



## **THE IMPACT OF MODERN TECHNOLOGY ON CHANGING MARKETING ACTIONS IN ORGANISATIONS. MARKETING 4.0**

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### Summary

The article presents the theory that modern technologies are changing the way in which marketing is organised and that they will transform the prevailing composition of the market, while enterprises should come to terms with the act that having a market share will no longer suffice to maintain the market leader position. The aim of this paper is to provide an overview of the key challenges generated by technological innovations and to identify the opportunities for marketing in light of the new communication and information technologies so that quantifiable benefits can be gained. The research topic underpinning this paper is: 1) an analysis of social media use by the Millennial generation; 2) an evaluation of the attitudes of SMEs towards the incorporation of information technology into their current marketing practices; 3) determining the implementation possibilities of Marketing 4.0 by promoting a flexible approach to organising marketing actions. Following a review of the available literature on the subject, we will present a concept of the model of the flexible organisation of marketing actions. The  $D_3I_2C$  concept combines today's marketing actions and digital transformation. It can be harnessed by academia and other organisations seeking guidance on the implementation of transformation in the organisation of marketing actions.

**Keywords:** marketing 4.0, information technologies, digital technology, marketin tools, digital innovation



## Introduction

The world has been constantly changing over the past decades due to the rapid evolution of information technologies. Marketing practices too are changing at a similar pace. Academic research, however, is still lagging behind. Digital technologies are being integrated with marketing actions — both continuously and ad hoc, with a view to achieving the Marketing 4.0 state, that is, a new generation of marketing solutions and the methods, tools and implemented practices involved. Globalisation and the development of new technologies has fostered the development of innovation and competitiveness, which are taking place on an unprecedented scale. Economic growth has also affected the whole world. Governments, enterprises, and ordinary people are becoming dependent on technology, facilitating greater productivity at work and a higher standard of living. It is also the means to acquiring new skills. This strong dependency on digital technology raises the question directed to scientists and practitioners in the field of marketing of how well prepared we are to face the challenges brought by digital innovation, and whether we can seize the opportunities provided by Marketing 4.0 in today's highly competitive market space?

This article begins with a description of the challenges stemming from digital innovation and goes on to discuss the possibilities and characteristics of Marketing 4.0. The author performs a combined qualitative and quantitative research process and then presents the conceptual model of flexible marketing organisation. The D<sub>3</sub>I<sub>2</sub>C conceptual model results from the integration of contemporary marketing practices with digital transformation. The research questions underpinning this study are as follows: 1) an analysis of social media use by the Millennial generation; 2) an evaluation of the attitudes of SMEs towards the incorporation of information technology into their current marketing practices; 3) determining the implementation possibilities of Marketing 4.0 by promoting a flexible approach to organising marketing actions. A large-scale review of the available literature encompassing marketing and other topics has been combined within the implemented research process with a series of qualitative interviews with experts, managers and students. Two quantitative studies have been conducted on the basis of the results

obtained (with SME managers and with people from the Millennial generation). In the summary, the author discusses the ways in which benefits can be derived from digital innovation with the use of Marketing 4.0 techniques.

### **Marketing in the age of digital transformation**

According to what Dholakia and colleagues wrote, progressive globalisation is closely connected with the rapidly rising technologies producing, processing, disseminating and consuming information. These technologies are considered the most important transformation processes today. They are forcing companies to change traditional marketing actions, organisational structures and even business models. Information — more than ever before — is becoming the essence of the market. Moreover, information is starting to become a part of assets, and the manner in which it is obtained, managed, and distributed are the very tasks that marketing should consider particularly carefully and zealously, especially considering that this process is taking place in a dynamic environment, amid a great wealth of knowledge. Today, the flow of information is incredibly intense and, what's more, it is still constantly growing. It is becoming more and more complex on every level of business and economy but it is not gaining in transparency. These changes in the flow of information and in ongoing processes combined with the enormous impact of information technologies is transforming the physical market space into a place referred to as the infosphere. In effect, new business models are being developed and, within them, the production and consumption domains are becoming less and less distinct from one another as they are "informationally intertwined".

### **The challenges of digital innovation**

The challenges that emerge from digital innovation can be summarised by breaking them down into four global trends which are considered to be breakthrough forces. The first is the growth in urban sprawl — which has

its origins in businesses delocalising into emerging markets. This is occurring in parallel to the industrial and urban revolutions taking place in these markets, which is shifting the centre of the world's economy to eastern and southern hemisphere. The second breakthrough force is the acceleration with which the increase in scope, scale and economic effect of new technologies is occurring. The fast pace of adopting these technologies and implementing innovation has had a serious impact on the life cycle of enterprises and their products, which is forcing managers to accelerate decision-making and resource allocation. Management boards and marketing departments are faced with time pressures, an unexpected revolution in the data world, which has brought the big data phenomenon with it, and with the proliferation of technology-based business models. The third of the global trends is an ageing world population, the fourth breakthrough force is the degree to which the world is interlinked through trade and movements of capital, people and information (which also includes data and communication). These breakthrough patterns can be observed in practically every market and every sector of the global economy.

