THE USV ANNALS OF ECONOMICS AND PUBLIC ADMINISTRATION | VOLUME 20, ISSUE 1(31), 2020

IT TOOLS FOR MANAGERS TO STREAMLINE EMPLOYEES' WORK IN THE DIGITAL AGE

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Abstract:
Throughout this paper we bring to the fore a series of interconnected issues that managers confront themselves with in order to streamline the employees' work in the digital age. More and more, digital technology is being integrated in the lives of all individuals from an early age and this trend will lead to dramatic changes in the sector of education and employability. Within the first section of the paper we shall present a brief evolution of some selective IT tools which have irreversibly changed the business world and great changes are yet to come. The increasing trend of including technology at the work place is challenging the leadership competence. Managers are constrained to improve both their technological skills and their soft skills, in order to manage both the digitalization phenomena and the employees. Throughout the second section of the paper we emphasize some of the most important IT tools used by nowadays managers in their daily work and which are greatly improving their business performance. In section number three we address a selection of the managerial methods of coordinating employees in the digital age. Even if technology achieved to replace many human processes there is still the need for human resources in the business place. Within this section we present a set of managerial practices suitable for the efficient combination of digital and human work. As a bottom line of this research paper, we concluded that presently we are facing a transition and the greatest challenge for managers is to optimize digital and human resources and processes.

Key words: artificial intelligence, big data, digital age, IT tools, IoT - internet of things, technological skills, voice recognition.

JEL classification: M12, M13, M14, M19.

1. EVOLUTION OF IT TOOLS FOR THE BUSINESS ENVIRONMENT

Technology drives our life during this period. Smart phones, tablets and computers have become elements without which people, various entities, or even businesses, cannot function with high efficiency. During a brief timespan, the technology emergence increased so much that people immediately got used to it and couldn't imagine their lives without it. The modern business world depends more and more on these technical tools (Bejinaru 2019a, 2019b). Even businesses that are not involved in an overly technical sector need technology to function properly. All these changes have taken place in a way that makes us hardly observe this evolution. If we were to look at ten years ago we would see a big difference between that period and that of this moment. We will probably see social media as not so important in marketing, mobile devices are used to call business partners, customers, instead of being used for meetings or reading emails. If we were to remember the Cloud, most of the people involved in the business would say that they are present, rather, somewhere in the sky. These three technological advances are nowadays essential for most businesses. They perfectly illustrate why technology is essential to running modern business and why it will continue to do the same in the future. They have a direct contribution in creating intelligent organizations (Bratianu et al., 2006). In this context of continuous integration of technology into our daily lives and businesses, managers must update their agenda and reconsider updating their skills, like thinking strategically and learning to learn, in order to keep their role in the business environment (Bratianu, 2015; Bratianu & Vasilache, 2010; Ferràs-Hernández, 2018, Gratton, 2016).

Internet of Things (IoT). Technology is accelerating its ability to help businesses do more by using fewer resources and yet achieving better outputs. Artificial intelligence (AI), big data, but also Internet of Things (IoT) function in a dynamic system providing less time consuming options for businessman to create and deliver their products to the final consumer (Crisan et al., 2014). In addition, other elements, which have a say in the efficiency of the activities of certain companies, are techniques such as voice recognition, virtual reality or even Cloud technology. All of these have developed quite a bit in the last decade, and more and more areas are being used (Raghuram et al., 2019; Wilburn & Wilburn, 2018).

Artificial intelligence (AI). Artificial intelligence has been around us for a long time. Since the time when Alan Turing created the Turing test, scientific researchers have been working on developing a computer with the ability to function as a human brain (Turing, 2009). Over the years, scientists have been able to simulate a decision-making process, which is a mechanical process, based on neural networks and algorithms created to be part of artificial intelligence (AI). Although developed for over half a century, artificial intelligence will continue to become more sophisticated, eventually helping businesses evolve with it. This technological development now allows computers or software elements to learn and then perform the set tasks. For the business side, the vast majority of companies adopt AI as chatbots or automatic reporting.

