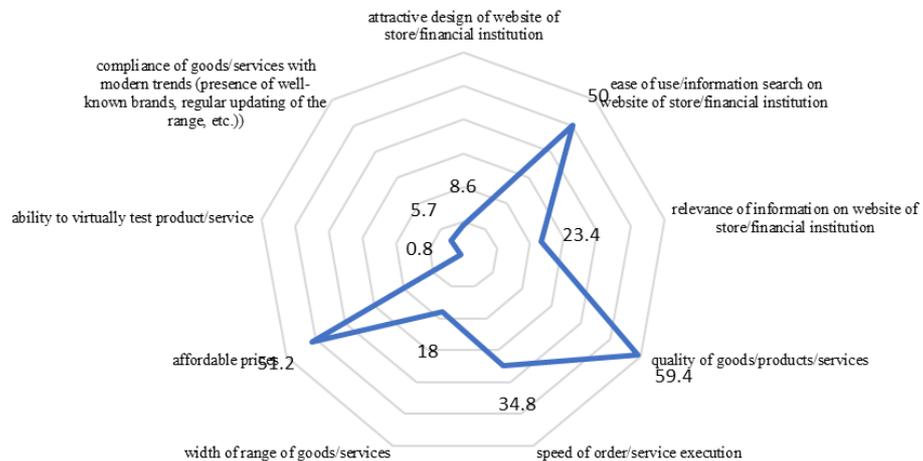


Fig. 1. Factors that influence the choice when making a purchase through modern digital technologies, in %.
Source: Own results

Search Engine Marketing

Internet development has led to the emergence of search marketing. The main goal of the latter is to increase website traffic by its target audience with the help of search engines. For example, Google text advertising, consisting of a 25-character header, two 35-character lines of text and a 35-character URL, has become a new way of advertising on the Internet. Important elements in advertising have become keyword, connection of several short lines in the text and payment only "per click". Advertising with pay-per-click (PPC, pay-per-click or CPC, cost-per-click) today is one of the most common types of partner programs on the Internet advertising market. These types consist of popular ad formats, including teasers, banners, and context. Increasingly, employees of companies, rather than an advertising agency are engaged in promoting company's products and services through such advertising. Typically, search engine marketing requires less effort in graphic design or artistic direction.

Search marketing allows any business with a credit card and Internet connection to place ads in search engines within minutes and compete for the same keywords and placements as Fortune 500 companies. Market data indicate a steady increase in the penetration of the global digital buyer (Statista, 2019). According to the Internet market, online sales through B2B and B2C e-commerce not only expanded the reach and scope of traditional wholesale and retail trade, but also changed the entire business infrastructure in various industries. The reach of online commerce has also allowed small business owners to carry out their business operations bypassing local boundaries. Internet statistics show the growth of sales of digital content through e-commerce platforms, such as iTunes, Google Play or Steam, as well as a huge market for online advertising and marketing. Paid search ads are expected to grow from \$ 97.34 billion in 2018 to \$ 122.61 billion US by 2021 (Statista 2019).

Social Media Marketing

The advent of new digital technologies and websites has accelerated forms of human interaction through online forums, instant messaging, and social media (since the mid-2000s). The rise of mobile technologies such as Wi-Fi and laptops, as well as mobile devices such as smartphones and tablets, has completely changed the online landscape. In countries with weak technological infrastructure, e-mail has been one of main products on the Internet. Thus, the mobile Internet has enabled people to access the web and participate in the global exchange of information. However, the spread of social media, especially market leader Facebook, and mobile social applications such as Twitter, LINE, or WhatsApp have changed the concept of online communications, separating

private and public online space. For example, Facebook has more than 1.2 billion monthly active users (Fig. 2), representing a global reach of nearly 50 percent of Internet users worldwide.

