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CORPORATE SOCIAL RESPONSIBILITY IN THE CONTEXT OF DIFFUSION OF NEW TECHNOLOGIES IN MODERN ECONOMY

SPOŁECZNA ODPOWIEDZIALNOŚĆ BIZNESU W KONTEKŚCIE DYFUZJI NOWYCH TECHNOLOGII WE WSPÓŁCZESNEJ GOSPODARCE

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Summary: The growing interest of theorists and practitioners in managing CSR concept is undoubtedly a result of many socio-economic, ethical and environmental challenges faced by modern enterprises. The enormous progress in information technology and telecommunication technology observed over the course of several years has fundamentally changed the functioning of all participants in economic processes, giving rise to the so-called fourth industrial revolution. The aim of this article is to present selected challenges faced by enterprises related to the creation and dissemination of information and communication technologies (ICT) in the context of CSR. In the article the author's attention was focused on the characteristics of CSR concept and the presentation of positive and negative consequences of ICT solutions applied by enterprises (e.g. Internet of Things – IoT, Big Data). The basis for the discussion presented in the article was domestic and foreign literature studies.

Keywords: Corporate Social Responsibility, ICT technology, Big Data, Internet of Things

Streszczenie: Rosnące zainteresowanie teoretyków oraz praktyków zarządzania koncepcją CSR wynika niewątpliwie z wielu wyzwań o charakterze społeczno-gospodarczym, etycznym oraz środowiskowym, przed którymi stoją współczesne przedsiębiorstwa. Obserwowany na przestrzeni kilkunastu lat ogromny postęp w informatyce oraz technologii telekomunikacyjnej zmienił w sposób zasadniczy funkcjonowanie wszystkich uczestników procesów gospodarczych dając początek tzw. czwartej rewolucji przemysłowej. Celem niniejszego artykułu jest ukazanie wybranych wyzwań stojących przed przedsiębiorstwami, związanych z tworzeniem i rozprzestrzenianiem technologii informacyjno-komunikacyjnych (ICT) w kontekście społecznej odpowiedzialności biznesu. W artykule uwaga autora skupiona została na charakterystyce koncepcji CSR oraz ukazaniu pozytywnych i negatywnych następstw stosowania przez przedsiębiorstwa rozwiązań z zakresu technologii ICT (m.in. Internetu rzeczy – IoT, Big Data).

Słowa kluczowe: społeczna odpowiedzialność biznesu, technologia ICT, Big Data, IoT.

1. Introduction

The modern economy is supported by a number of dynamically developing new technological solutions that are applied in almost every area of the economy. ICT technology, based on IT and communication solutions, plays a particular role in the process of economic transformation. The increasing impact of information and communication technology on the functioning of modern enterprises has increased decision-makers' attention to the effects of business activity, especially in the socio-cultural, economic and environmental areas.

The implementation of new ICT solutions has a noticeable impact on the functioning of all economic system participants, which is a background for the creation of new, not fully understood and explained phenomena that are faced by Corporate Social Responsibility. The aim of this article is to present selected challenges faced by enterprises related to the creation and dissemination of information and communication technologies (ICT) in the context of CSR. The article consists of the introduction, a part devoted to the essence of CSR, characteristics of ICT and its application in the modern economy, description of Big Data and its use in the activities of enterprises in the context of corporate social responsibility, final conclusions.

2. The essence of Corporate Social Responsibility

Corporate Social Responsibility is currently the source of an interesting discourse that has a noticeable impact on both theory and practice of managing a modern enterprise. The concept of Corporate Social Responsibility refers not only to the change in the management of modern enterprise but also to the perception of the role of enterprise in modern economy and society [Aluchna 2017, p. 55].

The unambiguous definition of CSR is problematic, as many authors highlight various aspects of CSR in their definitions. This diversity was analyzed by A. Dalhsrud by juxtaposing different definitions of Corporate Social Responsibility. Based on 37 definitions of Corporate Social Responsibility identified, he concluded that the following elements are most often included in them: responsibility towards stakeholders, social responsibility, economic responsibility, volunteering and environmental responsibility [Dahlsrud 2008].