Big data (BG). Another fairly common concept used in the business environment, Big data, comes from the idea that even the smallest company could have an amazing amount of customer data, but not only. Big data has been defined as large and complex sets of both structured and unstructured data, different from the processing point of view from traditional techniques. This architecture is able to extract to light hidden patterns, evolving from a model-driven to a data-driven scientific perspective (Taylor-Sakyi, 2016). In turn, Big data has led to the emergence of data analysis. The technology makes data analysis much simpler, expecting, in the near future, to discover more sophisticated ways of processing large volumes of data. For Internet of Things there is no standard definition. In most approaches the concept is defined as a network that interconnects physical objects, which have identifiable addresses and provide intelligent services.

Voice recognition (VC). Voice recognition has taken place in various fields with well-known products on the market, having a positive impact on business (Ma, 2011). The first benefit is brought by creating virtual assistants to whom we can give various voice commands. Also, as more people use them to search for services, businesses will need to consider them when designing the content of their website. Augmented reality will allow consumers to actually see what a product will look like in their home before buying it. This technology offers endless possibilities when it is fully prepared for all businesses, helping even to increase sales. Cloud technology has been with us for several years. Many expect it to be applied on a larger scale into the future. This will help businesses evolve more productively and efficiently, with a greater possibility of online collaboration (Taylor-Sakyi, 2016).

2. TYPES OF IT TOOLS FOR BUSINESSES

In today's world, based on technology, there are a lot of options and technological tools that companies can choose from, solutions from which to earn more customers, more money, a better image. Starting from the premise that "time is money", especially for the sales sector, but not only, every entrepreneur must be sure that he is investing in time-saving technologies, while increasing his profit. No matter the companies' dimension they all pursue to grow their sales revenues. Any employee of a company should use the latest technological tools. From cloud to SEO services, to just additions to the e-commerce site, technology can change the evolution of a business quite a lot. Technology is constantly reinventing and improving, and the world is continually reinventing itself. Companies that choose to keep outdated techniques may eventually stop working as a consequence of their organizational behavior according to which they reject or ignore or fail or give up adaptation to the new environment conditions (Bratianu et al, 2011; Bratianu & Bejinaru, 2019).

Cloud Computing. Choosing to use cloud-based or cloud-based business management technology is an efficient investment direction. The Cloud has no physical dimension but is represented by a network of servers. Part of these servers provide online services and others provide storage and retrieval of data like Instagram or Dropbox. The cloud increases the companies' savings and enhances businesses efficiency and profitability. In addition, Cloud allows expanding or shrinking the size of your business quite quickly, depending on the need for resources. Due to the use of this innovative technology, employees can improve their productivity. Despite its popularity, many companies have not yet succeeded in adopting cloud computing under any circumstances. form. Through this technology the entire workforce can be connected, allowing easier sharing of data, rules or any other necessary material. At European level, the degree of use of cloud computing in enterprises can be seen in Figure 1. Recently, companies have resorted to virtual space and wireless solutions for their work in terms of meetings and discussions between team members and with clients, connecting offices and databases, wherever they are geographically. These solutions are necessary so that each company can debate the strategy with the team. VIA collaboration tools - represent such a solution being created to place the conference room wherever it is necessary for the work team. VIA offers companies the possibility to transmit videos and presentations wirelessly in several conference rooms with different locations. These virtual tools give companies the chance to organize meetings despite physical boundaries and so employees can work together.

Search Engine Optimization (SEO). More and more persons are using voice search throughout their smart-phones in order to retrieve and access online the needed content. Nowadays, when they search for relevant knowledge about products or services people use voice search. This operational method it's easier than typing and enables the necessary content much faster. Content optimization for voice search helps increase the online visibility of a business, so that potential customers will find it easier. This is a way to increase search engine optimization (SEO) position and traffic. Voice queries are longer and conversational, but should not be confused with long keywords. Usually, voice queries are describing localized issues thus this technological behavior should be used as a strategy to grow a local business. The first advances in Artificial Intelligence could be experienced when interacting with digital assistants such as Amazon Echo, Apple Siri or Google Home. These digital assistants can provide solutions, supervise the functionality of the devices in the house and carry out commercial and banking transactions on behalf of the owner. Therefore, artificial intelligence can be applied to businesses by collecting massive amounts of company and customer data. This stage of voice recognition is just starting. In the near future we shall experience the influence of AI that can contribute to transport management, assistance for parking, avoidance of collision and shall host complex smart activities for many stakeholders.

