

Anticrisis Marketing of IT Sector Companies in the Conditions of Economic Activity`s Informatization and Intellectualization

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Abstract: The research actuality of the study is due to the fact that in fast-paced world of IT, the ability to adapt, innovate, and proactively address challenges is key to sustaining success and anticrisis marketing should be seen as an ongoing, dynamic process that evolves alongside the industry it serves. Aim of the paper is to justify the necessity of forming a model of anticrisis marketing of IT companies on the example of the adaptation of Ukrainian IT companies to the crisis conditions of their activities. In order to achieve the research goal, general scientific methods of analysis and synthesis, logical and situational analysis and specific methods inherent in management sciences (subjective-objective approach, economic and statistical analysis, method of ranking, grouping, comparison, classification) were used. The practical and theoretical relevance of this study is that the proposed and substantiated ways of IT companies' anticrisis marketing model forming can be of practical interest to managers and leaders of these companies when avoiding or mitigating the consequences of crisis situations. Research materials can be used on practice when solving the problems of increasing the effectiveness of marketing activities of both Ukrainian and other IT companies during the crisis period in order to increase their competitiveness on the national and global markets.

1 INTRODUCTION

The era that we are experiencing at the beginning of the 21st century undoubtedly has features of progressiveness and intellectualization, will play a key role in the course of the history of human development in all its manifestations, including as a time of active development of companies that provide IT services and are capable of optimizing the functioning of business process of companies in other sectors of the global economy, allowing them to be more effective in competing for resources and consumers. As a rule, modern researchers attribute the characteristics and features described above to a new phase of human life, known as the "information society" [1, 2], which creates a new type of economy – the information economy [3, 4]. In turn, the effective functioning of the information economy of a separate state is impossible without the creation and optimal business activities of companies that provide information and telecommunications services, and they, in turn, are rarely limited to serving only domestic consumers and often operate in several countries, which makes them vulnerable to

global negative economic, political, social, legal and technological factors. Anticrisis marketing, as an important component of the activities of a modern IT company, can help solve a number of problem situations that are caused by different groups of negative factors, but its tools must be constantly reviewed and improved, since the IT sector is the area of business that is developing most dynamically.

2 PREREQUISITES FOR THE NEED TO IMPROVE ANTICRISIS MARKETING OF UKRAINIAN IT COMPANIES

The active use of information, knowledge, and various communication technologies, as well as information in electronic form, significantly complicates the activities of companies that do not use modern technologies for processing them, making them less competitive. Currently, the rapid development of information technology, computer engineering, and the Internet makes it possible to implement a variety of methods for transmitting and processing a huge amount of information, and it is no

longer possible to refuse these advantages. This is what determines the modern popularity of IT companies that develop both universal products and unique solutions based on customer requests.

On Figure 1 we have systematized the factors that influence the activities of modern Ukrainian IT companies.

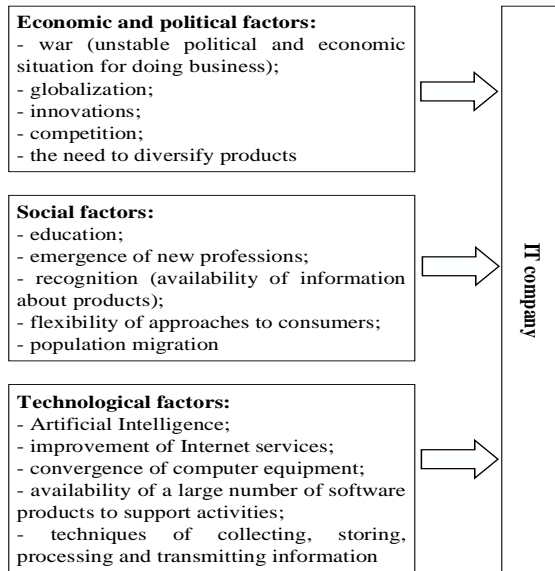


Figure 1: Factors that influence the activities of modern Ukrainian IT companies.