Digital innovation is forcing organisations to rediscover themselves — at a different pace and in a different scope. It can be said that new consumer behaviours and decisions underpinning their shopping habits are the ultimate determinants of this need. The most popular marketing matrices like market share, brand loyalty of consumers and distribution power are still important but marketing decisions cannot be based on them alone. Sticking to traditional and familiar practices may leave companies on an established market position and with a low level of competitiveness. By reacting to the changes caused by digital transformation, companies are having to reconsider their business models, their customer offering and their underlying business processes. They are also trying to discover and implement these new opportunities with the hope of winning digital consumers. Some companies are doing their best to keep pace with the emerging digital trends while other are lagging far behind. Generally speaking, companies from knowledge-based industries are more flexible and pro-active, endeavouring to react appropriately to the mentioned trends. Several categories of enterprises were classified recently depending on their openness to digital innovation.

The global study on digitisation in business conducted by MIT Sloan Management Review and Deloitte revealed that the degree of digital technology implementation depends of the level of digital maturity of the enterprise. Four main digital technologies were analysed: social, mobile, analytics, and cloud technologies. The study found that enterprises, which are embarking on the path to digital maturity, are implementing these four digital technologies to change their own business processes. Companies with average digital maturity are focused on solving specific business problems, deploying individual digital technologies — this shows a short-term orientation to digital transformation. Digitally mature companies, on the other hand, are characterised by the presence of business processes that have already undergone transformation, are engaging talents, and possess flexible business models. As a specific company rises to progressively higher digital maturity, it is almost equally developing elements of social media technology, mobile applications, analytics, and cloud technologies.

The most popular criteria used to classify businesses based on their reaction to digital innovation are:

- 1) Digital performance, which corresponds to the degree of digital maturity, measured by Digital Quotient;
- 2) The type of digital strategy measured by the following indicators: reaction speed, scale of digital innovation, pro-active reactions, and the reallocation of resources;  
and
- 3) The level of digital maturity.

The Industry Digitisation Index by McKinsey is used to measure the digital maturity of companies. McKinsey identified three classes of enterprises in relation to their digital activity: current leaders, emerging leaders, and followers. Depending on the type of digital strategy, companies can be divided into ones where innovations are present on a lower scale, digital migrants — enterprises which speedily follow the leader of the changes, and organisations which transform business models. Digitally mature companies can be considered typical examples of Enterprises 3.0 (Table 1).

Table 1. Typology of enterprises based on the degree of their "virtualisation"

Traditional enterprise	2.0 and 3.0 Enterprise	
Model	Based on a production line	Based on services
Level of digital maturity	On the path to growth	Developed and mature
Business processes	Linear vertical processes	Dynamic collaboration
Operations management	Task-based work	Real-time work allocation
Management	Traditional	Kanban method
Stage of marketing evolution	Marketing 1.0 and 2.0	Marketing 3.0 and 4.0
Marketing orientation	Product orientation	Customer orientation
Marketing philosophy	Transactional marketing	Social marketing
Organisational structure	Hierarchy/rigid structure	Network/dynamic structure
Production	Scheduled	On-demand

Source: based on [http://www.ey.com/Publication/vwLUAssets/EY-enterprise-3-0-a-digital-enterprise/\\$FILE/EY-enterprise-3-0-a-digital-enterprise.pdf](http://www.ey.com/Publication/vwLUAssets/EY-enterprise-3-0-a-digital-enterprise/$FILE/EY-enterprise-3-0-a-digital-enterprise.pdf) [retrieved on 10 March 2016].

Depending on the level of digital transformation achieved, companies can be classified as centred on one product or service and are revolutionising a certain area globally (Spotify, Square, Uber); enterprises shaping ecosystems — reinventors (John Deere and Schibsted); and activists (practitioners). No matter how a given enterprise chooses to react to digital innovation, it faces the necessity of implementing changes to its business practices.

Perspectives and Prospects for Marketing 4.0

Marketing 4.0 is the outcome of complex changes triggered by turbulence on markets, the aggressive nature of global competition, demanding customers, and the rapid emergence of new technologies and cutting-edge marketing innovations. It can be regarded as a peculiar and extremely fast cybernetic marketing based on a system of stimuli, feedback and reactions, and which is highly flexible and characterised by a thorough understanding of the rules of business. Such an open and dynamic system allows for real-time monitoring of transactions and actions towards clients taken in every part of the world. The transformation of the marketing system requires a



new approach to the organisation of marketing actions. We are talking of a new, digitised marketing system at the centre of which is the client. Meticulous planning of specific elements of the system and their relationships are needed to stimulate interaction with the products and offer clients individual, emotional experiences (through "points of contact"), and to add new value. The connections can also be used to illustrate the system where nodes (vertices) are elements of a digital marketing mix, and the interactions between the enterprise and the client are located along its edges (constituting links).