In the literature there are many concepts of Corporate Social Responsibility taking into account its multidimensional character. L. Zbiegień-Maciąg defines CSR as a "moral and legitimate duty towards the whole environment, both external and internal, surrounding each enterprise" [Zbiegień-Maciąg 1997, p. 48]. According to another definition, Corporate Social Responsibility is the voluntary acceptance of obligations towards stakeholders by economic operators, going beyond the applicable law in order to solve social problems at a given stage that cannot be solved without cooperation and participation of the economic world, while avoiding illegal and unethical behaviours [Filek 2013, p. 127]. A. Sokołowska defines Corporate

Social Responsibility as the "enterprise's economic, legal, ethical and philanthropic obligations towards external and internal social groups which may be the subject of deliberate and rational as well as institutionalised operation of the enterprise, which is a source of competitive advantage" [Sokołowska 2013, p. 10]. The World Business Council for Sustainable Development defines CSR as the "commitment of business to ethical behaviour and contributing to economic development, while improving the quality of life of the workforce and their families as well as the local community and society at large" [WBCSD 1998]. The International Standard ISO 26000 defines Corporate Social Responsibility as the responsibility of an organisation for the impact of its decisions and actions on society and the natural environment, through transparent and ethical behaviours that contribute to sustainable development, including health and social well-being. The actions undertaken take into account the expectations of stakeholders, they comply with the applicable law and are consistent with international standards of conduct as well as are integrated with the organisation's activities undertaken within its sphere of impact. Key areas and issues in the ISO 26000 standard are: organisational governance, human rights, labour practices, the environment, fair operating practices, consumer issues, community involvement and development [PKN 2010].

The analysis of the definitions of CSR mentioned above shows that they contain common elements. What most of the above definitions have in common is the reference to stakeholder theory, voluntariness and responsibility towards society and the environment. It is noteworthy that, as described in the literature, CSR has evolved towards the so-called CSR 2.0. In the new approach CSR 2.0 means moving away from the perception of social responsibility from the perspective of an individual enterprise (micro scale) and seeing social responsibility from a broader perspective (macro scale) understood as an impact on the community, not only local but global, as well as looking at the impact of the enterprise on the whole natural environment and not only on its part [Stefańska 2013, p. 207].

3. Information and communication technology and its application in modern economy

The speed of changes in the environment of enterprises and, in particular, the dynamic development of information and communication technology (ICT) has triggered a process of profound transformations, covering a range of behaviours of contemporary market participants. Technological changes include, above all, the diverse possibilities of using modern communication tools, thanks to which the enterprise is able to communicate in real time with precisely selected stakeholders.

The economy of the 21st century is strongly supported and driven by a variety of information and communication technologies that can be found in almost every area. Intensive use of various technological solutions by enterprises, including the Internet or information and communication technologies, has contributed to raising

key questions concerning the course and effects of socially responsible actions and behaviours supported by ICT.

A component of ICT technology, which is a platform for information exchange, is a global network, enabling communication between people and different devices without human intervention. The Internet, defined as a global network of connected computers, has been fundamentally changing all areas of human activity for several decades. Initially, the one-sided transmission of information was replaced by interactivity manifested through the creation of Internet content by all its users. Currently, the Internet and its growth is supported mainly by the activity of machines and devices capable of communicating in the Internet, and thus generating information without human involvement.

ICT (Information and Communication Technologies) is defined as the whole of devices (computers and computer network), software, applications and other technologies used for the comprehensive use of information [Mazurek 2012, p. 73]. ICT technology covers a wide range of all technologies for manipulating and transmitting information. The conceptual scope of ICT technology includes all communication media (Internet, wireless networks, bluetooth networks, fixed-line, mobile, satellite, audio and video communication technologies, radio, television, etc.), media enabling the recording of information (portable memory, hard drives, CD/DVDs, tapes, etc.), information processing equipment (personal computers, servers, clusters, computer networks, etc.) and a whole range of IT applications and complex IT systems enabling processing and transmission of data at a higher abstraction level than the hardware level [Ministerstwo Infrastruktury 2013].