Chatbots. The popularity of chat-robots has grown a lot in recent years and will continue to grow quite a lot in the future. Mainly, chat-robots have revolutionized the interaction of companies with customers. Conversation and real-time interaction are very important today for websites and chatbots supplement this policy of interaction with customers. First, chatbots have a 24/7 availability and secondly interact simultaneously with hundreds of users in a relatively low waiting time. The basic principle is that interacting with a chatbot provides instant answers to any questions and it is no longer necessary for an individual to respond to messages or emails. Presently, the limits of chatbots that are perceived by business owners are related to the absence of human presence but things are to change in the near future due to the rapid advancement in the field. At this point, chatbots register the performance of recognizing emotions and responding accordingly, keeping an increased level of engagement. The fast improvement is mainly fueled by AI and machine learning which provide a high level of understanding the context in each discussion and provide meaningful conclusions. In figure 2 we observe a certain prediction regarding the evolution of IoT worldwide, including the active device connections, which tells us that we shall experience an increase by 10% each year, at least until 2025.

Learning Management System (LMS, **). The company's policy of employee training often leads to considerable expenditure of money and time. Even so, it is essential to achieving success. Business owners are aware that continuous improvement of workers is crucial, although

most do not understand how to really benefit from it. In this context we are talking about LMS (Learning Management System) software. The growing number of these solutions on the market helps business owners to train their employees and thus manage to grow the business. Through access to 24/7 training materials, materials that can be accessed from any device, learning opportunities are offered that ultimately help to develop business of any kind. The benefits of e-learning software include creating and implementing training courses, tracking employee's performance, identifying strengths and weaknesses - thus simultaneously helping to support employees to accomplish their tasks and increase their job satisfaction at work. We consider that these are good reasons to apply this technological trend.

	Use of cloud computer	Use of E-mail	Use of Office software	Hosting for the enterprise's database	Using of CRM software	Using of finance and accounting software
Countries	% enterprises	Percentage of enterprises using Cloud Computing services				
Finland	65	52	43	34	24	36
Sweden	57	41	30	30	18	29
Denmark	56	41	32	30	23	29
Norway	51	29	31	33	20	31
Netherlands	48	32	27	34	22	28
Irland	45	35	28	24	16	20
United Kingdom	42	30	31	20	14	19
Belgium	40	29	24	22	16	16
Malta	37	29	23	15	9	10
Estonia	34	23	14	9	7	22
Croatia	31	25	17	14	5	14
Cyprus	27	22	16	8	7	8
Eu-28	26	18	14	13	8	10
Czechia	26	21	15	9	5	9
Slovenia	26	19	15	10	5	9
Luxembourg	25	16	14	13	7	7
Portugal	25	20	13	10	6	8
Italy	23	19	11	10	6	8
Lithuania	23	16	9	12	6	9
Austria	23	13	9	7	5	4
Germany	22	11	8	8	4	6
Spain	22	16	11	14	7	7
Slovakia	21	18	13	8	6	9
France	19	13	9	12	7	6
Hungary	18	13	10	7	5	6
Montenegro	18	12	8	9	2	7
Latvia	15	9	6	7	3	7
Serbia	15	:	:	:	:	:
Greece	13	9	6	5	3	3
Poland	11	8	6	4	3	3
Romania	10	8	5	5	0	5
Turkey	10	8	6	6	4	7
Bulgaria	8	6	5	5	2	2
Bosnia and Herzegovina	8	6	4	5	2	5

Figure 1. Using Cloud Computing in Companies, 2018
Source: adapted after https://ec.europa.eu/eurostat/statistics-explained/pdfscache/37043.pdf

Wearable Technology. Major changes in global consumer behaviour have been generated by the advent of portable technology devices such as smart watches or Google glasses. The contribution of these devices is to keep employees motivated for an active and healthy lifestyle.

Although it is impossible to predict the precise evolution of neither the business environment nor the workforce, it is essential that economic actors keep up with technological advancement as this strategy will certainly bring them benefits (Bejinaru, 2017).