Digitisation changes the process in which purchase decisions are made — including the way in which the client looks for information, considers his/her options, and evaluates products and services, relates to the enterprise, and makes a purchase. The process after the changes, that is, the one that replaced traditional purchase decision-making, is referred to as the "digital consumer path-to-purchase journey". Following the changes which have occurred over the past decades due to the evolution of information technologies, marketing is undergoing its own transformation and has reached the phase called Marketing 4.0. This new generation is needed because clients are not only looking for products that meet their basic needs and desires but also soothe their anxieties. Products also have to meet the client's need for creativity and be characterised by the valued defined by Marketing 3.0. Apart from this, clients want to become a part of the production process (see above: the "informational intertwining" of business models), which is an important distinguishing feature of Marketing 4.0.

Table 2. Companies on the initial and advanced stage of digital maturity

Critical Success Factors (CSF)	Level of digital maturity	
	Low	High
Scope of transformation	Partial	Full
Concentration on digital transformation	Operational	Strategic
Investments in digital opportunities	Small-scale (concentrated)	Large-scale
Technical capacity (big data analytics, DCM, SEO, etc.)	Less important (strong and adaptive culture)	Important
Marketing organisation	Hierarchy/rigid structure	Network/flexible structure

Source: Own study.

Marketing 4.0 can easily be implemented in digitally mature enterprises (Table 2). According to the research conducted by the BCG, many marketing organisations — and those that are the best in their class — operate more like technology companies, deploying agile technologies which are typical of software development companies, and are accelerating their marketing actions through a scrum-based approach. As we are witnessing a shrinking of the product life cycle and acceleration of the planning deadlines, enterprises must adapt more rapidly, particularly with respect to the human factor and business flows. In this sense, it can be said that Marketing 4.0 stands out in terms of the time, management of talents, data and analytics, the degree of centralisation and the marketing action organisation models.

As for *time planning*, waterfall planning and the scrum approach are usually employed. Waterfall planning reflects the self-organising and self-reliant process of organisational development in a very dynamic environment. When applying the scrum approach, every marketing initiative is broken down into several iterations (sprints), each of which lasts from 2 to 4 weeks. This allows for updates to be implemented should the client demand and changes during this time. This approach is extremely useful in the final phase of new product development. Meanwhile, *talents* are indispensable to ensure successful implementation of Marketing 4.0 actions. Many companies lack qualified data analysts and experts. Despite the fact that employees are expecting new marketing competences, new marketing technologies are emerging like, for instance, customer experience expert, content expert, multichannel campaign manager, data analyst, and data narrator. As mentioned above, the creation, management, dissemination and utilisation of information are gaining in importance and may prove to be decisive for the company's survival. This is why *data and analytics* are of such fundamental importance. We can speak here of three functional areas: data management, advanced analytics, and consumer analyses. *Marketing organisation* oscillates between a fully centralised structure, through a hybrid structure, to a decentralised one where marketing actions are distributed to brands and to business units. The models of marketing organisation are centred around products, segments, channels, geographical locations or functions.

**The D<sub>3</sub>I<sub>2</sub>C (Design-Direct-Develop-Interventions-Innovation-Capabilities) conceptual model: how to take digital innovation on board using the options available within Marketing 4.0**

In this section, we present the D<sub>3</sub>I<sub>2</sub>C conceptual model which was created as a framework for supporting flexible organisation of marketing actions and which is the response to the digital transformation of business models. This conceptual model is based on the findings from a review of the available literature and on the author's earlier studies. It was generalised so that it could be applied to enterprises at different stages of digital maturity. The D<sub>3</sub>I<sub>2</sub>C conceptual model reflects the main ideas of marketing management in Marketing 4.0 as an independent and self-renewing process of activation, adaptation, and anticipation of challenges in a very dynamic environment (represented by the cycle of continuous improvement). The first part of the D<sub>3</sub>I<sub>2</sub>C model reflects the stages of the marketing management process in Marketing 4.0 that were set out as below.

On the **design stage**, enterprises should focus on the development of relevant indicators that will correspond to the level of their digital maturity. The lack of a coherent strategy is one of the main barriers holding enterprises back in the early stages of digital maturity. This can be accompanied by problems with getting the right focus on the problem. Such companies encounter many concurrent varying priorities (the market — the product — technologies). Enterprises in the early stage of digital maturity have to face issues like the lack of understanding from management boards, and digital technology companies — if still in the early stages of maturity, are dealing with a low level of digital skills among their employees, including the managers.