A concept based on the ability to communicate, exchange, process and collect data by devices only via a computer network without human intervention is called the Internet of Things. The Internet of Things concept was first introduced in 1999 during a presentation for Procter&Gamble company by Kevin Ashton [Ashton 2009]. A. Działdowski defines IoT as "a collection of all devices that are capable of network communication and which can process data transmitted over the network to some extent as well as are uniquely identified in the network" [Działdowski 2014, p. 34]. According to Cisco Internet Business Solutions Group, the number of devices connected to the network in 2003 was 500 million. In 2010, a huge increase in the number of smartphones and tablets resulted in a total number of 12.5 billion devices connected to the network, while the total number of devices connected to the network in 2020 is expected to reach 50 billion [Evans 2011].

The Internet of Things, its scope and applicability permeate almost every aspect of everyday life. IoT creates intelligent infrastructure that can contribute to improving people's lives, making implementation of tasks more efficient, improving security and reducing costs. IoT applications can be found in many areas of everyday life, including the following [Kokot, Kolenda 2015]:

- environment (e.g. monitoring the condition of ecosystems and estimating the likelihood of natural disasters, control of air pollution, protection of wildlife),

- water management (e.g. monitoring of water resources, water use and protection, protection against floods),
- industry (e.g. machine diagnostics, fault detection system, monitoring of operating conditions),
- production (e.g. control of production lines, control of stock levels),
- transportation (e.g. organisation of transport, localisation of transported goods, monitoring the conditions under which goods are transported and stored),
- energy (monitoring of individual consumption and energy production and use processes),
- cities (pedestrian and road traffic organisation, diagnostics of road traffic safety, monitoring of noise and lighting level),
- buildings (supervision of external and internal conditions of buildings),
- apartment (media consumption control, monitoring the safety of the house and its users),
- health (monitoring of health, physical activity, patient safety),
- life (solutions for convenience and security – support of purchasing processes, weather monitoring, protection of personal rights).

It can be assumed that over the next few years, technological progress will lead not only to the need to redefine business processes but also to a new perception of human behaviour and interactions between people and electronic devices. The context of the development of the Internet and IoT is a new challenge for CSR, forcing the question of the social responsibility of ICT in the 21st century.

4. Use of Big Data in enterprises' operations in the context of Corporate Social Responsibility

Corporate Social Responsibility is an important and topical issue for discussion concerning the processes of shaping socially responsible activities and technological solutions, the beneficiary of which is the whole society. Modern enterprises that create and use ICT have an impact on a broadly understood group of stakeholders. Stakeholders also exploit the opportunities offered by ICT to interact and establish links with businesses and other market actors. ICT technologies facilitate the dissemination of information and knowledge which, using the fast-growing Internet, mobile telephony and other electronic means of information transmission, promotes integration processes. According to a study conducted by the "We are social" agency, in January 2017 there were 3.773 billion Internet users, while 2.789 billion people used social media. In 1 year the number of Internet users increased by 10%, while the number of social media users increased by 21% [Kemp 2017]. Data play a special role in ICT. The main source of data introduced to the Internet in recent years were mainly people, while in the near future smart devices (IoT) connected to the network will be responsible for creating most of the information in the Internet. Within a second, the global network is growing by about 30 GB, creating a huge amount of new data called

Big Data [Kostro 2016]. Big Data is a term used for data sets that are simultaneously characterized by large volume, diversity, real-time stream flow, variability, complexity, and require the use of innovative technologies, tools and IT methods to extract new and useful knowledge from them [Tabakow et al. 2014, p. 141].

The large archived data sets result in numerous opportunities and threats that should be analysed from the standpoint of CSR. Big Data, an unprocessed data environment, offers unlimited possibilities of its processing and systematization which, with proper use of the potential contained in it, allows the data to be used in many ways. Effective data selection gives unlimited possibilities of supporting business processes. These activities may contribute to the implementation of CSR strategy by enterprises in the following areas: ecology (optimisation of production processes affecting the reduction of energy and raw material consumption), economics (efficient use of resources contributing to the reduction of costs of business activity), society (adaptation of the company's activities to social expectations affecting the strengthening of ties and the image of the company).