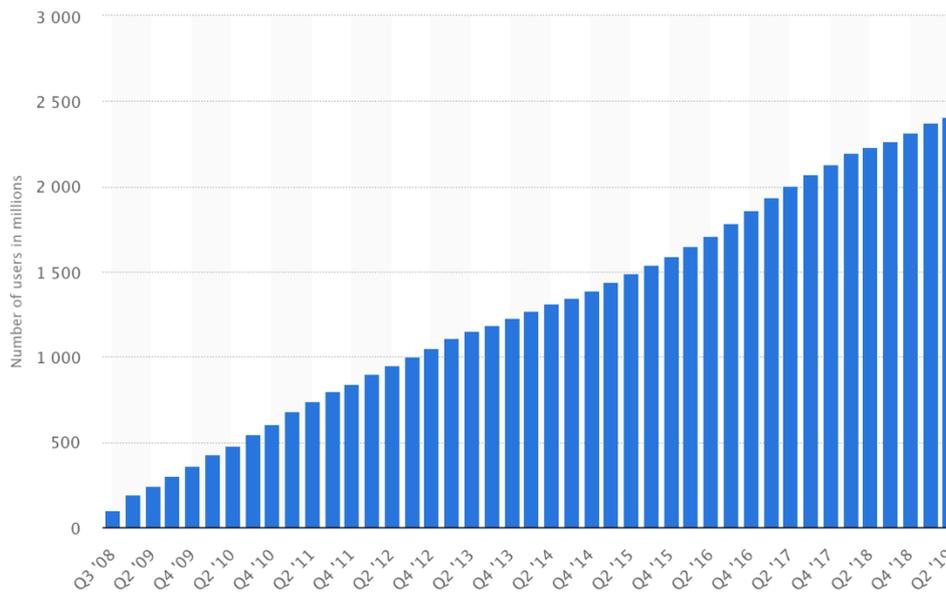


Fig. 2. Facebook user statistics
Source: Statista (2019)

Social media marketing is a set of actions to use social media as channels of information to promote companies, brands or other business objectives. The main emphasis is on creating a message, which in the future network users will distribute themselves. The essence of social media marketing is attentive listening, timely and appropriate response in the social sphere, where the conversation is conducted by customers and potential customers. Active membership of the formed communities is a necessary condition. At the same time, it is almost impossible to control them, because conversations act as a new type of advertising. They, in turn, can not only attract brands, but also repel them, including the most famous. This leads to the conclusion that the best marketers of social networks are real employees of the company, representatives of sales departments, designers and developers of products and services, as well as managers at all levels, actively interacting with the external environment. As a rule, the success of online interaction with brands at different stages of the shopping funnel is due to a number of factors. The findings suggest that a sponsored blog has different effects on online interactions between users and advertisers, depending on the characteristics of the blogger and the content of the blog. They are moderated depending on the type of social media platform and advertising campaigns. For example, when a sponsored blog post appears, a blogger's high experience is more effective if the advertising goal is to raise awareness among network users. It's also worth emphasizing that a sponsored post with high hedonic content is considered more effective if the advertising goal is to increase the number of visitors rather than raise their awareness. However, the effectiveness of campaign incentives depends on the type of platform chosen. Empirical research highlights the key interactions of platform type, campaign objective, source, campaign incentives, and content in user engagement. For example, according to Eurostat, the percentage of businesses using a corporate blog or microblog Twitter, Present.ly et al. is 14 % in 2017, and more actively using in the UK, where this figure reaches 42 % (Fig. 3).