Along with the above factors, the activities of Ukrainian IT companies are also influenced by approaches to determining various directions for the development of the information society. In our opinion, in the context of the Ukrainian environment for doing this type of business, the following directions should be considered:

- pessimistic view (techno-totalitarian society). All applications and databases will be developed taking into account the fact that people will be increasingly tied to the computer, and the main goal will be to gain control over them. In such a society, human functioning will be deprived of privacy and freedom, which can lead to physical and psychological isolation of workers, deepening inequality in access to information, increased crime rates, etc. [5];
- optimistic view (network society). An optimistic vision, endorsed by authors such as Gilder and Castells, emphasizes the positive role of information and communication technologies in economic development and the improvement of human capabilities. This point of view mainly highlights the positive impact of social networks

and modern information technologies, viewing them as a means to build a better civilization and establish better relationships between companies, customers and other economic actors [6];

- evolutionary view (logical continuation of the development of society). Proponents of this trend suggest that information and communication technologies do not have a dominant influence over humans, and changes will be exclusively evolutionary in nature. In other words, new technologies will effectively support existing social, economic and cultural systems [7].

The information technology sector became one of the few economic spheres that demonstrated growth during 2022 and contributed 16% more funds to the state budget of Ukraine compared to 2021 [9]. However, along with such positive statistics, a number of alarming signals were also recorded, which once again forced the management of Ukrainian IT companies to think about the need to develop and improve anticrisis measures.

According to the study "Do IT like Ukraine" by the IT Ukraine Association [8], all Ukrainian IT companies in one way or another faced the challenges associated with a full-scale war. Only 34.3% of Ukrainian IT companies were able to fully adapt to the new conditions, which took measures such as equipping office premises with generators in case of power outages, moving key systems to the "cloud", paying for the relocation of leading specialists to another region of the country or the world, or providing funding for secure co-working services, as well as diversifying the network of providers to ensure uninterrupted product creation [8].

The executive director of the IT Ukraine Association Kostyantyn Vasyuk claims that during the crisis, which was caused by the start of a full-scale war, two key groups of customers of Ukrainian IT companies can be distinguished:

- those who are more vulnerable to the challenges associated with the need to move key parts of the project outside of Ukraine and are reluctant to make contact;
- those who consider concluding new agreements with Ukrainian companies as some kind of social mission and continue to cooperate with Ukrainian IT teams [8].

Therefore, it can be said that large and medium-sized companies that operate with large amounts of data and serve a significant number of customers show a high degree of caution regarding cyber

security issues and are extremely wary of the need to transfer data outside the state, while small businesses are somewhat more likely to accept risks in exchange for a quality and efficient IT product. At the same time, those companies that already cooperated with Ukrainian IT companies as customers (both Ukrainian and foreign) during the war and did not feel the negative impact of political and economic factors are mostly interested in continuing cooperation in the future. However, there is also a category of customers who, along with the above-mentioned crisis factors, carefully analyze the dependence of the Ukrainian IT sector on the state of the global IT market and the recession of the world economy, which affects their final decision on ordering products and services.

It is quite difficult to assess and measure the number of IT companies operating in Ukraine, because different sources report different numbers depending on their access to analytical data. We are invited to consider the dynamics of the number of Ukrainian IT companies based on official data provided on the website of the State Statistics Service of Ukraine (Figure 2) [9].

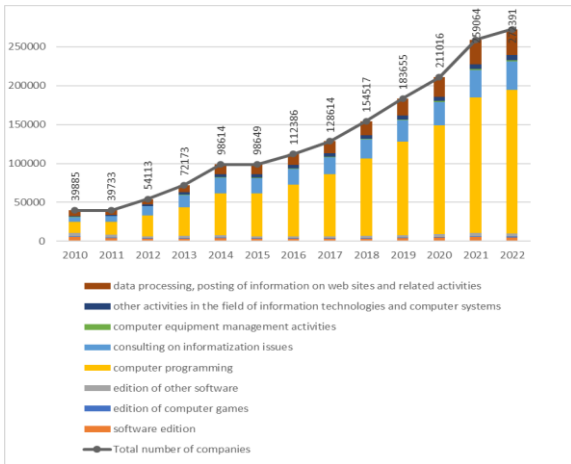


Figure 2: Dynamics of the Ukrainian IT companies' number, units, 2010-2022 [9].