The dynamically developing trend in IT technology is currently the "cloud technology" allowing for data archiving and processing on the external infrastructure of the provider. D. Dziembek defines cloud computing as "a model of distribution of ICT solutions which, being accessible to consumers over the network (most often the Internet), are characterized by high availability, flexibility and reliability and are paid for taking into account actual consumption of resources (use of the service)" [Dziembek 2016, p. 727]. Cloud computing enables storing and accessing data without limitations. The only condition for using cloud computing services is to have an electronic device with Internet access, thanks to which you can enter or view data. According to P. Płoszajski, cloud computing technology is becoming important for enterprises and society as a whole, however, the following paradoxes are associated with it [Płoszajski 2016, p. 22]:

- the more the cloud will be 24/7 (always enabled) and the more capacity it will have in terms of the services and applications in operation, the more invisible it will be for users,
- the more invisible it is, the more we become dependent on it,
- the more we are dependent on it, the more severe the disconnection from it will be (the amputation effect),
- the more we become dependent on it, the more the cloud becomes an extension of ourselves, i.e., our memory, social contacts, notes, memories, our preferences, lifestyle, values, beliefs and opinions.

The aforementioned cloud technology paradoxes allow us to reflect on the consequences of our dependence on and, in particular, disconnection from the cloud computing, which may be reminiscent of the loss of part of our body.

More and more enterprises are looking for new ways and tools to make effective use of information available in real time. Large data sets and the technologies associated with their processing pose a number of risks. Data on the behaviour of

Internet users collected online can also contribute to surveillance and invasion of their privacy. Different organisations may be tempted to use network users data without their knowledge and acceptance. Today's technology makes it possible to track users while they are online and offline. IoT is responsible for generating a large amount of information through various devices monitoring the behaviour of individual persons or groups (sensors, detectors, cameras, microphones). Data on consumer preferences, leisure time and lifestyle gives real possibilities to influence and control human behavior [Aniszewska-Banaś 2016, p. 38]. Controlling perception and influencing consumers give enterprises real power over consumers, which raises questions about compliance of these activities with ethical principles and legal regulations. Large amounts of data collected on the Internet may also be subject to intentional hacking attacks aimed at its illegal acquisition and use. More and more sophisticated attempts by cybercriminals to obtain information stored on servers also make it socially responsible to ensure effective protection of data stored on servers and prevent its theft.

5. Conclusions

The scope and dynamics of changes taking place in the modern world supported by diffusion of knowledge as well as information and communication technology have a noticeable impact on the broadly understood functioning of economic entities and society as a whole. Modern technological solutions used in many areas of everyday life play an important role in the life of every person. Innovative products and services resulting from the development of industry 4.0 change the world in which we live, in particular, the quality of life, the natural environment and the way in which whole communities operate. Speed and the multitude of transformations taking place in the modern world through, e.g. the technological revolution raises key questions concerning the positive and negative effects of the changes taking place. The main role in the social responsibility for the proper course and implementation of modern ICT services and tools is played not only by the entities that are their users but above all their co-creators. The assumptions and principles of the CSR concept may be threatened if the emerging opportunities offered by ICT are misused. With the undoubted benefits associated with the progress in the field of information technology and telecommunications, the very process of shaping new technological solutions and their implementation is extremely important. It should be reflected in a professional approach to educating users of ICT services and tools, creating legal regulations that keep up with the changes as well as through effective fight against cyber threats which should be carried out not only by actively reacting to the existing difficulties but above all by preventing them from occurring.

The problem of CSR in the context of diffusion of new technologies in modern economy concerns the dynamic development of technological solutions in terms of its positive and negative effects. In relation to the content presented in the article, it

should be emphasized that the application of CSR principles by modern organisations will be a challenge both due to the dynamic development of new ICT technology and the emergence of new socio-cultural phenomena. The content presented in this article shows selected benefits and threats resulting from the application of information and communication technologies by enterprises (in particular Big Data and IoT) in the modern economy. The issues raised by the Author may be a starting point for a discussion for the scientific and business communities in the aspect of proper use of ICT in the activities of enterprises in the context of socially responsible activities. Undoubtedly, a major challenge for enterprises in the coming future will be to manage and protect the dynamically growing digital data streams. The issues of Big Data, in particular the protection as well as legal and ethical use of data will constitute an area of further research for the Author in the near future.

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