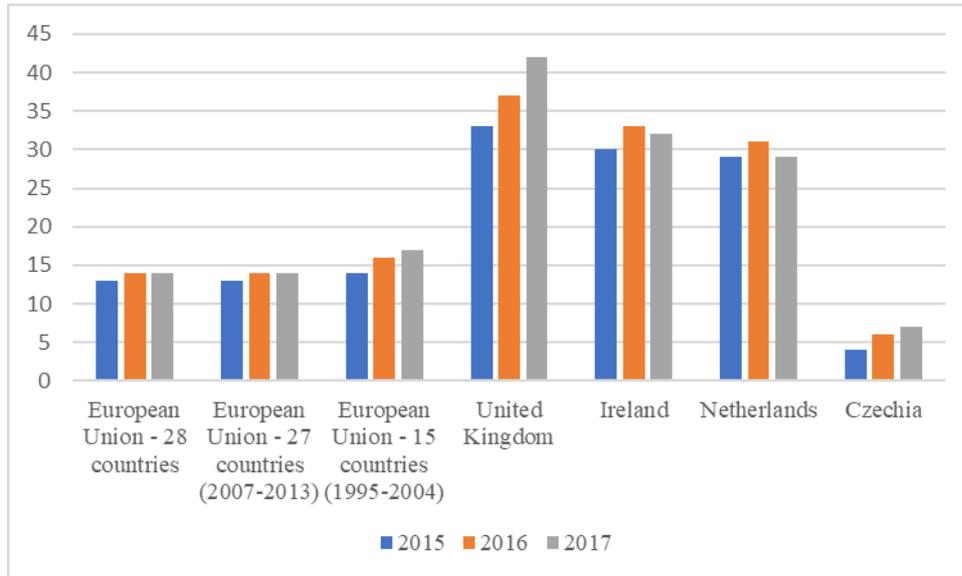


Fig. 3. Use of corporate blog or microblog (percentage of enterprises)
Source: compiled by the authors based on Eurostat (2019)

The Netherlands leads the way in using websites to share multimedia content, such as YouTube, Flickr, Picasa, SlideShare, etc., with 29% of enterprises (Fig. 4). In the EU as a whole, this figure is 11% of companies using websites with multimedia content.

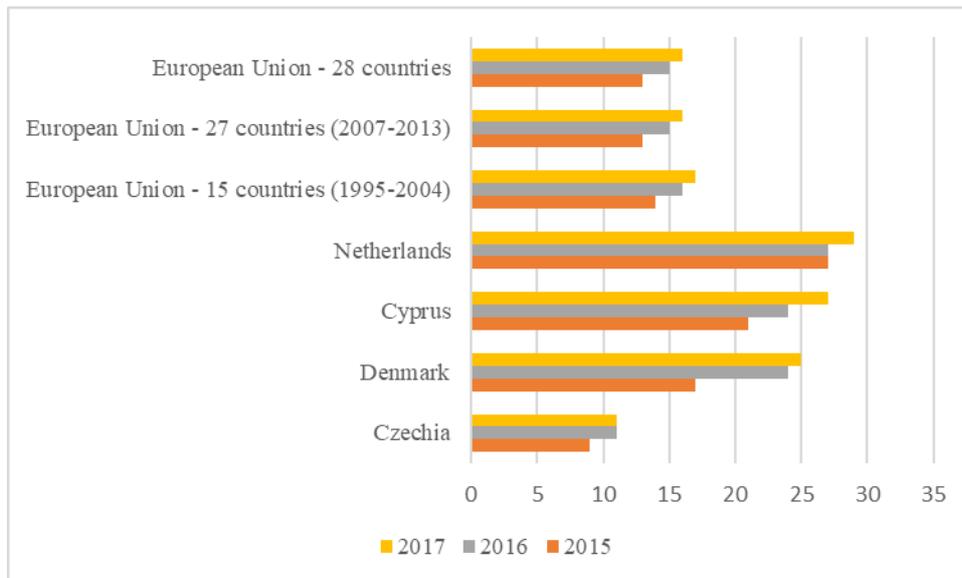


Fig. 4. Use of websites to share multimedia content (percentage of enterprises)
Source: compiled by the authors based on Eurostat (2019)

The share of companies using wiki tools to share knowledge with potential buyers in the EU as a whole is 5% (Fig. 5). Lithuania (12%), Luxembourg (9%) and Sweden (8%).