At the end of 2010, there were 39,885 IT companies in Ukraine, while at the end of 2022, their number increased to 272,391, that is, almost seven times, while the growth of the number of companies did not stop even in war conditions. The largest number of Ukrainian IT companies is engaged in computer programming, which can also be seen from the given statistical information. It is worth noting that when compiling statistical reports, liquidated companies are also taken into account, so it is possible to determine the real number of operating companies only approximately. Along with

this, it is characteristic of the Ukrainian IT sector that one company can have several legal entities, which also somewhat affects the official statistics, which reflect exactly the number of legal entities in this sector of the economy.

The majority of top Ukrainian IT companies exhibit a net profit margin below 15% (Figure 3). However, two local market product companies stand out with unusually high margins: Fintech Band, LLC (60%) and UAPROM, LLC (18%). Similarly, both payment processing firms, Ukrainian Processing Center, PJSC (28%) and "Visa Ukraine" (18%), demonstrate notable profit margins [10].

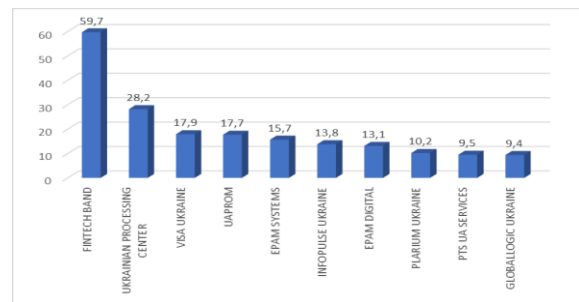


Figure 3: Net profit margin of top Ukrainian IT companies, %, 2022 [10].

In 2021, the highest growth in the volume of IT exports over the last 10 years (+38%) was observed, but already in 2022, the smallest growth for this period was noted - only +5.9% per year. Despite all the crisis phenomena in the country's economy and at the global level, the volume of IT exports in Ukraine still continues to grow and in 2022 it reached the mark of 7.3 billion US dollars, which is explained by the presence of a significant demand for this type of service, which is not always can satisfy only national companies (Figure 4) [9].

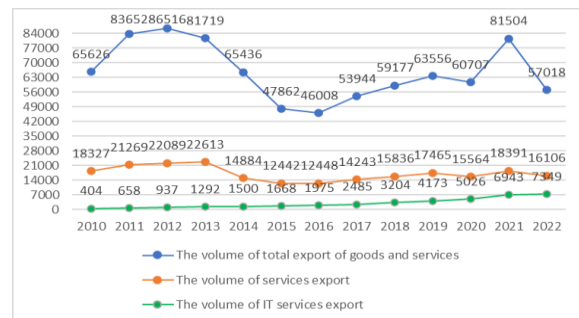


Figure 4: Comparison of the dynamics of total export of goods and services, export of services and export of IT services of Ukraine, million dollars, 2010-2022 [9].

The share of IT in the export of services in 2022 reached 45.6%, and in the total export of Ukraine - 12.9%. It can also be seen that it was constantly growing for the years 2010-2022.

Despite the generally positive trends in the IT services market of Ukraine and the rather successful anticrisis management of Ukrainian IT companies, there are still challenges that need to be overcome. The main one is related to a possible further reduction in the export of Ukrainian IT services and the transition of key customers to the use of the services of Asian, American and other European IT companies. Against the background of some decline in interest in digital and information services after the COVID-19 pandemic and the complete exit from the lockdown, this may have a noticeable impact on the profits of Ukrainian IT companies. In the context of the above, a more detailed consideration of anticrisis marketing of IT companies and ways of its adaptation to the changing needs of the national and global markets is being updated once again.

3 SCIENTIFIC AND PRACTICAL SUBSTANTIATION OF THE IT SECTOR COMPANIES ANTICRISIS MARKETING MODEL FORMATION

There is some difference in understanding the essence of activity of IT-companies according to the product or service they produce/provide [11]. IT-product companies are oriented on end users of their product, service IT-companies or outsource companies are focusing on clients that need some services which help further production or providing of product/services. IT-products include apps, social networks, online-games, antiviruses, online games, websites, operation systems.

