

INFORMATION TECHNOLOGIES IN TRANSFORMATION OF MARKETING ACTIVITY

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Abstract

The goal of the paper is to provide a comprehensive review of marketing issues influenced by information technologies. The macro-environment of marketing activity, strategic issues like marketing philosophy, marketing research and segmentation as well as marketing mix were analysed. The main findings are the following: IT advances do change every element of marketing activity of any company, offering both opportunities and threats.

Keywords: information technologies, marketing philosophy, marketing research, segmentation, consumer behaviour, marketing mix

JEL classification: M30

1. INTRODUCTION

The first decade of the XXI century is characterized by drastic changes caused by information society due to increased role of information and knowledge, increase of share of information products and services in GDP, creation of global information space. Consumers have more power and become more experienced, new channels of communications and promotions, new competitive and substitutive products appear on the market in the result of advances in technologies. Inadequate reaction to the changes in the business environment will unambiguously lead to worsening of the situation and in the condition of unfavourable external environment caused by crises even to the bankruptcy of any company. Marketing activity is the one that ties the changes of the external environment with the organization of internal business processes. That is why it is important to study the peculiarities of impact of information technologies on marketing activity.

2. IT AND BUSINESS ENVIRONMENT

Environment of marketing activity of any company is a sophisticated, complex and mobile system. New conditions create new opportunities and threats, new behavioural styles of both producers and consumers. Technology as an element of external environment is

changing in all countries of the world. And technological changes cause changes in legal, economic, social, ecological environment as well as in internal environment of activity of international companies.

The political and legal environment responds to the changes in technologies by regulation of intellectual property rights, information security, legislation on electronic signatures, electronic money, Internet fraud etc. But national authorities do not always respond to the changes in business practice fast enough. For example, the market of electronic money exists for at least eight years in Ukraine already, there are almost ten companies that provide this type of service. But National Bank of Ukraine (NBU) officially registered the first legal systems only in November last year [Eizvestia, 2010].

Innovations, as part of technological environment, are focused on development of informational technologies (IT), biotechnologies and development of new materials. They lead to demolition of boundaries between industries, improve quality of life and facilitate further development and enhancement of international specialization and cooperation. These issues are the manifestations of economic environment of international business. IT is a huge independent segment of the world market. The fastest growing brands are those connected with IT. Apple is a leader of 2010 with 37% of rise in value. Google holds the second place (36%) and Research In Motion Limited – the third one (32%) [BuzzCity, 2010]. And the global spending for IT grows by 3,9% in 2010 comparatively with 2009 (from 3,225 to 3,350 bln USD), according to Gartner [Gartner, 2010].

IT have considerable impact on social and cultural environment – changing cultural elements, secondary values etc., that leads to the changes in consumer behaviour. For example, one can find paper images of mobile phones in funeral parlours in Malaysia. These images are to be burned to allow the relatives to communicate after death [Karpenko, 2010]. The New Oxford American Dictionary 2009 World of the Year was “unfriend” (to remove someone as a “friend” on a social networking site such as Facebook) [GTmarket, 2010]. The companies like Microsoft, IBM, Hewlett-Packard invite full-time anthropologists and ethnologists to study the impact of IT on culture and use these knowledge to satisfy the needs of customers [Karpenko, 2010].

The information technologies change the internal environment of the company: manufacturing technologies, organizational structure, management processes, R&D, financial transactions etc. And marketing philosophy of the company is changing in the condition of information society as well. These changes are the most significant for the international companies working in conditions of stiff competition on the international markets.

3. IT AND MARKETING STRATEGY

3.1. Transformation of marketing concepts

The studies of evolution of development of marketing concepts (philosophies) conducted by Gummesson [Gummesson, 1997, 267-272], Cherenkov [Cherenkov, 2004, 3-32, Cherenkov, 2006] show that there is a mainstream trend, that is the transformation of dominant of marketing paradigm from transaction to relationships, mainly due to the development of information and communication technologies. Cherenkov defines the modern period of evolution of marketing (starting from the end of 90-th last century) as “global integration-communication marketing”. The process of the making of these stage reflects a set of necessary (first of all, formation of relationship marketing) and sufficient conditions

of globalization of business (development of information technologies and systems is the main one). Schultz and Kitchen consider evolutionary shifts in marketplace power with digital devices, information technologies, intellectual property and communication systems as the most important factors of these shifts [Schultz, 2000, 21-56]. And the most comprehensive study of changes of marketing paradigm in the condition of information economy belongs to Ph.Kotler. Accordingly to Kotler, “marketing has evolved through three stages that we call Marketing 1.0, 2.0 and 3.0” [Kotler, 2010, 3]. This evolution from product-centric through customer-oriented to human-centric marketing arose from technological advances: production technology development, information technology and the Internet and modern new wave technology. The evolution of development of marketing concepts perfectly matches the evolution of development of information technologies that is divided on five stages and three evolutionary periods [Trofimov, 2011, 27-30].