Companies on a high level of digital maturity have to treat security issues as their top priority. The biggest risk when selecting the right marketing indicators is related to the decision-making process by the management board. Sometimes, instead of defining business objectives that would support marketing and establish the frequency and the level of detail of the required data, managers opt for analytical results which are in cue with their intentions and attitudes but fail to reflect the priorities of the firm. The discord between the perceived and objective information needs in the company can sabotage all the efforts and endeavours of the enterprise on the path to implementation of digital transformation. It can also be described as a "digital marketing short-sightedness".

**The direct stage** is linked to outlining the digital marketing strategy. Companies in the early stages of digital maturity usually rely on a customer- and profitability-oriented marketing strategy. Whereas enterprises on a higher or the highest stage of digital maturity are focused mainly on transformation, innovation and decision-making.

The success of execution of the third stage (**development**) depends on the talents and leadership. Firms at the early stages of digital maturity are characterised by a "silo" culture. Enterprises at the middle stage of digital maturity focus on an integrating culture, while digitally mature companies manifest an integrated and innovative approach. The degree of investment in digital skills is very different between these types of enterprises, starting from expenditures within the range of 20% in companies at the early stage of digital maturity, to double this amount on each subsequent level. Similar data apply to the digital skills of leaders.

The second part of the  $D_3I_2$  model contains the tools that enterprises may use to reach the above mentioned stages. The first tool (Interventions) are marketing actions directed at disturbances in the macro environment, including market barriers and provisions. These actions form a part of the company strategy of changes. Leadership on a balanced market can be achieved thanks to joint inventions in the value chain through "open" competitive reactions. Joint inventiveness allows barriers to be overcome in conditions of distributed risk. The second tool (Innovations) reflects the innovative actions of firms, containing "hidden" reactions to changes on the market in relation to the brand — instead of to mass markets. What is most important here is the synchronisation of changes in the design of the business model (it should be adapted to the human resources and to their competences), and brand decisions should be tailored to the target markets. Digital "points of contact" used to take down the emotional experiences with the brand are of immense importance here, particularly in the case of firms with a high degree of digital maturity. Co-creation reflects the firm's collaboration with its own clients in the development of new products. Open innovation can also be used because innovativeness is a customer-oriented process and its value is co-created with selected customers. In its pure digital form, it occurs as

avatar-based marketing. The third tool in this model is learning and skills. The dynamic development of creative competences in line with the prevailing business model and the management decision-making process are of paramount importance here. The 3A Arrows (Activation — Adjustment — Anticipation) illustrate the stage of conducting digital transformation (Table 3).

During active marketing, the business processes and activity are enriched by the interactivity aspect. It has not been incorporated into the business model yet, moreover, it is perceived as a cost enhancing factor which should be limited as far as possible — especially in companies that have adopted a cost-based strategy. Critical areas requiring the manager's attention include: resources, market efficiency, data access, and the relation of cost to value obtained.

Table 3. Stages of digital transformation in Marketing 4.0

Stages of digital transformation	Integration in marketing management	Concentration on marketing strategy	Approach
Active	Intuitive interactivity	To maintain current position on the market	Static
Adaptive	Integrated interactivity	To change the position on the market of the product	Dynamic
Anticipating	Integrated prospective interactivity	Re-marketing (redesign and change)	Active

Source: van Kessel, P., and Allan, K. (2014). "Get ahead of cyber crime". EY's Global Information Security Survey, Ernst & Young.

Enterprises anticipate the upcoming changes within prepared scenarios or by implementing dynamic planning and cascade management. At this stage, companies are ready to act swiftly and react in a sustainable manner, performing interventions. On C level, the fact that there are changes is seen as the basis of business and digital skills become a part of the dynamic decision-making process. This facilitates taking smooth and swift

preventive actions and ensures response mechanisms. At this stage, cooperation is now a necessity as it assures a greater awareness among organisational partners, the supply chain, as well as the ability to exert an influence and learn from experiences within the entire ecosystem.

## Scientific research methodology

The following research questions were defined for empirical study purposes in anticipation of the logic of the  $D_3I_2$  conceptual model: 1) An analysis of social media use by the Millennial generation; 2) an evaluation of the attitudes presented by SMEs towards the incorporation of information technology into their current management practices; 3) determining the implementation possibilities of Marketing 4.0 by promoting a flexible approach to the organisation of marketing actions.

### The qualitative phase

Qualitative research involved in-depth interviews with experts, marketing managers, focus group discussions, and an analysis of the content to identify the most important key areas to enhance the competences required by Marketing 4.0. Five in-depth interviews with experts were conducted within the study, followed by two brainstorming sessions. Four focus group interviews were also carried out with employees of information and communications technology companies. A content analysis of the publications compiled from specialist blogs and posts on websites was also performed. In effect, an outline of the conceptual model was formulated, which was then developed further during a series of workshops with representatives of companies operating in highly-advanced knowledge-based industries.

