

## HOW INFORMATIONAL TECHNOLOGY WILL CHANGE THE FUTURE WORKPLACE

*This paper asks questions about the future of information technology: what kind of technologies companies are going to use, how technology will change the workplace and will it be a positive or a negative influence on the environment and business life? With certainty, there will be great changes in the workforce, management, telecommunication, globalization and outsourcing in the future that are under influence of changes in information technologies. There were made some researches and conclusion that informational technology in the future will be positive for companies because using new software programs, equipment and virtual offices they can increase their revenues, production rates, establish global teams, and bring together the best employees from around the world.*

**Key words:** *Information technology, company, future office, programs, workplace.*

Information technology (IT) is a «technology involved in acquiring, storing, processing and distributing information by electronic means (including radio, television, telephone, and computers)» [3]. New informational technologies appear every day. They help the everyday people in many spheres of life as well as companies and complex enterprises. The technologies that are advanced today will be antique in the near future. Ten-fifteen years ago employees used big computers, fax machines, scanners, pagers, telephone, video and other bulky, compared to today, complicated equipment. That is why many companies in the world try to succeed through the use of new informational technologies that help them produce more goods in a shorter time.

The paper includes the following overview statement about the history of information technology, reviews emerging technology, key evidence, positive and negative impact of future information technology, integration Organizational Behavior concepts with paper to reinforce the argument about information technology changes in the future workplace.

Informational technologies have greatly impacted the workplace and workforce over the last century. Until the end of nineteenth and the beginning of twentieth century the workplace was not so technologically advanced like in present days. The first computers were used only to type some certain portions of information or to make simple operations. Companies used classic post offices and delivery agencies to send documents and important information that took a long period of time [9, p. 846]. The information presented above was taken from the article of Dr. Farrokh Mamaghai. This research provides a clear understanding about those tremendous changes that occurred in technological development during the last decade of the twenty first century in historical aspects with examples. He emphasizes the importance of informational technologies and its impact on the future offices and influence to management, telecommunication, globalization and outsourcing that significantly relates how informational technology will change the future workplace.

For instance, from the beginning of the informational era of technologies and Microsoft and IBM companies' involvement, workplaces have started significantly revolutionizing. Tremendous science achievements in the technological sphere were observed over the past forty years. This attainment caused vast changes in the way

employees work in their new offices and workplaces, use new equipment and economize time through high levels of informational technologies and as a result high levels of information transference. Informational technologies «have allowed companies and their employees to increase efficiencies, global expansion, competitive advantage in the marketplace, improve customer communications, communicate more rapidly, and work from remote locations» [9, p. 845].

Historical aspects of information technology evolution gave us prerequisites of understanding what kind of technology companies need to use to be more successful in the future. The Office Team, a leading professional organization for administrative and office support professionals, created the «Office of the Future: 2020 Survey and Report». This survey is based on interviews with leading futurists, technology specialists and workplace experts, where they presented a list of informational technologies, which will drastically change future workplaces and the way of performing job and work duties [10].

This section will cover seven topics about future changes in the workplace. The first changes will be in sensory-recognition software. Computers in the future can detect voice, handwriting, fingerprint and optical input. There will be special «Knowbots» programs, which can allow employees to work with information faster, to scan databases to filter and retrieve information for users. Smart devices and miniature wireless communication tools will play an important role as well. These small and convenient devices will include computer, scanner, phone, organizer, camera and a lot of different programs in one. Such kind of devices definitely will make our life better and allow employees and all people to have more free time for personal life. One piece of the evidence of time shortage in the future will be using wireless everywhere. Employees can use their small smart devices and send important information from buses and taxis, from cafes and building parking lots.

Future offices will have interactive office spaces. Virtual conferencing technology will be an irreplaceable part of the future workplace. Employees can participate in such conferences with 360-degree views and clearly see other employees from different parts of the world. Employees should not go far away from their offices and countries that will eliminate the need to travel to faraway locations, saving commuting time and companies' expenses. These web-based conference services will help to conduct meetings in real time with participants in various locales and allows participants to exchange information online, deliver PowerPoint presentations or conduct brainstorm sessions. The meetings will be audicast or videocast live to further enhance the feeling of being there in person. Automated business process management will be very important to perform team and individual projects by using email and other software [10].