3.2. Marketing research, consumer behaviour and segmentation

Information technologies created new possibilities for macro- and micro-segmentation, conducting and processing the results of marketing research, making it faster, cheaper and more reliable.

The question of choice of an international market, the scope of adaptation of marketing strategy is a strategic one for every international company. In this case the level of development of information and communication technologies can be a quite informative and complex criteria of macro-segmentation. For example, the ITC development index assessed by International Telecommunication Union captures the level of advancement of information and communication technologies (ITCs) in more than 150 countries worldwide and compares progress made during last five years [ITU, 2009].

Traditionally, marketing research are based on the following approach: the respondents are being questioned and then the results are being processed. This way of gathering the information provides companies with important information that helps them to make marketing decisions. But this approach considers a human being discretely and do not provide with the whole picture of a person what is essential from the point of view of modern philosophy of marketing activity. And here the possibility created by so called “marketing of things” (IOT) and “smart systems/business” come to the forefront.

The concept of internet of things was conceived by the Massachusetts Institute of Technology (MIT) Auto-ID center. In the IOT vision, everyday objects are networked with one another through RFID (radio frequency identification) sensor networks, providing real-time visibility and allowing “intelligent” interaction between them. Experts from McKinsey consider that IOT will have the most effective application in the sphere of gathering and analysis of information (like consumer behaviour tracking with sensors embedded in products etc.), automation and control of processes, resources and devices [McKinsey, 2010].

Smart business, as Harbor Research experts call it, is a “a concept in which inputs – from machines, people, video streams, maps, newsfeeds, sensors, and more – are digitized and placed onto networks. These inputs are integrated into systems that connect people, devices, business processes, and content to enable collective awareness” [Harbor Research, 2010]. It widens the scope of modern business and social systems and creates potential of changes in national and international business, the way we gather the information, marketing research, entertainment and innovations. Harris Interactive offers comprehensive continuous market research named Harris Interactive Research LifestreamingSM that “links

disparate streams of data together. With this, Harris Interactive has created an approach to connect what people have on their minds, and the conversations they may be having, with the actions that they take – resulting in a deeper, more actionable understanding of each individual in the “now” [Harris Interactive, 2011]. It allows for much better understanding of consumer behaviour and exact and effective market segmentation.

A variety of ratings, analytical marketing research on almost any issues of consumer behaviour are conducted thanks to the Internet. The researches are asking very narrow, tiny questions to respond to the smallest changes in consumer needs. For example, Online Market Intelligence (Russia) was studying whether discounts can lead astray customers searching for a specific taste of a product [OMI, 2010].

Thus, modern information technologies allow companies to build really unique marketing information systems that combine internal information, marketing intelligence and marketing research with timely, fast and quality analysis and processing of results.

The reality of information society changes not only the methods and instruments of marketing research but also the consumer behaviour as it is. And here one can trace two different tendencies. On one hand, there is a unification of consumer needs and consequently consumer behaviour all over the world due to fast information diffusion. On the other hand, the consumers have the opportunity to impact the development of products and services. In general, the needs of the modern consumers have changed considerably as people do not want just to buy something, they want to get new, original experience and impressions. And these impressions are to be created in the result of direct participation of the consumer not just offered by the producer.

The development of information and communication technologies creates new segmentation criteria as well. Accordingly to M.Krikunov (Dean of Kyiv Business School), modern consumers can be broadly divided on “digital aboriginals” and “digital immigrants” with respect to their use of Internet. Digital aboriginals are young people up to 30 who have grown up together with computers and other sophisticated devices. Their real life moved on-line to a large extent. These consumers are ready for relations and they initiate them using any opportunity for creation of community. Digital immigrants – older generation that appeared in the future, they feel some discomfort about this. The number of digital immigrants is quite big in all countries, and it will increase as today’s aboriginals will be behind fast development of technologies [Vinnichenko, 2010]. The main requirements of today’s consumers are the following:

- communication with producers as equals;
- transparency of feedback (feedback 3.0), as the communities expect companies to react on their ideas and requests;
- faster and shorter information that requires media to move in Internet.

It means that open platform technologies demolish borders between companies (brands) and their stakeholders – consumers, suppliers, competitors, society etc. Today, the consumers are not just sceptical because they have the access to detailed information on activity of the company, but they also have the possibility to give feedback, criticize and emotionally react on-line waiting for the prompt reply. It is a challenge for many companies as they are supposed to react to the consumer ideas by providing necessary and true information.