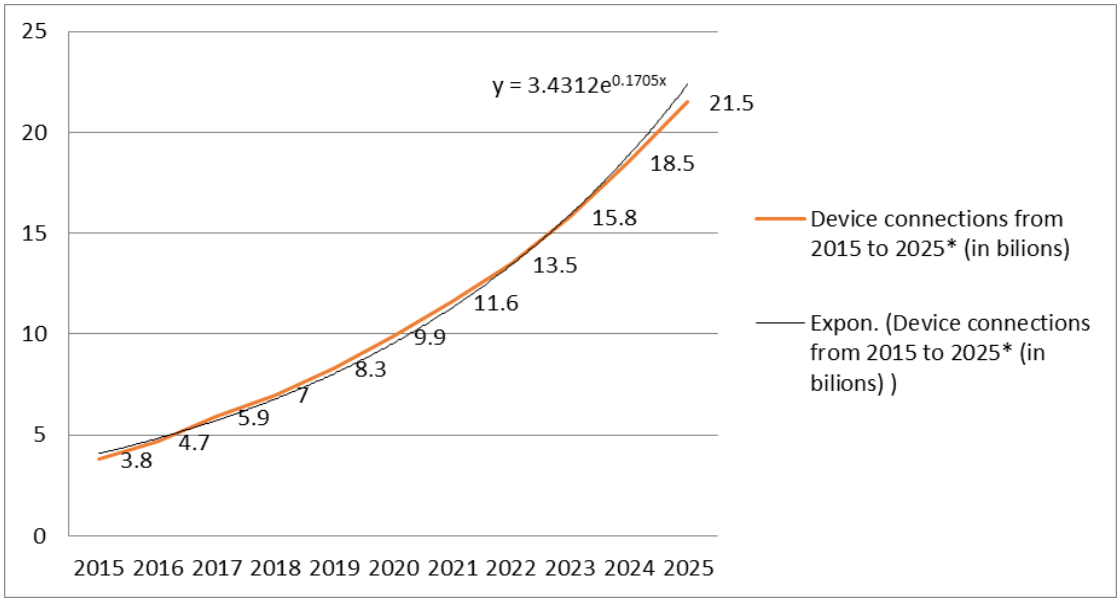

Figure 2. Predictions regarding the evolution of IoT worldwide

Source: adapted after https://iot-analytics.com/state-of-the-iot-update-q1-q2-2018-number-of-iot-devices-now-7b/

3. MANAGERIAL METHODS OF COORDINATING EMPLOYEES IN THE DIGITAL AGE

Generally speaking, technology can produce enabling or oppressing effects for people at work (Coovert & Thompson 2014). Managers are now challenged in a totally different way, which is to manage their employees at distance. Thus the traditional methods used during the meetings in the office, like bold attitude or psychological pressure or rough voice tone are considerably limited and inefficient (Bolden, 2010). However, managing in the digital age should start from the well-known classic leading approaches which now should be adapted to the new digitalized tools (Kane et al., 2019). At this point managers should employ the digital options, previously presented, in order to obtain from employees the required objectives. Leading in the digital age, doesn't mean only to have the knowledge and abilities to use the digital means in the business but the "art of leading digitally" means to have both the technical skills and the 'soft' skills of producing the optimal effects together with your digital employees (Bankewitz, Aberg, & Teuchert, 2016; Robles, 2012). Another aspect to be considered is whether introducing digital work is producing more benefits than the traditional work methods. To support the benefits provided by digitalization we provide some facts and figures from a survey developed by CEC European Managers, in 2018. In figure 3, we can observe the comparison between two stages: the motivation of introducing advanced technology in the business and the achieved results of introducing digital technologies in the business.