As a result, in the future workplace employees can use advanced information technology, which can help them to increase their productivity and decision making. This is «the process of generating and choosing from a set of alternatives to solve a problem» [4, p. 259]. Using advanced software will allow employees to find better solutions for their projects, be creative and save time in their decision-making process.

The survey, discussed above is one of the many survey examples discussing possible future changes. Today we see more and more suggestions of designers' projects for new advanced technologies. Many companies try to prove that their new technology will dominate and will be the most advantageous for the future. But, who knows what impacts these new technologies will hold in the future workplace? Will they be positive or negative? In the next section the paper reviews these two elements.

The first positive effect of technology to companies in the future will be increasing profit margins, competitiveness and involvement in new marketplaces. Thus, authors Garcha-Morales, Ruiz-Moreno, and Llorens-Montes in their research made the analysis that shows the increasing of using new technology will create more organized performance and higher quality. This will be the basis «to increase and improve its sales; to achieve more support; and to create, maintain and enlarge its customer base»

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[5, p. 535]. So, informational technology will help companies to grow their businesses by fully integrating the efforts of sales, marketing, and customer service in order to create a consistent and satisfactory relationship with prospects and customers. They can be able to increase the effectiveness of marketing campaigns, automates the sales process, and improve the customer support experience. It also provides a concrete set of metrics to help management measure sales and marketing activity against growth targets [10].

Mobile and reliant on electronic communication workforce is another positive effect of future informational technology. There will be more flexibility in a workplace. Future companies would not have to follow strict rules concerning a dress code and formal office hours. Also, technology will help in reducing international relocation expenses and managing competition levels for talented resources. Virtual office provides for «broaden participation in an organization's work processes and decision making by including people located at its periphery» and «increases the potential for bringing people from different organizations and disciplines together dynamically for short periods of time who would not otherwise have the opportunity to become engaged in the activity» [12, p. 756]. All these positive aspects are described in the research, written by Zammuto, Griffith, Majchrzak, Dougherty, and Faraj. Authors of this article analyzed work processes, work time, service innovation and virtual collaboration under the influence of future technology. Aspects of a company, like these listed, can be improved by both intersections of technologies and organizational features.

Another article, written by Lichtenthaler and Lichtenthaler, provides examples of long-lasting positive effects on total company profit. Authors of the research made the conclusion that many companies are open for innovation processes and as result they actively collaborate with external partners through innovation processes. To explain strong interfirm heterogeneity in outward technology transfer performance, companies try to develop the concept of desorptive capacity as a complement to the concept of absorptive capacity. While absorptive capacity refers to «a firm's ability to recognize, assimilate, and apply external knowledge, desorptive capacity describes a firm's ability to transfer its own knowledge to external partners» [8, p. 166]. So, the development and deployment of absorptive and desorptive capacity provide an important source of competitive advantage for companies. In one of the article's examples, IBM, in 1989, had an annual licensing revenue below \$30 million when «the firm enhanced its desorptive capacity» but after starting to use the outstanding technology portfolio (today IBM has one of the largest patent portfolio in the world) this company has achieved extra licensing revenue more than \$1.2 billion after using new technologies [8, p.163]. Concepts of absorptive and desorptive capacity are presented, which reflect the positive and negative impact of interorganizational informational technologies in the workplace. In conclusion of this article, companies are reliant on outward and technology transfer in addition to inward technology transfer.

Despite positive aspects of technology in the future workplace, there also will be negative ones. In addition to a company's usual expenses, buying new technologies will create a problem in managing their budget. If organizations want to succeed, they need to change their old technical equipment to advance. To provide money to buy the advanced technology needed, the company will have to accept additional losses. At first, this may seem like a disadvantage, however, in the long run the company will achieve positive results from this change. As result of their budget shortage for buying new technology, companies will organize a policy for reducing a number of employees. In such a way companies will replace workforce to technology. New technology will perform many operations that organizations will not need to have many employees.