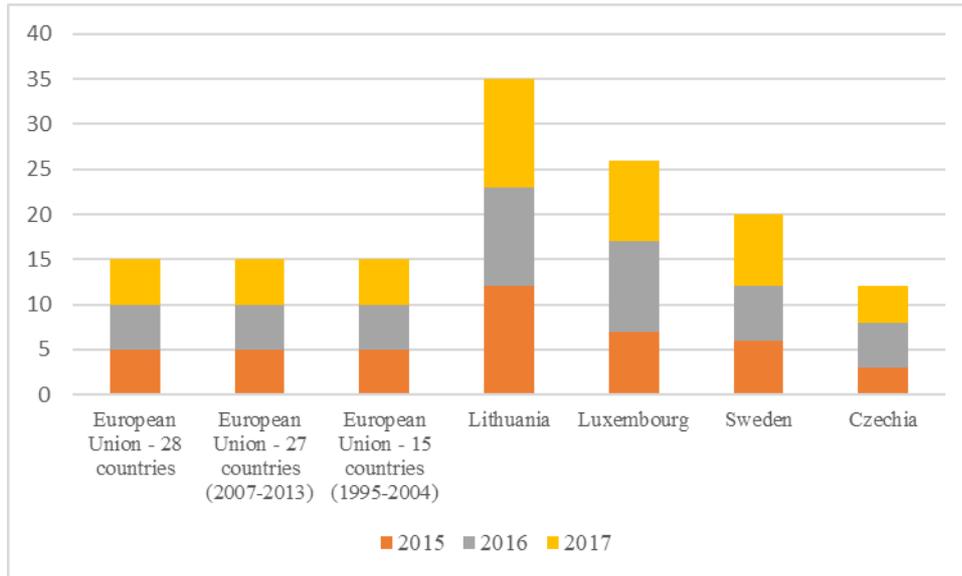


Fig. 5. Using wiki tools for knowledge sharing
Source: compiled by the authors based on Eurostat (2019)

The EU total of enterprises with a website and using any social network reaches 44% (Fig. 6), with Malta (67%), Denmark (67%) and the Netherlands (66%) accounting for the highest numbers.

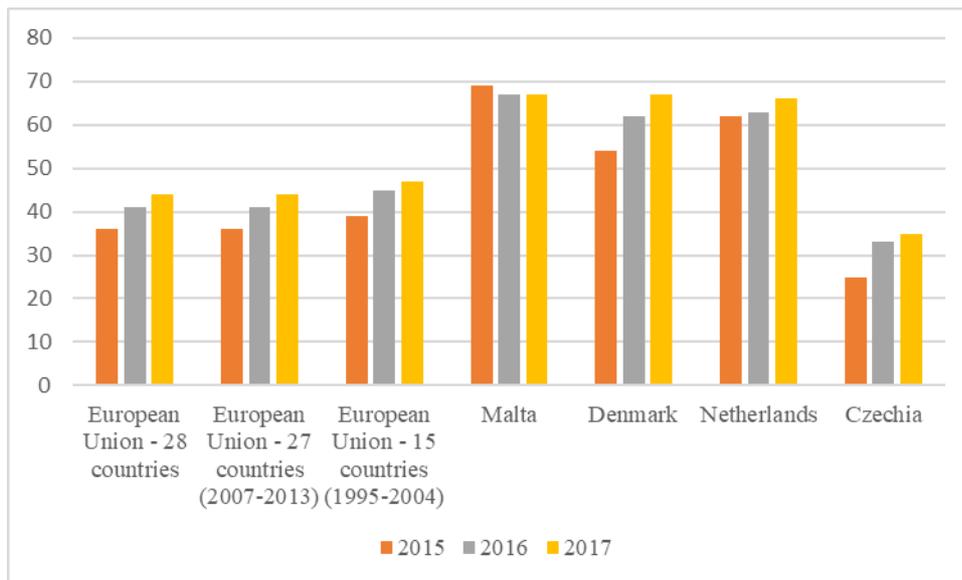


Fig. 6. Proportion of EU businesses with a website and using any social media
Source: compiled by the authors based on Eurostat (2019)

Today, social media has become a powerful marketing tool. While maintaining their primary goal of bringing people together, they have played an important role in connecting marketers and customers. Figure 7 below shows statistics on the largest advertising markets in 2019. It should be noted that in Russia this figure is 49%. A source (Statista, 2019) predicts that Japan will become the fourth largest contributor to global investment in the advertising market, spending \$1.34 billion in 2019. Overall, global advertising spending is projected to reach \$19 billion in 2019 (Fig. 7).