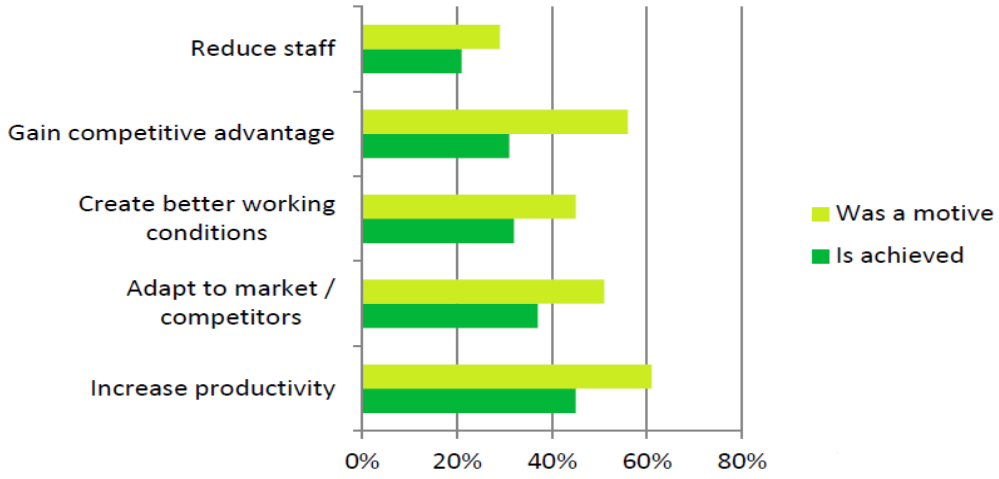

Figure 3. Comparison of motives and effects of digital technologies implementation
Source: CEC European Managers, survey in 2018

The most important motives for managers to implement digital technologies are increasing productivity, gaining competitive advantage, adapting to the market and creating better working conditions. We can deduce that managers have expectations in terms of improving efficiency and gaining market share for their companies. In this case, the majority of managers don't appeal o technology in order to reduce their staff but rather to improve the working conditions for them. However, a certain category of managers has a different perspective of human-machines interactions and want to replace part of their employees with technological systems. The digital business environment calls not only for specific features of managers but also for accurate consideration of the context and collaborative work conditions. For instance, heterogeneous teams, from the age point of view, implies different levels of knowledge and styles of working with technology thus may occur intergenerational conflicts that the manager should know how to solve (Colbert, Yee & George, 2016). In this context we shall point that the education system is also directly influenced by technological evolution in many aspects, starting from the educational process up to the graduates' skills further necessary on the labor market and which must ensure them jobs (Hapenciuc et al., 2016).

As more and more advanced technological tools are emerging, we are tempted to assume that their implementation will grant us immediate results. The thing is that the performance of the sophisticated technological tools depends on the people who use them. If the tasks are developed by a team, then activities get more complicated and performance depends on other variables which imply personal skills but also organizational and team culture. The coordinates of virtual team communication are different then the classic ones and must be precisely implemented. In order to develop an effective teamwork a series of best practices must be in focus: to match the technology with the task, to make the intentions clear, to stay in synchronization, to be responsive and supportive and last but not least to be open and inclusive (Yukl, 2012). A survey undertook by MIT researchers (Hill & Bartol, 2018) has proved that teams which accomplished to respect the above five best practices -have succeeded to - produce quality deliverables, to complete tasks on time, to work productively together, and finally to meet or to exceed goals. We must acknowledge that technology doesn't bring only benefits but also some difficulties. Novel technologies which started to be implemented in the managerial area are now challenging team collaboration and assimilation that have become a tricky issue for managers. In this sense, software developers have come up with solutions in order to optimize the digital teamwork mostly adapted for middle managers (Raes et al., 2011). For instance, "monday" is a smart app that enables middle managers to organize their tasks and their teams, to prioritize tasks, to monitor in real time their work achievements, to post feedback, to share knowledge, to send alerts for certain tasks, and many other options (Figure 4). For an increasing number of users, these features of such apps are more efficient and more convenient and they become a normality.

In order to have good results in the virtual work environment, managers must pay attention to a series of 5 strategies which have great potential of increasing the performance of their work.

[1] Matching technology to the task. Applying this strategy seems to be such a basic step but which many times is overlooked due to the installed routine or maybe due to the preference regarding a limited number of apps. Thus, failing to choose the appropriate app will conduct to failure of the teamwork tasks. For complex projects it is recommended to have a close communication and collaboration which requires a rich content technology in order to provide a high level of knowledge sharing. Consider the various options at different moments of the teamwork project. At starting the job, you can use the email, the chat or bulletin boards in order to push information in one direction, towards the team members. But when developing the tasks, such as problem-solving or negotiating, are needed more interactive and better suited tools like videoconferencing. Another important issue is that the manager's level of technical competence is positively influencing the employees' job satisfaction (Artz et al., 2016).