The way we behave in Internet is one more criteria of micro-segmentation. The segments might be universal and exist in many different countries. The experts from InMind Factum Group (Ukraine) consider that there are four groups of Internet users in Ukraine.

Every group is included in media space in different way. In average, we have 11% of “immersed”, 14% if “followers”. 38% of “ordinary” and 37% of “laggards”; the structure is different in different age strata [Masienko, 2010]. This classification reminds the approach used to divide customers in a new product adoption process.

The research called Digital Influence Index conducted by Fleishman-Hillard and Harris Interactive defines five types of Internet behaviour that was evolving together with the development of Internet [Harris Interactive, 2010, 11]. The types are: research, communication, commerce (Web 1.0), publishing (Web 2.0) and mobility (Web 3.0). The findings of the research also show that mature Western markets (like USA, France and Germany) are seeing lower adoption rates for digital behaviours then Asian markets.

One more Harris Interactive research is very indicative. They questioned 1012 respondents, USA citizens, 18+, by phone. To be active always and everywhere is the need of many of them. According to the results, 29% use Internet during honey moon, 6% are ready to be on-line during the wedding ceremony, 8% want to be on-line at church service, 41% allow themselves to surf Internet during family dinner and 26% - in fashion restaurant [Aleksieva, 2010, 8].

To conclude, we can say that modern consumer doesn't wait to be segmented but unites with others by means of Internet. And the main goal of any marketing manager is to find similar communities.

4. CHANGES IN MARKETING MIX

Consequently, the changes in consumer behaviour lead to changes in marketing mix of the companies that perform their activities at both national and international markets. First of all, the transfer from 4P approach that considers marketing mix from the point of view of producer (product, price, place and promotion) to 4C approach that considers it from the point of view of consumer (consumer value, costs, convenience and communication) is more convincing in the era of information society.

4.1. Product / consumer value

As we have already mention, the information and communication technologies are the products produced by many companies all over the world. According to Gartner, there will be a rise in all segments of the industry, the biggest gain will appear in hardware – by more than 9%, and the biggest segment – telecommunication services – will rise by 3,4% [Kutepova, 2010].

Standardization-adaptation continuum in product strategy of all companies entering international markets in the era of information economy is not so obvious any more. As was mentioned before, the customers inform producers about their preferences by themselves, consumer needs converge and technology developments allow companies to adopt with minimum costs.

Informational technologies cause both modification of existing goods and creation of new ones. And sometimes it's quite difficult to distinguish these two. The modification is aimed on stretching of the product life-cycle, it means finding new ways of use of the existing product, attraction of new customers, rise in volumes and frequency of purchases and leads to the offering of new functions, packaging etc. For example, some modern mobile phones are specially conceived to be used as a device for social networks; Google TV plat-

form is a combination of multimedia processors and operative system that allows for the unification of traditional broadcasting and Internet-based video; Multiroom system provides for distribution of audio and video signal from the device located in one room to all TV sets and audio systems in the house; hypervisors enable use of few virtual operating systems on one computer that leads to considerable savings; augmented reality is used in Lego toys; 3D images are used in many spheres. And this is just very scanty list of modern innovations that change products and product policies of many companies.

4.2. Communicating with stakeholders

The biggest changes are traced in integrated marketing communications. The main opportunity as well as the challenge caused by impetuous development and penetration of information technologies is the fact that communications are bilateral now. Earlier the customers were just passive receivers of the information, now they actively participate in communication process and define the scope of this communication, the way they receive the information has changed as well.

As in 2008, across all countries addressed by the Digital Influence Index (seven countries that account for almost half (48%) of all Internet users of the world – GB, Germany, France, Canada, China, Japan and the US), the Internet was roughly twice the influence of the second strongest medium – television – and about 10 times the influence of print media [Fleishmanhillard, 2010, 3]. And when the company wants to strengthen the consumer decision to buy the advertised product it can use Internet video, which is very effective [Dynamic Logic, 2010]. But current spending for Internet advertisement is too small comparatively with the time consumers spend on-line. Accordingly to ZenithOptimedia Advertising Expenditure Forecasts Internet to become the world's second-largest advertising medium in 2013, overtaking newspapers. Advertising in search engines is still the engine of development of Internet ads. Its share in the overall expenditure on Internet ads will grow from 49.2% in 2009 to 51.4% in 2012 [ZenithOptimedia, 2011]

The results of these two studies show that there is an opportunity and keen need to change the priorities in communication mix due to the impetuous growth of impact of Internet on thoughts, attitudes and behaviour of consumers all over the world.