### Quantitative Phase

An empirical analysis was performed based on the data collected in two web surveys. LimeSurvey was used to collect and analyse the data in both surveys.

The first survey consisted of three parts. The first part focused on the main characteristics of internet behaviour among representatives of the Millennial generation. The questions in the second part were used to gather information on the use of social media and to gain knowledge on attitudes towards the most popular social media platforms. The third part centred on attitudes towards mobile applications. A non-random sampling method was used to select the sample. A link to the online survey was disseminated on social media and using e-mail. The sample of persons participating of their own accord totalled 458 respondents. The data was collected in May 2017.

The second survey was used to collect data on managers of SMEs. The survey consisted of three parts and demographic information on the respondents. The first part was devoted to the market orientation of entrepreneurs. In the second part, the survey focused on the strategies of marketing management of firms. The third chapter investigated the attitudes of management boards of the analysed companies in terms of the incorporation of information and communication technologies in the marketing management practices applied by them.

## Results and discussion

### Social media attitudes among the Millennial Generation

Millennials use the internet on a daily basis — mainly to collect information (72.62%), followed by using it for entertainment (69.68%) and lastly for their work-related reasons (55.7%).

Millennials also use the internet for other activities like doing the shopping, downloading music and films, as a study tool, and to communicate with family and friends.

When it comes to social media, the vast majority of respondents (73.8%) have been using social media for more than four years, 12.6% — for 2 to 4 years, and 7% — for 1 to 2 years. Only 3.9% of the respondents have been using social media for less than one year.

Generation Y most readily uses Facebook (90.89% of respondents use it

every day), followed by Google+, YouTube, and Instagram. The results can be interpreted that Facebook is the most popular social network for the analysed cohort.

Table 4. Frequency of daily social media usage, in %

	Less than 1 hour	1-2 hours	2-3 hours	More than 3 hours	No use
Facebook	14,5	25,9	20,3	37,0	2,2
Google+	43,1	10,9	5,1	3,6	37,3
Twitter	13,6	3,6	2,7	1,2	78,9
Instagram	24,5	6,3	3,6	3,4	62,2
LinkedIn	13,6	1,7	1,5	0,7	82,6
YouTube	26,2	22,0	18,2	16,5	17,2
Pinterest	11,4	2,7	1,2	1,9	82,8
Vbox7.com	36,8	13,1	5,3	4,8	40,0

Source: Own study.

Facebook's leading position is undisputable. For 59.8% of respondents, Facebook was the first social community medium where they registered. For almost 70% (66.8%), Facebook is the preferred social networking service.

About half of the respondents (47.6%) who have a Facebook profile have over 400 contacts, and the overwhelming majority of Google+ users (71.5%) have less than 200 contacts. Facebook contacts are generated mainly by friends, work colleagues, school friends, family and distant acquaintances. Interestingly, 35.3% of respondents consider their "true friends" to comprise less than 25% of their Facebook contacts. And 24.9% of respondents stated that a small number of people from their contacts are their "true friends".

A more detailed analysis was conducted in relation to the way respondents perceive and assess Facebook and Google+, that is, social media, who were indicated by the persons in the sample as the most popular. Millennials use Facebook for completely different reasons than Google+. 74.6% of respondents use Facebook always for fun and entertainment. Whereas 78.6% of respondents use Google+ always for work and to look up information (71.4%).



Facebook clearly outperforms Google+ in terms of real-time communication and getting feedback. Almost the same outcome was obtained in a comparison of their performance in terms of the following indicators: ease of two-way communication, personalisation, and page orientation. Google+ scored higher in relation to the following indicators: work speed, navigation, promptness of response, and perception of active control.

Table 5. Responses to marketing actions, in %

Ready to ...	Definitely not	Not	Neither yes, nor no	Yes	Definitely yes	Don't know
...Like a FB profile of a company recommended by a friend	5,4	17,1	12,3	38,3	14,4	12,6
...Take an interest in a FB profile of a company liked by a friend	5,1	18,9	15,0	40,7	9,0	11,4
...Buy a product/service through a FB page of a company liked by a friend	14,4	25,1	17,7	27,2	4,8	10,8

Source: Own study.

The following two research hypotheses were introduced:

- That there is a correlation between the duration (counted from the first registration, time expressed in years) and the intensity (measured by the number of hours spent per day) of social media usage;
- That there is a link between the intensity (expressed in the number of hours spent per day) of social media usage and the number of contacts held.

The above hypotheses were tested using the chi-square test for the most popular social media: Facebook, Google+, and YouTube. All the hypotheses were confirmed ( $p = 0.0000$ ). Cramer's V coefficient suggests the presence of a moderate correlation between the correlation coefficient, which ranges from 0.325 to 0.605.