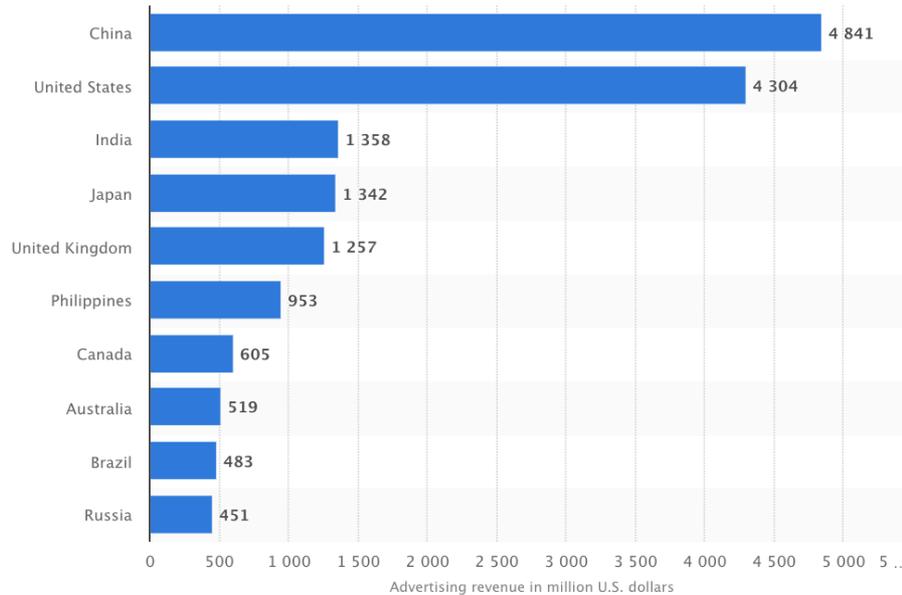


Fig. 7. The largest advertising markets in 2019
Source: Statista (2019)

Machine learning in marketing

In recent decades, three technologies have significantly changed the world, including computers, the Internet and mobile devices. Machine learning is becoming a new technology that makes it much more effective to cope with important tasks in everyday life. Automation helps and makes it easier to purchase advertising in the context system and faster to determine bids. When the first contextual campaign is introduced, there is a question about the cost of one "click" and the expected conversion rate. As long as there is no background to the implementation of the advertising campaign, the work is usually carried out at base rates. Then, in order to segment and sort traffic, geography, device type, time of day, user interests, audience behaviour, conversions are added.

Thus, targeted advertising, in contrast to contextual advertising, puts the search of the audience for the offer in its basis. Its essence is to display ads to those who are looking for a product or service. So, before making a purchase, as a rule, there are several interactions with the user of the site. Many advertisers include attribution based on the last "click," while taking all previous interactions outside of the modelling framework. However, attribution models are now increasingly used, allowing for the totality of all interactions before conversion. One of them is data-driven attribution. With the help of this model, the robot is trained, which optimizes traffic and takes into account all clicks that really affected the conversion.

According to the results of the research conducted by the Financial University, more than a third (37.9 %) of the survey participants in Moscow use online mobile applications "often" or "sometimes" <when shopping online>, and another 15.4% do it "rarely". It should be noted that almost half (46.7 %) of respondents who participated in the study had no such experience (Figure 8).

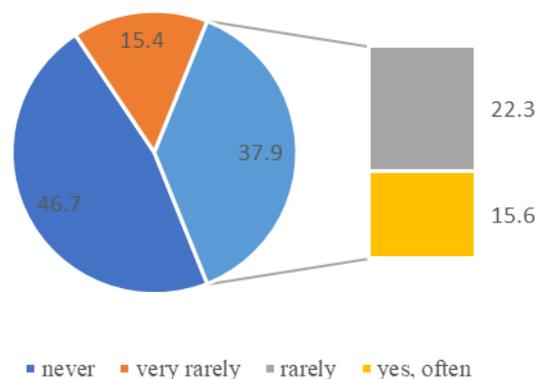


Fig. 8. Frequency of mobile app usage when shopping online (%)
Source: Own results

Interestingly, women more often than men prefer to use mobile applications to make purchases of goods/services online (61.6 % vs. 42.0 %). The level of income also affects the popularity of this communication channel among consumers: respondents with above-average income use the mobile application more often than others (61.3 % vs. 45.4 % of respondents with low income, respectively). At the same time, only one third (28.2 %) of the respondents of the older age group use this service, while this figure is much higher among young and middle-aged respondents - 67.8 % and 59.0 %, respectively.

The absolute majority of respondents with experience in purchasing goods/services via the Internet, expressed an opinion about the convenience of making such purchases (a total of 86.9 % (34.4 % – "very convenient", 52.5 % – "rather convenient")), only an eighth of the respondents noted shortcomings in such purchases. At the same time, there is a interrelation between the convenience of using Internet services for online shopping and the age of the buyer. Thus, respondents of different age groups showed approximately the same satisfaction with digital technologies for the purchase of goods/services. However, the highest rates of absolutely positive and absolutely negative feedback were received by young respondents. Whereas older respondents with online shopping experience were more likely to say that they were "more uncomfortable" (20 % of older respondents) (Fig. 9). The Figure reports the distribution of convenience of using modern digital technologies for purchases of goods/services according to the age of respondents (% of the number of respondents to both questions).

