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Pathologies connected with the work of IT specialist in the organizational system of the company

1. Introduction

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Deserts of the IT specialists in the management of the company are huge. Nowadays it's difficult to imagine the management of the company without support of computer system or the software dedicated to the goals of organization. Computer science is the menial field for others domains of knowledge, business, art, etc. The goal of the computers is to help the human in his or her work in the domains, which very often have nothing in common with computer science. To avoid misunderstandings on the line IT specialist – the recipient, IT specialists who are able to realize specialized tasks are educated on many universities. In this way, the new micro-specializations such as „computer science in medicine", „computer science and econometrics" or just „computer science in management" occur. The graduates of the last specialization are able to link the knowledge from the field of creation and usage of modern information technologies with the knowledge from such domains as the logistic management or management through the project.

The menial role of the IT specialists in the management of the company was described both in Poland and in the world, however, there is small number of works describing the problems of the IT specialists in work in the companies, especially dangers, which they can meet while working with the modern information technology inventions. This article will describe exactly this problem and the possibility of help, which can be available for the organizations to minimize these dangers.

2. Computer science and management

At the beginning of the 21st century the digitalization of life became the social fact. This fact has influence both on the applied sphere of life, what can be observed in the developing of the abilities of using the inventions of modern information technology, and the mental and structural sphere of the societies (transfer from the analogue society to the digital society).
In the digital environment the basis of the management and communication system are digital platforms and information technologies. The influence of digital environment through new technologies is also visible in the change of the management of companies. Undoubtedly, the positive aspect of such influence is the processes of self-controllability of the „modernizing" himself or herself employee. It has the reflection in the growth of self-autonomy through the possibility of taking decision independently, what were earlier reserved only for the managing staff.
Traditional management is reduced to taking decisions assuring the constant development of the organization, connected with the optimal use of the employee, material and capital resources. In the digital environment on the first plan go the resources connected with the social and intellectual information, knowledge, concept and capital. They are resources of never ending possibilities in the range of their reproduction and usage. In the process of management in the digital environment, the network decision processes are, on the one hand, in the hand of the businessmen, managers and employees, on the other hand, in the hands of consumers and recipients. In this way is created the new standard of decision processes, where the basis of the employees' interactions is the system of network dependencies through the social networks and also through the social dependencies in the frames of online networks (Stabryła 2008: p. 397). In the online networks the professionalism, the speed of actions and the knowledge are important. In this case, the effectiveness of such network is evaluated through the results achieved in the work and the position of the company on the market.

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The network character of the management in the digital environment is different from the management in the traditional environment. This way of management makes possible (Haber 2011: pp. 222-223):

- fast rearrangement of the rules of the company organization from the functional approach to the process approach. Thanks to the flexibility of the company and the speed of reactions on the supply and demand signals coming from the different markets in the world the elasticity of the company grows,
- building the business correlations on the basis of loose organizational structures of adhocratic type. Thanks to that the workers can show their abilities on the different levels and grounds,
- treatment of knowledge and education as never ending resources of the company in comparison with the restricted possibility of traditional resources such as capital, ground or the material and technical infrastructure,
- usage of the modern information technologies in the decision processes, what enables overtaking the competition in international and local rivalry about client's market,
- reducing the cycle of organization life to one stage – constant development and success- what is connected with constant development of the methods of the work, raise in the quality of goods and services and expansion of the scale of assortment,
- striving to gain as bigger as possible part of the client's market by attractive process achieved thanks to constant monitoring of the expenses and striving to their maximal reduction,
- usage and dissemination of experienced organizational structures based on its own tradition connected with norms and ethics of conduct.

Computerization and new management systems introduced in the digital environment have big influence on the organizations. The virtual companies (existing in the Internet), companies working on the principles of telecommuting, dealing with retail trade, financial and bank, marketing and promotional, tourist and recreational services, computer companies, etc. are especially susceptible to it. (Barrow 2006: p. 20). The changes in the frame of structure of supply and demand often take place in such organizations. These phenomena are leasing to the obliteration of the established management systems between peripheries and the economic centers.