Several questions concerned the impact of the marketing actions of enterprises conducted through Facebook (Table 5). A similar percentage of respondents is willing to like (53.7%) and pay attention (49.7%) to FB profiles of companies liked by a friend, but 39.5% do not want to purchase products or services from a company whose FB profile was like by a friend.

The communication impact of the marketing actions of firms is measured by assessing the following three hierarchical stages of the marketing communication process: awareness, intention of buying, and the purchase itself. Over half of respondents (64.4%) noticed the advertising on Facebook. An intention of buying the product or service advertised on Facebook was revealed by 46.2% respondents. The percentage of respondents who bought the advertised product or service in this way totalled 21.4%. After calculating the transfer coefficients, the following results were obtained: coefficient of the revealed awareness of the intention of buying (0.297) and of a completed purchase (0.06).

Millennials have a positive attitude to mobile applications. Over 80% of respondents (82.5%) use mobile applications several times a day, mainly to communicate, listen to music, or watch films, as well as to play games. Easy access to social media and time-savings are the most important perceived benefits that are derived from using mobile applications. Easy access to social media thanks to mobile applications combined with the popularity of Facebook gives substantial marketing opportunities to companies (e.g., mobile phone operators who provide unlimited access to Facebook or WhatsApp in certain bundled services). Concerns about safety are an obstacle to downloading mobile applications as respondents want to be certain that the application source can be trusted.

#### **SME attitudes towards the implementation of information and communication technologies in their current marketing management practices**

These attitudes were assessed in three aspects: the capacity to implement changes, the desire to incorporate information and communication technologies to ongoing management practices, and the use of social media for marketing purposes.

### *1) The ability to change*

The dominant strategy (51.2%) among the sampled SMEs is focus on growth and improvement of their competitive position. The growth strategy requires continuous development combined with a radical (sometimes destructive) change, which usually comes during the transitional periods in the life cycle of a company. One third of respondents (29.3%) consider their current strategy to be survival and maintaining a competitive position. Over half of the analysed firms (58.5%) are implementing a strategy for change, focusing on the "product — costs — investments" relationship. 31.7% of SMEs are cultivating the "product — market" tandem, and a mere 9.8% are concentrating on the "market — technologies" relationship. The managers who were our respondents pointed out their intention to integrate a strategic cost-based approach with certain marketing actions in target markets, which is a positive tendency. Unfortunately, most SMEs (40%) are trying to cut the unit costs of a product instead of heading towards product differentiation (17.5%), which would be more appropriate when placing a strategic emphasis on the "product — market" relationship. Most of the studied firms are trying to execute their marketing strategies basing mainly on internal resources (57.9%), adapted external resources (39.5%) and standardised internal resources (2.6%). These results suggest that an inner conflict exists in enterprises — between the hidden desire to continue existing practices and behaviours and the declared desire to implement innovations or perform transformations. This contradiction affects the organisational culture, especially the sentiments in the company.

Hence, the strategies for implementing change usually increase the levels of stress in organisations, especially in relation to security issues. People feel uncertain about the prospects for the company's survival (corporate security), financial stability, and their own duties resulting from the functions held by them. Such attitudes lead to a strong reluctance to changes. As mentioned above, the human factor may turn out to be critical in relation to the digital transformation strategy.

The demographic profile of respondents illustrates that 77% of them work in SMEs (in enterprises with less than 250 employees).

## *2) Readiness to incorporate information and communication technologies in business activities*

A strong majority of respondents have access to a desktop computer and/or laptop at work. 77% of respondents have been using computers and/or information and communication technologies for over five years.

Information and communication technologies are mainly used to communicate using e-mail, followed by communication using social media, and to support various business activities and processes. This is how respondents prioritised the perceived benefits of incorporating information and communication technologies into business-related actions — from the most to the least important: 1) communication, 2) information, 3) novelties, 4) technologies supporting business, and 5) education.

Two sets of managerial competences were also subject to assessment within the study (Table 6).

The competences considered to be most important were knowledge and experience in sales, merchandising, setting of goals, and cost-benefit analysis. Areas of crucial importance were deemed to be the ones that are most important to implement Marketing 4.0, namely: product innovation and technology, budgeting for marketing, marketing communication, investment value and shareholder value. From the perspective of the external competences of the studied firms, marketing analyses, corporate governance, and state regulations were considered to be critical.

Unfortunately, lack of digital literacy was also included on the list of important competences by the respondents (Table 6). Since the levels of investment in digital competences vary significantly among the firms of different digital maturity, it can be concluded that the analysed SMEs are in the early stages of their digital path. The same can be said of the digital competences of their leaders.