80% of the top ten companies by capitalization in the world are IT-product companies. Among them are Apple, Microsoft, Amazon, Alphabet and others. The products of Apple Inc. include Mac, iPhone, iPad, iOS operating system, Apple Watch, Apple TV, iCloud, Apple Pay, iTunes Store etc. Microsoft Corp. products include Xbox, Microsoft 365 (Word, Excel, PowerPoint, Outlook on Microsoft Windows, OneDrive, Microsoft Teams), Windows operating system. Samsung Electronics products, like one most famous IT-product companies, include Smartphones, Tablets, Smart watches, Televisions, Audio and video players, Monitors, SSD etc. As of 2023, these corporations are among the world's largest companies by turnover.

IT-product companies operate in different niches, such as FinTech, HealthTech, EdTech, LegalTech, AITech, SportsTech (Table 1).

According to research of Genesis, Ukrainian co-founding IT company, the most common features of IT-product companies in Ukraine include:

- the most valuable part of IT-product company is the team and expertise;
- earn on the final (intellectual) product of Ukrainian specialists, instead of selling hours of their work mainly abroad;
- they have strong brand and help build the brand of Ukraine;
- they have greater influence on the development of innovations - companies work on innovative solutions and innovative technologies for the development of their own product;
- there is greater need for employees, so they create more jobs;
- they have less linear and predictable development;
- in order to grow, product companies need not only to hire and resell employees, but also to build an interesting product for the market;
- they have higher revenue per 1 employee;
- demand for people with higher professional level (top talent);
- the team in IT-product company is the alive organism that strives for self-organization;
- the team members have expertise not only in their field;
- responsibility not only to business goals but also to other team members.

Table 1: Niches and examples of IT-product companies.

FinTech: EPAM Ukraine, SoftServe PayPal, Stripe, Square	HealthTech: Zocdoc, NIX, HealthTap, Nudge Health, Babylon	EdTech: Duolingo, Coursera, Khan Academy
LegalTech: DocuSign, Clio, DoNotPay	AITech: Grammarly, OpenAI	SportsTech: Strava, STATS Perform, Opta Sports
AgriTech: Infopulse, Trinetix, Granular, FarmerAI, Infarm	GovTech: Diia, Intecracy, ELEKS, OpenGov, SmartCity	CybersecurityTech: Sigma Software, CrowdStrike, Fortinet, CyberArk

Crises may be caused by internal or external factors. In case of internal imbalance or errors, which could be made by employee, the gold standard of actions include investigation the situation in detail; acceptance the fault if it lies on the company or the

product; sincerely apologizing; taking measures to restore public confidence.

But it's necessary to act as before as during crisis (Table 2). Choosing a team for communication during crisis, the best option in this situation will be C-level representatives, however, it's necessary to be sure that they will be able to cope with the tasks. Also, it's important to be sure the whole team knows who will communicate about the crisis. Values matrix can be used in developing communication strategy with determining the communication channels through which communication with target audience will be set. The prepared media kit is useful to refer to when communicating with the media.

Table 2: The algorithm of actions of the company's communicators during the crisis situation.

Before crisis	During the crisis
Determine which situations pose the greatest threat to product and can become a crisis; to make a list of such events; to determine which operational processes are the most important for the functioning of product.	Collect and analyze all information about the crisis situation that occurred. Be proactive: communication with the public as soon as possible about what happened and what next steps are.
For each crisis situation, collect a list of potential questions from the public and prepare clear answers that contain facts.	If company is to blame for a crisis situation - admit the mistake and ask for forgiveness, tell about your next steps.
Choose a specific person or people who will communicate with the public during the crisis.	Communicate with your target audience with key messages.
Define the key target audience with whom it will be necessary to communicate.	Control the flow of information about the crisis event and your brand.
Develop a step-by-step communication strategy and key messages.	Stay calm, take care of condition and try not to react to irritants.
Create a media kit in advance.	Record all communication

In crisis situations, reaction has to be immediately: 10% of communication is about the mistake, 90% is about how and what the company does next. During the crisis focusing have to be on response to media inquiries with quick and appropriate comments. It's useful to make a note of all the media and the requests - in the future work with it may help deepen anticrisis communications plan.