3. The place and the role of the IT specialists in the organizations

The IT specialists as the occupational category occurred not so long ago. It's difficult to give the precise date when the IT specialists occurred in the

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organizations. For the first time, the specialization called „computer science" came into being in 1962 on the Stanford and Purdue University (http://ai.ia.agh. edu.pl/wiki/_media/pl:dydaktyka:miw:2011:historia_informatyki_v1.1.pdf). From this time on the labor market began occur „the professional IT specialists".

It's difficult to define who the IT specialist is: Is it a person who graduated from computer science studies, or is it a person who works as the IT specialist but who doesn't have computer science education. It is difficult to find the definition describing this professional group in the subject literature. According to P. Hebda and J. Madejski, the IT specialist (Latin informare, - atum – vividly describe) it is "the specialist who has the knowledge and skills concerning the entirety of method of creation, processing and remittance of information among others in technique, economy and genetics. He or she is also specialist taking care about devices and creation, transformation and transmission of data with the usage of programs exploiting information collected in them to the certain actions" (http://gazetapraca.pl/gazetapraca/1,74896,2973501.html). To determine what the IT specialist is doing in his or her job, one should add the adjective, which tells about the discipline in which he or she specializes. The number of professions associated with computer science reach today about twenty different specializations.

Depending on the chosen specialization the IT specialists can work as engineers of computer systems construction and thus they are engaged in: designing, constructing and supervision of the systems (including bank, insurance, and controlling the technological processes). They can also work as designers in the design centers or as engineers of the system service in the counting centers. The IT specialists often work as programmers, administrators of computer networks or webmasters (Czarkowska 2010, p. 294).

As A. Postuła writes, the Polish market of IT services isn't still enough developed. Here we deal with the employee market not with the employer market, thanks to what Polish IT specialists can without restrain move among the organizations. This tendency can be changed when the competition rises among IT specialists, what can be expected in the near future. One should realize that knowledge which is used by the IT specialists in their work is narrow and very specialized and the barriers of access to it in the society are rather high. The IT specialists themselves defend the entrance to the market to protect themselves against rising competition. Most of the IT specialists treat their work seriously and they are truly lovers of their occupation. They treat the tasks, committed to them by the management, personally and perform them with proper care (Postuła, 2010, pp. 48-50).

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The community of IT specialists doesn't create the occupational organization, which will regulate the sphere of their services. There also isn't any association, which could decide who is able to be admitted to the occupation or could impose standards of the work (as it is e.g. in the case of lawyers or doctors). Membership in PTI (Polish IT Association) or PIIT (Polish Chamber of IT and Telecommunication) is free and isn't essential (Czarkowska 2010, p. 15). About this if someone is „in this occupation" or not will decide only state of his or her knowledge and if the knowledge is in given time useful on the market.

The characteristic features of this occupational group are the concentration on the work, which they represent and the common values which they profess. The most important value of the IT specialists' society is to be the competent expert in the performed by themselves work, by what he or she achieves the status of rightful member of the IT community. To achieve this, the IT specialists share the information among each other, they support each other but they also compete in the frame of their occupational skills (Czarkowska 2010, p. 15).

The IT specialists have to broaden their knowledge all the time. To precede the technological progress they have to follow the new trends in their subdiscipline, read the specialist literature, browse the Internet form week to week, and during their work they have to retrain many times, following the modern solutions occurring on the work market. The essential changes in the stock of the IT knowledge take place every 2 – 5 years and to have the ability to work the IT specialists have to take into account the necessity of continuous self-education (Czarkowska 2010, p.15). So it is the occupation for the real hotheads who consciously have chosen this career. This occupation is also difficult, demanding many devotions and directed to the people with special skills. Among the IT specialists the special position can be achieved by the people who can think in innovative way, who are creative and effective in discovering new solutions and crossing the human and technological restrictions.

The IT specialists work above all for their clients and also for other organizational units showing the demand for the IT services. Nowadays, we can see clear division to (Postuła 2010, p. 325):

- IT specialists working in the programming companies, where the prevalent part of the employees are the representatives of one profession,
- IT specialists employed in the companies with other profile than IT, in such companies the IT specialists are the minority of the employees.