New social media also changed the Internet for both users and advertisers. Now the user is not just looking for the information but also creates the content: creates news, generates posts, uploads images, video, changes status etc. It means that the user is both a consumer and producer of the information. The research Social Media Tracker 2010 conducted by UM EMEA showed that the trend of 2010 is stirring up of promotion of brands in social media [UM EMEA, 2010]. Companies and brands actively create different social communities and groups, develop interactive applications like games, contests etc. The Global Social Media Check-up, conducted by Burson-Marsteller in 2010 also showed that 79% of top 100 Fortune Global 500 companies use at least one of the most popular social media network: Twitter, Facebook, YouTube or corporate blogs. Twitter is used by 65% of companies, 54% have Facebook fan page and 50% use YouTube. But only 20% of these companies use all four platforms for communication with their audiences. Use of social network differs in different regions of the world [Burson-Marsteller, 2010].

The researchers were also studying the reasons to join social brand community: 70% - to get some free content, 76% - to learn more about products, 79% - to learn more how to use products. Also, almost two-thirds of those who have joined the community noticed that

they think better about the brand, have more desire to buy the product and became more loyal to the brand [UM EMEA, 2010]. The motives to use social networks becomes more complicated, interrelated that allows companies to build differentiation policies for different audiences.

There are also some drawbacks in use of social media. The most important are distortion of the message, leak of confidential information, waste of time etc.

One more instrument of mass communication that applies modern technologies is mobile advertising. Its main advantages are wide user database, comparatively low cost per contact, maximum possible targeting of the audience and the ability to reach consumers unreachable by other media like television or newspapers. Also, high level of penetration of mobile phones (there are more than 5 bln subscribers in the world) [Lennighan, 2010] and new possibilities of modern mobile devices (like smartphones, pads, netbooks) make this mean of media very attractive for many companies. That is why, the total expenditures on mobile advertisement accounted for almost 1.5 bln USD in 2009 with 17% growth in 2010 [BuzzCity, 2010].

4.3. Price / costs

Information technologies also change price policy of any company. First of all, there is price divergence due to fast exchange of information and possibility to buy products at low-priced markets. Simultaneously, transformation of business processes leads to decrease in costs. Modern information technologies considerably support companies in recovering from the crisis. For example, Nestle S.A. introduced Globe programme (Globe Business Excellence). It is a global management information system with common database, technologies and the best in their class business processes. This business system is applied almost all over the world. It allowed Nestle to simplify common practices and better trace business processes [Borisenko, 2010]. IT technologies also allow for virtualization of business processes decreasing costs on back-offices and business trips.

Internet has also caused the revolution in payment sphere, making payments for goods and services easy, comfortable, affordable and available for PC and mobile devices users by means of electronic money, Internet-banking, payment cards etc. The estimated volume of the market of electronic money in Ukraine was about 200 mln USD, and the forecasts for 2010 were almost 2.5 times more.

4.4. Distribution / convenience

The distribution policy has changed as well. Information technologies allow the possibility to organize direct distribution and direct export. The classical example of Dell company proves the perspectives of such approach.

One can buy anything and everywhere in on-line shops. The most popular goods are books (44%, for example at amazon.com), dress, accessories and shoes (36%, including design stuff at for example net-a-porter.com), airplane tickets / reservations (32%, at official web-sites of providers), white and black electronic equipment (27%), tours / hotel reservations (26%, at booking.com, for example). One-third of on-line buyers do their Internet shopping at retailers that have only an on-line presence, followed by almost 20 % of respondents who prefer sites that also have traditional "brick and mortar" stores and those that allow to select products from many different on-line stores. Only 16 % of respondents glob-

ally indicate they never shopped online. These are the results of Nielsen global consumer report [Nielsen, 2010].

5. CONCLUSIONS

Thus we can conclude that Internet and smart business, information technologies do not concern exclusively high technologies. Information technologies and systems as infrastructure platform is a necessary condition for being competitive on the market for every single company. That is why the need of changes in marketing activity is essential and obvious due to changes in society. First of all it deals with transformation of marketing philosophy of modern company, realization of its responsibility and place in the society, formation of a new vision, mission and values to correspond to the new needs of customers and other stakeholders. Information technologies offer new opportunities to study the consumers more careful and integrated way, allowing companies to understand not just the needs but the values the customers have. These values are delivered by means of new, more customized products, with lower costs, more convenient and through two-way communication that satisfy all participating parties. It looks like ITs are the best thing ever, but they definitely have some drawbacks the companies should be aware of. That is why there is a need for a further study focused on possible negative outcomes of wide implementation of information technologies in marketing activity.

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