## *3) Social media usage for marketing purposes*

Table 6 summarises the attitudes of managers towards the incorporation of social media in their business practices

Table 6. Frequency of daily social media usage (in %)

Message	Facebook	Twitter	LinkedIn	YouTube	Google+
Our company doesn't use these social media and we are not planning to use them in the future	45,7	76	62,4	68,8	60,2
Our company doesn't use these social media but we are planning to use them within the next year	13,8	10	19,4	16,1	20,4
Our company uses social media	40,4	8	18,3	15,1	19,4

The social media most commonly used by SMEs — without distinguishing their purpose — include: Facebook (20.5%), LinkedIn (12.4%), Google+ (9.5%), YouTube (7.25%), and Twitter (4.5%). As shown in Table 7, companies use social media for the following purposes:

1. To obtain visibility and generate customer awareness;
2. To communicate with different types of recipients and foster cooperation;
3. To develop contacts and build relationships as well as to pursue various short-term marketing goals.

Table 7. Social media usage according to stated objective, position in ranking

Objective	Facebook	Twitter	LinkedIn	YouTube	Google+
Communication/collaboration	3	1	1	2	2
Customer services	7	—	5	3	7
Gaining visibility and generating awareness	1	1	2	1	1
Getting new clients	5	—	4	3	5
Increasing revenues/profits on sales	6	—	—	3	7
Marketing	2	2	3	2	3
Establishing contacts and fostering relationships	4	—	3	3	4
Recruitment of staff	8	—	4	—	7

Respondents associate social media mainly with emerging opportunities, speed (quick access to information, keeping in touch with colleagues and contractors, the possibility of reaching a global audience),

communication — international and other, creating a network, transparency, information sharing, and making life and work easier.

The position was calculated on the basis of the percentage of positive responses; data below 5% was not taken into account, the second and third place differ from 1% to 2%.

### **Opportunities for development of a flexible marketing organisation**

Despite enterprises having reached a certain level of digital maturity, there are certain key (interventional) areas that they should focus on to harness the full potential of digital transformation.

The main area of intervention are clients, who are the objective of the company. Digital consumers and Millennials require a number of specific marketing actions, mainly through cloud, social media, and mobile-application communication, with the knowledge that "old" customers would prefer a traditional way of communicating. As for products and services rendered by a company, digital consumers prefer it when the offers are fully and even individually tailored. Companies with a high level of digital maturity have adopted intelligent personalisation as their strategy of action. Clients expect communication with a company about its services to be possible 24/7 and in real-time.

The very fact that they use the internet and social media to acquire information or for entertainment leads us to believe that clients perceive every personal emotional experience obtained by way of interacting with a company as positive.

The changing motivation of digital clients explains the development of empirical marketing strategies. Enterprises still at the early stages of digital maturity continue to rely on a profitability-based marketing strategy. Companies that are not very digitally mature focus on one or several intervention areas (see. Fig. 1). Firms at a high level of digital maturity use technologies incorporating social media, mobile applications, analytics, and cloud computing almost to the same degree. Irrespective of the level of digital maturity, the right combination of outbound and inbound marketing should be maintained in enterprises.

Figure 1. Marketing 4.0: key intervention areas



Source: own elaboration

Taking into account the issues described above, actions within Marketing 4.0 should correspond to the following characteristics of Collaborative Innovation Network defined by Gloor: community type of sharing, high degree of interactivity, and high degree of connectivity (many-to-many).

### Conclusions, limitations, implications for future research

The changing role of information and communication technologies used for marketing purposes poses important challenges to marketing researchers and practitioners. Our study clearly showed that marketing

management in SMEs is in the process of profound transformation, which is associated with widespread restructuring processes, a shrinking talent pool, and an evolution in the perception of marketing parameters. As it regrettably turned out, even medium-sized enterprises are managed like family businesses, which leads to a false perception of their strategic marketing intentions. Companies want to embark on the road towards change to improve their competitive position but are focusing on the wrong developmental aspects like costs and investments and relying mainly on their own internal resources. The latter two factors are typical of organisations that are centred on maintaining their organisational stability and on a system of checks, where the timescale does not exceed 1–2 years. The fact that enterprises, during the initial phases of their life cycle, rely mainly on their own resources has resulted in a specific looped self-learning scheme instead of a new impetus for continued development. Companies are still going from the activation phase to the adjustment phase — apart from those that are functioning on an international scale or IT enterprises. The dynamic macro-environment is forcing them to open up their own systems and to confront everything that is typical of closed systems, that is, with a reliance on internal resources.

In order to survive and grow in the new digital age, enterprises will have to show courage and stand their ground amidst adversities. They should take the following key issues into account on the way towards full digital transformation: 1) explore all the possible alternatives and determine the right marketing indicators (design stage) to set the goals and priorities for digital transformation; 2) involve the management of the company by developing digital strategy and marketing, redesigning the current business model (direct stage) in line with the level of digital maturity of the company, 3) apply the existing knowledge and skills held to implement the chosen strategy (development stage). Success will depend on the right combination of the undertaken interventions, incorporated innovations, and available talents. What is needed is a transformative way of thinking where searching, creativity, and an innovative approach is valued, thanks to which Marketing 4.0 can successfully be integrated into the organisational practice of an enterprise. Marketing experts and managers must be open and be able to react appropriately to both market opportunities and to threats and not be afraid of taking risks.