Such division determines the relations among the IT specialists with the environment, where in the first case they concern the professional and social role and in the second, organizational.

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It's difficult to imagine the correct functioning of the company management without the IT specialists or the products, which they create on the demands of given organization. IT as the tool of the changes in organization gives the possibility of achieving better results of these changes. Organization in spite of the fact that it is the social system, it has to adjust itself to the requirements and possibilities, which give the modern technological solutions. „Designing the IT system (technical change) and simultaneous adaptive designing the organization (organizational change) serves gaining this strategic aspiration" (http://www.uci.agh.edu.pl/uczelnia/tad/PSI11/art/miejsce_rola_i_zadania_informatyki.pdf). Changes introduced partially are exposed to failure or to the partial success, because they aren't effective or not much effective.

4. The goal of the taken up research

IT specialists and the products of their creativity bring many benefits to the organizations. The work as IT specialist is rich in many dangers, which are associated with long usage by them of inventions of modern technique. The goals of carried out research were as follow:
- diagnosis of pathologies caused by the information technologies among IT specialists,
- pointing the pathogen areas of information technologies in the organizational systems of the company,
- definition of the pathogen aspects of computerization in the company management,
- showing the fears of the IT specialists caused by information technology in the work environment.

170 of IT specialists working in the IT companies from Rzeszow territory were covered in the research. The research were conducted at the turn of 2011/2012 with different research methods and techniques (among others surveys, interviews and analyses of the meet documents). On the given stage of research the verification of data was enriched with the focus research.

Rzeszow was chosen as the terrain of research because the information technology develops here extremely supply. ASSECO POLAND S.A. Company (specializing in the production and development of the software) is in the first ten of the producers of the software in Europe. Rzeszow is bound in the IT companies, what is caused, first of all, by the three biggest universities from Rzeszow (University of Rzeszow, Rzeszow University of Technology, and Higher School of Information Technology and Management), which every

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year „produce" a number of qualified IT specialists who not only are searching for employment in the existing companies, but often set their own companies.

The IT specialists who took part in the research were very young people. The biggest group constituted the people in the age of 20 - 25 (34,7%) and in the age of 26 - 30 (30%). Almost one fourth was in the age of 31 - 40 (23,5%), there was not many people above 40: from 41 to 50 (7,1%) and only 3,5% over 51.

IT specialists are mostly men. Among the examined people were 81,2% of men. There were only 18,8% of women working as IT specialists. Most of the respondents lived in the cities (74,7%). One fourth of respondents lived in the villages (25,3%). Half of the IT specialists were single (50,6%), not much less were married (45,3%). Divorced were only 2,4% and widowers only 0,6%.

In the case of the question about the position almost half of the IT specialists declared that they work on the specialist post (47,1%), one fourth worked as rank and file workers (25,9%), 10,0% was the managers of the team and the same number (10,0%) ticked the answer „other post". 7,1% of the examined people were directors of the IT company.

Most of the IT specialists (42,5%) declared the the period of work in the range from 2 to 5 years. 21,2% of them worked in the range of time from 6 to 10 years. 19,4% of examined IT specialists declared the period of work up to 1 year. 17,1% of IT specialists worked longer than 11 years. So the IT specialists are mostly young people, men, living in the city, and are specialists in the organizations in which they work.

5. The IT specialists in the organizational system – sources of dangers

The work of the IT specialists and the creations of their work (hardware and software) bring many benefits to the organization on different levels of their functioning. The computer tools became e.g. inseparable part of the management systems of organizations and it is difficult nowadays to imagine the organization management without computers (http://www.uci.agh.edu.pl/uczelnia/tad /PSI11/ art/ miejsce_rola_i_zadania_informatyki.pd). The IT specialists themselves during their work with the usage of the computer, Internet, or cellular phone are exposed to many dangers, which sometimes can be dangerous both for their physical and mental health.