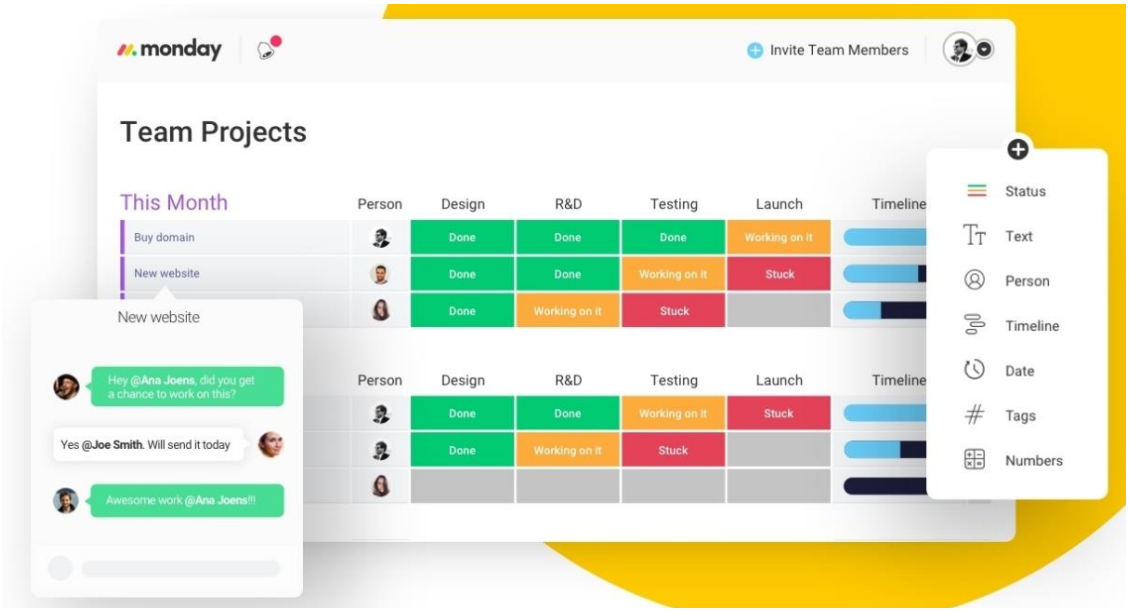

Figure 4. Interface options of 'monday' management app
Source: www.monday.com

[2] Stating clear intentions. Organizational practice showed that people tend to miss-interpret written communication rather in a negative way. Studies, proved that a written message which was intended with a positive message is interpreted as emotionally neutral. But, on the other part, a written message transmitting a slightly negative attitude is likely to have a more aggravated negative tone than intended by the sender. This happens mainly because people are not face to face but they are protected by the physical distance that technology offers them. Feeling sheltered by technology, people become bolder and manifest more aggressively than they would in a face to face discussion. Another issue to consider is the receiver's reaction because people read and interpret the messages with different lenses. When communicating through written messages a couple of easy errors might occur. For example, when describing a task, we can easily overlook some details of the problem or simply assume that some aspects are already known by others. When writing messages, we should also calculate the priority of tasks and state it clearly. In some cases, even informal daily conversations can become relevant management skills (Alvesson & Sveningsson, 2003). Thus choosing the suitable words and discourse message is critical. For all the issues discussed above have been developed applications that make them easier to be managed. Surveys are being developed in order to determine whether there are influential factors which contribute to building trust in virtual teams (Breuer et al., 2020).

[3] Continuous synchronizing. When team members don't work in the same room or office space, the risk of losing touch and even of getting out of step is greater. There are several reasons due to which this might happen. Remote work is flexible and doesn't guarantee that all members read the messages at the same time. Also, online messaging can fail delivery due to technological or human errors. At this point we have several blockages in the way of our virtual teamwork. In order to avoid as many as possible of these problems, the manager should always prioritize to keep continuous synchronization with all team members. The good functioning of the team depends on regular communication and avoidance of lengthy silences. For this strategy a team manager should constantly share knowledge and feedback on the distributed tasks. Another important issue is to give teammates the necessary time to build their reaction and response to the task. Once again, all these management strategies are easier to implement with the smart digital apps. In time, the process of upgrading their skills, might conduce to identity change for managers also (Miscenko et. al., 2017).