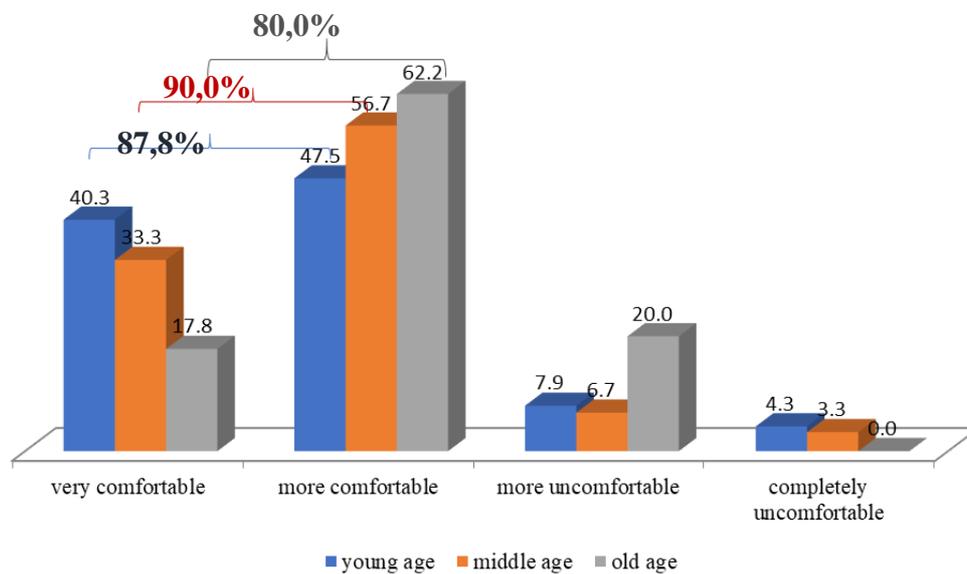


Fig. 9. Distribution of convenience, % of the number of respondents to both questions
 Source: Own results

At the same time, respondents of the middle age group were more likely to express satisfaction with online purchases with minimal negative opinions, which may indicate the highest orientation of Internet services to this age group.

4 Conclusions

Thus, the development of digital technologies has changed not only daily lives of consumers, but also caused a rapid pace of changes affecting marketing approaches to the strategy development of companies. Given the above, the evolutionary development of technologies in marketing is advisable to present by five stages. The first of them (1836-1980) refers to the period of use of traditional advertising. The emergence of the Internet has led to the emergence of online advertising (late 1980s). Search marketing (1995-1996) is designed, on the one hand to meet the needs of consumers, on the other, to provide an opportunity for manufacturers and sellers to ensure the sale of their products. Social networks (mid-2000s) have become the most important stage in the development of marketing technologies, and machine learning (2018-2019) allows to optimize the efforts of potential buyers and advertisers.

Among the main trends in the development of marketing technologies, it is advisable to note the increasing role of digitalization of society, on the one hand, simplifying lives of consumers, and on the other, allowing to manipulate the behaviour of potential buyers. The development of computer technology in close connection with the study of the psychology of consumer behaviour, in our opinion, will be the objects of attention

of advertisers. Given the above, it can be argued that in modern conditions of consumption neuromarketing becomes one of the most powerful tools of consumer manipulation. Neuroimaging techniques provide professionals and experts not only with the ability to predict consumer behaviour, but also to control it. Neuromarketing allows to choose the most effective ways to convince consumers and to form a trusting attitude to the advertised objects.

All in all, it appears that the evolution of technologies used in marketing does not mean that the previous wave is irretrievably obsolete. We believe that TV and magazine ads will still appear some time. However, companies engaged in advertising on social networks, increase own marketing efforts.

Furthermore, it is important to emphasize that new advertising paradigms allow to become available to a wider range of manufacturers, that equals their capabilities in comparison to usage of expensive television advertising. Thus, new technologies used in marketing become more efficient in terms of time, budget and targeted market.

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