## Bibliography

1. Achrol, R.S., and Kotler, P. (1999). Marketing in the Network Economy. *Journal of Marketing*, 63, s. 146–63.
2. Andrew, J., Haanas, K., Michael, D., Sirkin, H., and Taylor, A. (2009). Innovation 2009: making hard decisions in the downturn. BCG Report. *The Boston Consulting Group*, kwiecień.
3. Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, 33 (4), s. 825–845.
4. Browning, R., Duffy, J. & Linde, K. (2008). How to build an agile foundation for change. *PwC Report*, luty.
5. Carbone, F., Contreras, J., Hernández, J. & Gomez-Perez, J.M. (2012). Open Innovation in an Enterprise 3.0 framework: Three case studies. *Expert Systems with Applications*, 39, s. 8929–8939.
6. Catlin, T., Scanlan, J. and Willmott, P. (2015). *Raising your Digital Quotient*. McKinsey Quarterly, McKinsey & Company.
7. Dholakia, N., Zwick, D., and Denegri-Knott, J. (2010). Technology, Consumers, and Marketing Theory. In: *The SAGE Handbook of Marketing Theory*. SAGE, s. 494–511.
8. Hardt, M. (1999). Affective Labour. *Boundary2*, 26 (2), s. 89–100.
9. Jara, A.J., Parra, M.C. and Skarmeta, A.F. (2012). *Marketing 4.0: A New Value Added to the Marketing through the Internet of Things, Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS)*, 2012 Sixth International Conference Palermo, s. 852–857.
10. Kane, G.C., Palmer, D., Phillips, A.N., Kiron, D. and Buckley, N. (2015). Strategy, not technology, drives digital transformation. *MIT Sloan Management Review*, Summer, pozyskane z <http://sloanreview.mit.edu/digital2015>.
11. Knorr Cetina, K.D. and Preda, A. (2005). *The Sociology of Financial Markets*. Oxford and New York: Oxford University Press.
12. [Kohler, T., Fueller, J., Stieger, D., and Matzler, K. (2010). *Avatar-Based Innovation: Consequences of the Virtual Co-Creation Experience*. Proceedings of the 43rd Hawaii International Conference on System Sciences.
13. Kotler, P., Kartajaya, H., Setiawan, I. (2017). *Marketing 4.0*. MT Biznes.
14. Kozielski, R. (2013). Klient 3.0 czy Marketing 3.0. *Handel Wewnętrzny*, (3).
15. Luggen, M. Technology and innovation management in new technology-based firms. Dissertation, Diss. ETH No. 15400, 2004, Swiss Federal Institute of Technology Zurich.
16. *NIST Roadmap for Improving Critical Infrastructure Cybersecurity*, February 12, 2014 dostępne na: <http://www.nist.gov/cyberframework/upload/roadmap-021214.pdf>, ostatnie wejście w dn. 15.09.2015.
17. Nowacki, F. (2014). Marketing 4.0 — nowa koncepcja w obliczu przemian współczesnego konsumenta. *Marketing i Rynek*, 6 (21), PWE S.A., s. 11–19.
18. Piercy, N. (1985). The Impact of New Technology on Services Marketing. *Services Industries Journal*, 4 (3), s. 193–204.
19. PricewaterhouseCoopers. 11th Annual Global CEO Survey (styczeń 2008).
20. Sznajder, A. (2013). Wpływ mobilnej technologii informacyjnej na działalność marketingową przedsiębiorstw. *Gospodarka Narodowa*, s. 7–8

21. Tkaczyk, J. ( 2007). *Word-of-mouth w służbie marketingu*. „Innowacje w marketingu 4.0”, Uniwersytet Gdański Wydział Ekonomiczny.
22. van Bommel, E., Edelman, D. and Ungerman, K. ( 2014). *Digitizing the consumer decision journey*. [online] McKinsey Company. Dostępne na: <http://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/digitizing-the-consumer-decision-journey> [pobrane 18 marca 2016].
23. van Kessel, P., and Allan, K. (2014). *Get ahead of cyber crime*. EY's Global Information Security Survey, Ernst & Young.
24. Vassileva, B. ( 2006). Organisational evolution and strategies for change of Bulgarian firms. *Journal of Organisational Transformation and Social Change*, Vol. 3 No 2, s. 157–172.
25. Visser, J., Field, D., and Sheerin, A. ( 2015). *The Agile Marketing Organization*. The Boston Consulting Group, październik.

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