[4] Responsiveness and support. When we speak about teamwork, in general, a key aspect is the trust established between the team members. In the case of digital teams, so physically dispersed, this state of trust is even more difficult to consolidate than in traditional teams. In the management of classic teams, it was known that socializing and bringing members closer also leads to a stronger trust in each other, which in the case of virtual teams cannot be achieved in this way (Tarafdar, 2016). However, what can be done is another kind of manifestation of the confidence and support of the work that virtual co-teams can apply. Thus, managers need to encourage employees in a virtual team to react promptly and positively to their colleagues' requests, thus proving solidarity. To the same extent, it is important to give them the time they need to provide substantial feedback on the proposed problem, formulate solutions and thus maintain a proactive communication tone and an atmosphere of mutual support. This type of approach needs the core leadership skills (Mumford et al., 2017).

[5] Openness and inclusiveness. By their nature, the virtual and dispersed teams, most of the time have a culturally colored group, made up of members from different backgrounds and with different experiences. The advantage of this diversity is represented by the greater variety of ideas which increases the level of creativity of the team and possibly its performance (Coman & Bonciu, 2014). On the other hand, awareness of cultural differences may discourage some team members from communicating because of preconceived ideas or possibly personal fears. In such situations the manager must find the optimal way to capitalize on the benefits and limit the imbalances (Zaccaro et al., 2018). Using virtual tools eliminates the social cues which are extremely important in order to analyze others reactions and receive interactive feedback, thus the motivation for sharing knowledge and ideas decreases. Sometimes, when they cannot directly see the reaction of their colleagues, people tend to be more restrained in presenting their ideas. Another danger of dispersed teams is the creation of subgroups of members from certain locations and thus communicating more within subgroups than at the level of the entire team. From this perspective, the manager's role is praiseworthy, because he can be accused of paying more time and attention to a certain subgroup than to the team as a whole. In such a context, a manager must take advantage of the diversity of the team and stimulate all its members to communicate as open and inclusive as possible. Involvement must be general both in terms of communication and decision making. In constant mode, the opinions and perspectives of the team members should be requested to show openness to their ideas and approaches. In order to resolve the differences, it is necessary to integrate the best ideas of the team (Hill & Barton, 2018).

The manager of virtual teams must always keep in mind that he is also a virtual persona for others. To reduce the risks and errors that may occur in the work environment of the virtual teams, the manager must propose a working guide, describing the working methodology and thus being known by all team members. This guide could contain aspects such as the five work behaviors in the team, described above, as well as specifications regarding the technologies and applications that will be used to work together on various tasks. Research has shown that, as these working rules are stipulated more clearly, the team performance increases and otherwise decreases dramatically

(Dalborg & Löfgren, 2016). Moreover, studies show that managers can rely, in order to obtain better coordination and team motivation results, on those employees who have previous experience in such collaborations (Bolden, 2010). Experienced employees can help shape the behavior of other team members and thus increase the overall performance level. As a bottom line, managers themselves should communicate more and stimulate de continuous communication of team members in order to keep in touch.

4. CONCLUSIONS AND PERSPECTIVES OF MANAGER-EMPLOYEE RELATIONSHIP IN THE DIGITAL AGE

Finally, we can argue according to the information presented in this paper, that achieving success as a manager, during this period of transition to a digital level of work is mainly based on combining or better on completing traditional management skills with digital skills (Bejinaru, 2018). Even if the specialists in artificial intelligence have such a high level of knowledge in this field, they cannot become specialized managers in order to work in any field of the global economy, and even less to achieve an optimal work compatibility between digital resources (machines/robots/devices) and human resources - people (Bratianu & Bejinaru, 2019).

For the time being, the fight continues to improve as much as possible this cooperation between technology and human resources, and managers have the most difficult task. Managers are the ones who have both the responsibility for efficiently carrying out the work of the organization, as well as for effectively accomplishing the digital transformation of the organization. Namely, the balance between the two phenomena must work so that the organizational objectives are not harmed, but the technological transformation is not slowed down either. The restriction of technology in the life of the business environment is no longer possible. Nowadays, we cannot speak to the general mode of existence of digital employees - in totality - as, as we have stated, work is a combined one, but predominantly based on human resources.

The paradoxes of this transition can continue, in the efforts to efficiently combine the work of the employees with the work done on the basis of technology. It is likely that a manager who has those soft skills will be able to manage a balanced integration between the two work systems in the future so that it becomes a single functional system. We can expect that, from one generation of managers to another, the system will advance to a level where the technology workforce is greater than the human workforce.

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