One of the most important consequences associated with the excessive usage of the computer are the health ailments such as backbone sickness, illness of eyes or impairment of the general physical condition what is connected with the sitting work and the lack of the movement. As Ch. Lippmann tells, after

years of sitting work at computer, the discs of the backbone can be in such a state as with the workers performing hard physical work (Lippmann 1990: p. 21). Long lasting looking at the screen can cause the sham myopia, because of too big tension of eye accommodation system. After the period of intensive looking at short distance (at the monitor screen) the muscles of the eye aren't able to relax, what causes that the pictures seen from distance are blurry. Consequently it can lead to the permanent deterioration of the eyesight. The often symptom is „the dry eye syndrome", which occurs when the eye doesn't produce enough tears, their composition isn't correct or they aren't spread over the eyeball enough frequently. Because of this, the anoxia of cornea takes place. About 75% of people who spend looking AT the screen more than two hours a day complain to this discomfort while looking at the screen (http://www.zdrowie.annet.pl/zdrowie/dbaj-o-oczy-pracujac-z-komputerem-107-2.html).

The health ailments connected with the long term work at the computer afflicted the examined IT specialists. Over one third of them (37,1%) have the backbone ailments connected with the work at computer, and almost half of them (45,3%) have worse eyesight from the time they started to work with computer. 35,9% of the IT specialists also confirmed that they neglect physical activity for the benefits of the time spend at the computer.

The work at the computer carries along a lot of dangers for the human psyche. One of the most frequent occurring and in the same time one of the most often examined is the possibility to become addicted from the computer and Internet. A K. Paradowski (2000, p. 27) writes „Internet addicts through offering the substitutes of reality to the users. Without going on holidays we can experience new places, meet new people, collect information about subjects we are interested in. In time, in connection with the law physical activity caused by the time spent at the computer, raises the reluctance to any physical exertion and the belief that the time spend outside the network is the lost time. Many people are harden to this addiction, however, in many industrialized countries it is a big social and health problem.

The pioneer of the research concerning the addiction to the Internet was Kimberly Young from University of Pittsbourgh. She worked out the test diagnosing the Internet addiction, which consisted of eight questions. The affirmative answer on the five of them allowed to state that the person shows the symptoms of addiction. These questions concerned, among others, the time spend in the Internet, the trials to desist from using Internet, which ended with failure, or neglecting the house works or the duties at work for the benefit of the time spend in the Internet.

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The research carried out by the authors of this article, in the part concerning computer addictions, were model on the test designed by K. Young. The results show that 15,3% of the IT specialists demonstrated the symptoms of addiction to computer and the Internet. Considerable number of responders admitted that sometimes they spent much more time in the Internet than they planned (66,5%). Almost one third of the IT specialists (31,2%) noticed the anxiety when they don't have the access to the Internet or the access was restricted. About one third of examined people also admitted that happened that they neglected the house works or the duties at work in favor of the time spend at the computer (35,9%) and the Internet (30,6%). So, computer addictions are present in life of the IT specialists and the treatment is condemn to the failure in a great degree, because in this case it is difficult to put aside the instrument of work of the IT specialist (computer), which can be the source of addiction (Garwol, Haber 2011, p. 106).

Even greater number of IT specialists (25,9%) manifested the symptoms of addictions to the cellular phone. To diagnose this kind of addiction the examined people were asked the series of five questions and the affirmative answer to the three of them has to testify about the addiction. Almost 57,6% of the IT specialists admitted that they feel anxiety if while coming out from home they don't have a cellular phone with them. Over one fourth of them (26,5%) feel the anxiety if they don't have the possibility to answer the ringing cellular phone or read the text message, which they just received. The IT specialists used the cellular phone to escape from the every day problems (only 1,2% from them admitted acting in this way) but they didn't neglect the house works and the duties at work in favor of time when they used cellular phone (only 2,4% of them give here the affirmative answer).

Nowadays, among the IT specialists also exists recently discovered and not examined yet phenomena - infomania. Infomania was named and discovered by Glenn Wilson from the Institute of psychiatry of London University. The illness consists of the addiction to the constant reception of new information in the form of e-mails and test messages. Wilson examining this phenomena on the British ground in the 2007 ascertained that almost 62,0% of British admitted the addiction to the constant reception of new information, what causes decline of intelligence even about 10%. Among examined IT specialists 21,8% admitted that they feel anxiety if they don't have the possibility of checking their e-mails and 20,0% feels the need of immediate answer to the received e-mail. The anxiety connected with the lack of the possibility of answering the phone or reading the text message, which was just received was felt by over one fourth of examined people (27,1%) (http://kobieta.gazeta.pl/kobieta /1,66920,2814229.html).