The key development vectors of IT-product companies are orientation on employee self-improvement, quick carrier growth because of colleges experience, the value of ideas. Communication is the key factor during any type of crises that's why performance

Anticrisis marketing deeply correlates with behavior economics which is transformed from the 2000s onwards, from a centralized research program to a multipolar specialty [12]. Among different behavioral tactics in crises case most effective may be personalization, social proof, limitations and cost avoidance effect.

During crisis adaptation of the content of the application, site, platform to the interests of each individual user should be done. People are more likely to adopt a certain behavior if they see others already engaging in it. One of the examples of using this technique is the distribution of UGC (or user-generated content) – content created by other users of the product. External crisis factors cause limitations. In this case the perception of value increases as soon as it becomes limited or unavailable. And off cause, cost avoidance effect is becoming more important because consumers have limited abilities to buy.

Anticrisis marketing model is basing on modification process of value proposition caused by crisis (Figure 5). Unique value proposition of a product has to be changed and satisfy modified needs of users, i.e. meet market demand (product market fit). So communication messages and positioning are changes too. Such components of ideal customer profile as budget, pain points, factors affecting decision-making are changing: budget is becoming limited, customer pain points are growing, factors are diversified. Such crises as pandemic, war in Ukraine have demonstrated these modifications.

The example of modification process of value proposition clearly may be seen on the activity of such governmental services as Diia in the niche of GovTech which is digital government of Ukraine. It includes portal of online public services, where everything is fast, clear and understandable; mobile application with electronic documents and data about a person from registers; portal to help small and medium-sized businesses; Diia City – special legal regime for the IT industry [13]. At March of 2022 new temporary digital document for the period of martial law appeared in Diia – eDokument. It's very flexible and contains passport data, RNOKPP (taxpayer card). The document has become automatically available to all users after updating to the latest version. The value matrix of Diia has become more expanded during the crisis. In general value matrix consists of segment or common group of users, their pain points, product value and key messengers.

Anticrisis marketing of IT-products includes performance, brand, product marketing which are

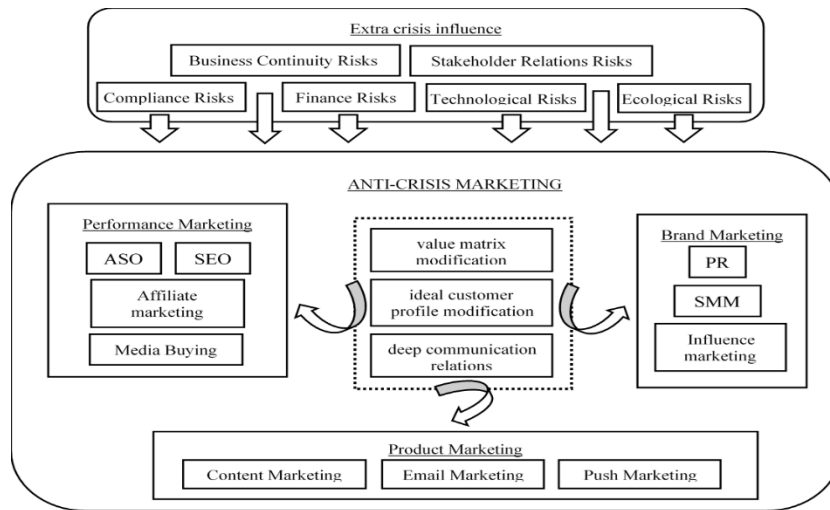


Figure 5: Anticrisis marketing model for IT sector companies.

focusing on communications with consumers. Generally, performance marketing is aimed on effectively attracting new users at the lowest cost but in cases of crisis it's focusing on reducing business risks. Types of performance marketing include ASO, SEO, Affiliate Marketing and Media Buying. Brand marketing aimed at the use of tools that make it possible to build relationships not only between the product and the user, but also between the entire brand and the user. Types of brand marketing include PR, SMM and Influence Marketing. Product marketing focuses on improving the product based on the user experience, retaining and returning users. Types of product marketing include content, email and push marketing.