As was mentioned, in the future there will be a lot of new informational technologies, many people will know how to operate and use them. Another problem will appear: this is the risk of losing information. Companies will need to use new programs and software

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to protect their sensitive company data. New technology will be in every company, so as a result employees should know how to use advanced technology. One problem is that not every employee could have a completely perfect understanding of how to use them, their job performance or «the set of employee behaviors that contribute to organizational goal accomplishment» will decrease [4, p. 56]. Consequently, one of the negative impacts of future technologies on the workplace is stress, which is «defined as a psychological response to demands that possess certain stakes and that tax or exceed a person's capacity or resources» [4, p. 144]. Thus, the American institute of Stress conducted research, which has shown that job stress costs U.S. industries over \$300 billion annually as a result of lower productivity, accidents, absenteeism, and employee turnover [11, p. 324]. Employees with low «job satisfaction experience negative feelings when they think about their duties or take part in their task activities» [4, p.105].

Also, Tarafdar, Qiang and Ragu-Nathan in their article try to show how future technology will influence employees. They made the conclusion that new technology will cause «the technostress» because of widespread use of advanced technology in the workplace. The reason of technostress will be «technology-imposed information and work overload, technology invading personal life and privacy, inability to deal with technology complexity, technology threatening job security, and fear of technology uncertainty» [11, p. 324]. Also, there will be a demand of higher skilled workers because of the technological development. Employees will be more motivated and will increase «a number of facets of an employee's work effort» [4, p. 180]. Information technology departments will have additional roles in the education process for training employees on how to use new technologies and programs. As a result, there will be a demand for skilled employees, because not everyone can have the ability to perform new kinds of operations fast. Therefore, in comparison to skills «abilities can change slowly over time with repeated practice and repetition» [4, 2010, p. 339].

In conclusion, advanced informational technology plays a very important role in our life. It will change our society and workplace, the way we live, work and think. Companies will have a possibility to prosper, increase their revenues, and reduce costs. Employees will have more opportunities to complete their tasks faster and better, to perform organizational tasks from a remote location, to improve quality of work and manage their time and work schedule better. There also will be positive and negative influences of informational technology in the future. Many economists and scientists argue about these different points of view for years. But, nevertheless, our world will change as positively and negatively under using new and advanced technology and of influences of other different factors. So, our society always reaches to be better and the main components of its goal will be technological and informational changes in the future like in a workplace and in our personal life as well.

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*Ця стаття ставить питання про майбутні інформаційних технологій: який тип технологій компанії мають намір використовувати; як технології будуть змінювати робоче місце; чи буде цей вплив на оточуюче середовище та бізнес-атмосферу позитивним чи негативним? Стверджується, що у майбутньому під впливом змін у інформаційних технологіях відбудуться суттєві зміни у робочій силі, управлінні, телекомунікаціях, глобалізації та аутсорсінгу. Проведені дослідження дозволили дійти висновку, що інформаційні технології матимуть позитивний вплив на компанії, оскільки, використовуючи нові програмні засоби, обладнання та віртуальні офіси, вони можуть збільшити свої надходження, виробничі показники, створити глобальні групи найкращих працівників.*

**Ключові слова:** інформаційні технології, компанії, офіс майбутнього, програми, робоче місце.

*В статье анализируются вопросы, касающиеся будущего информационных технологий: какой тип технологий компании намерены использовать; как технологии будут изменять рабочее место, будет ли это влияние на окружающую среду и бизнес-атмосферу положительным или отрицательным? Утверждается, что в будущем под влиянием изменений в информационных технологиях произойдут большие изменения в рабочей силе, управлении, телекоммуникации, глобализации и аутсорсинге. Проведенные исследования позволили сделать вывод, что информационные технологии будут иметь положительное воздействие на компании, поскольку, используя новые программные средства, оборудование и виртуальные офисы, они могут увеличить поступления, производственные показатели, создать глобальные группы и объединить наилучших работников.*

**Ключевые слова:** информационные технологии, компания, офис будущего, программы, рабочее место.

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