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In the work at computer there is also the risk of transfer of real life to the virtual world. In this world the contacts become apparent and the human become anonymous. M. Szpunar says after A. Meller, that representatives of so called „Internet generation" their contacts with other people realize in the network. In the conditions, where in the some time one talks using communicator, checks e-mails, comments the news on the blog, listens to the music or radio, watches the TV, it's not difficult to have the impression that Internet acquaintances are mostly short lasting and passing. Psychologists claim that people communicating in such way forget how to communicate with others in real world (Szpunar 2006, pp. 211-212). Such virtualization of interpersonal contacts can transfer to the interpersonal contacts in the company, make the communication between people employed in it more difficult and cause the alienation among employees.

The phenomena of interpersonal contact virtualization occur among the IT specialists. Almost 35,9% of them admitted that happened that they have chosen the conversation by the Internet instead of the personal contact in the real world. The huge number of the IT specialists (29,4%) also claimed that present day man lost his or her anonymity because of the occurrence of the Internet.

As the above data shows the IT specialists as the people constantly working at computer and using the modern means of communication (especially the Internet) are exposed to the series of negative aspects connected with this kind of job. Good organization of the place of work, interlacing the sitting work with the physical activity, ability of coming over the sphere of the virtual world can protect against the dangers and give the chance to the situation that modern technology could serve man not the man was serving the modern technology.

6. Conclusion

Information technology has a big influence to the organizations. It changed and modernized a series of actions performed by present day workers. It also modified the processes of the company management. The information system of the organization is the sphere in which the organizational changes have to take place constantly with respect to the difficult to predict situation on the market. So that the organization could adapt to the recognized conditions it's not enough to made the structural changes but they have to be accompanied with the modification of the processes and behaviors. This flexibility is assured by the technological change, because it allows on modifying the processes in order to rationalize them (http://www.uci.agh.edu.pl/uczelnia/tad/PSI11/art/miejsce_rola_ i_zadania_informatyki.pdf).

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Constant progress in the domain of technology would not be possible without the participation of the IT specialists. The IT specialists employed in the organizations work over the new products from the IT domain or monitor the efficient work of the hardware, software, and the computer networks in the companies. Their work with the usage of the computer and the Internet for many hours brings with itself the danger of occurrence of negative effects for their physical health as well as for their mental condition. There are many of such dangers, however, taking into account the restricted frames of this article we have chosen these ones which have special influence to the IT specialists themselves and to the organizational system of the company.

Summary

Pathologies connected with the work of IT specialist in the organizational system of the company
In the article are described the dangers to which the IT specialists, working for many hours with the usage of computer, Internet, and the cellular phone in the organizations of different type, are exposed to. At the beginning there was described the influence of digitalization to the changes in the system of organization management. In the further part one can find the trial of the answer to the question what is the place and the role of the IT specialists in the organizations. Then there are presented the results of the research carried out by the authors concerning the sources of dangers connected with the long work of IT specialists in the organization with the usage of achievements of the modern information technology.

Keywords: IT specialist, information technology, Internet, addiction, organization, work.

Streszczenie

Patologie związane z pracą informatyka w systemie organizacyjnym firmy
Artykuł opisuje zagrożenia płynące dla informatyków pracujących przez wiele godzin za pomocą komputera, Internetu i telefonu komórkowego w organizacjach różnego typu. Na początku omówiono wpływ digitalizacji na zmiany w systemie zarządzania organizacjami. W dalszej kolejności znajduje się próba

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odpowiedzi na pytanie jakie jest miejsce i rola informatyków w organizacjach. Następnie zostają przytoczone wyniki badań własnych autorów dotyczące źródeł zagrożeń związanych z wielogodzinną pracą informatyków w organizacji z wykorzystaniem zdobyczy współczesnej technologii teleinformatycznej.

Słowa kluczowe: *informatyk, technologia teleinformatyczna, Internet, uzależnienie, organizacja, praca.*

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