The results of highlighting specific points of anticrisis decisions may be clearly approved on Ukrainian IT-companies which nowadays operates in high crisis environment because of unstable conditions. The most obvious is the activity of of such governmental services as Diia in the niche of GovTech which is digital government of Ukraine. It includes portal of online public services, where everything is fast, clear and understandable; mobile application with electronic documents and data about a person from registers; portal to help small and medium-sized businesses; Diia City – special legal regime for the IT industry [13].

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crisis. Such actions of this company demonstrate quick reaction on changed environment. Such approval result demonstrates activating of performance marketing. The number of Diia' users has increased by 20% since the beginning of the full-scale invasion and now are 18.6 million [13]. Moreover, content is extending each time. There are a lot of anticrisis decisions on website to help businesses in Ukraine to recover (more than 2.5 thousand publications on Instagram) (Figure 6).

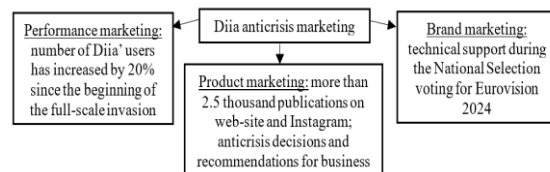


Figure 6: Anticrisis marketing of Diia IT-company.

The evidence of current using of brand marketing instruments is technical support by Diia during the National Selection voting for Eurovision 2024. Ukrainians had an opportunity to make the choice as easily as possible just using Diia application. But during the process of voting the internal crisis situation was appeared: the system crashed and it was impossible to make a choice for some period of time. The rules of anticrisis reaction were used (which were discussed above): quick and appropriate comments were made in media. A lots of media resources were used to explain the situation. Minister of Digital Transformation of Ukraine, Mykhailo Fedorov, announced the record number of users for the entire history of the project. Instead of 800 requests per

second, as was the case during last year's Eurovision voting, there were 15,000 requests per second.

4 CONCLUSIONS

So, during a crisis, adapting the content of applications, websites, or platforms to individual user interests is crucial. This can be achieved through personalized recommendations, tailored communication, or customized user experiences. Personalization helps users find relevant information more efficiently, making the overall experience more valuable to them.

People are more likely to adopt a certain behavior if they see others engaging in it. Leveraging social proof, such as showcasing user testimonials, ratings, or the number of users engaged, can positively influence the behavior of new users. The distribution of User-Generated Content is a powerful tool. Users are often more trusting of content created by their peers, which can enhance the perceived value of a product or service.

External crisis factors may lead to limitations in the availability of products or services. The scarcity principle suggests that the perception of value increases when something becomes limited or unavailable. Creating a sense of urgency or scarcity can drive consumer action, encouraging them to take advantage of an opportunity before it's no longer accessible.

During a crisis, consumers may have limited financial resources, making cost avoidance a significant factor in decision-making. Emphasizing cost savings, discounts, or highlighting the value proposition of a product/service becomes more crucial in such situations.

Overall, these principles highlight the importance of understanding human behavior and psychology in times of crisis and use them in anticrisis marketing model for IT sector companies. Adapting strategies to address individual needs, leveraging social influence, and emphasizing value and affordability can contribute to better user engagement and resilience during challenging times.

During times of crisis, effective marketing strategies for IT products often involve a combination of performance, brand, and product marketing with a strong focus on communication. Combining these marketing approaches can create a comprehensive strategy that not only promotes IT product but also addresses the unique challenges presented by a crisis. The key is to remain agile, empathetic, and responsive to the changing landscape.

The results of solutions approval are presented on example of Diia anticrisis marketing which includes as external crisis factors (full-scale invasion) and internal crisis (technical crashing during Eurovision National Selection). Its effective marketing policy has minimized negative influence on its activity.

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