THE IMPORTANCE OF NEW COMMUNICATION TECHNOLOGIES IN WORKING PROCESSES. OPPORTUNITIES AND CHALLENGES IN UTILIZING VIRTUAL TEAMS AND ORGANIZATIONS

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Abstract

The rapid pace in which the new communication technologies develop allows for an important shifting to occur, both in the organizational, as well as in the professional sphere. Changes may thus be encuntered in the manner in which individuals, groups, teams and organizations function and interact, but also in the progress and characteristics of the working process. Relying on the unprecedented advance in the field of new communication technologies, virtual teams and organizations, today's new forms of organizing and accomplishing work, begin to evolve, their efficiency and efficacy being thoroughly examined by the specialty literature. For these reasons, the present paper analyzes virtual teams and organizations, focusing on opportunities and challenges that their emergence might bring along both to the organizational environment, as well as to the working activity itself. Advantages and disadvantages implied by work in virtual teams and organizations are underlined and discussed, taking into consideration as analysis criteria the quality of organizational processes, the acquired efficiency and the obtained performance. Suggestions are also made in view of increasing the positive effects of working into a virtual environment and of efficiently employing the new communication technologies inside virtual teams and organizations.

Keywords: virtual teams, virtual organizations, new communication technologies, virtual work.

1. The new informational era and the new forms of organizing work: virtual teams and organizations.

The new informational era [Davidow and Malone, 1992, p. 3], also known as the knowledge era [Brown and Duguid, 2000, p. 74], might be characterized by the unprecedented evolution and utilization of new communication technologies into a vast majority of human existence domains.

The usage of advanced communicational and information transmitting technologies emphasizes the need for connections, networks, structures and new forms of organization to be created in view of fulfilling the more and more complex tasks employees are confronted with, proof in this sense being represented by the intense emergence and development of virtual teams and

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organizations [Townsend, De Marie and Henrickson, 1996, p. 123].

The impact of fast communication processes and technological advances led to a diminution of direct interactions between employees and to an ever more marked virtualization of work processes [*ibidem*, p. 124]. At the same time, changes have also occurred in the manner in which the actual working process takes place, as virtual teams and organizations reunite members accomplishing their work from different geographical regions, separated by distinct time zones and often originating in different organizations or even work domains.

In this way, the new informational era imprints its mark both on working processes, as well as on work organization methods, strengthening thus, under favorable conditions, collaboration and productivity [Allcom, 1997; Vaill, 1989; Wang, 1997, *apud*. Black and Edwards, 2001, p. 128].

From this perspective, it might be considered that the turbulent rhythm of evolution in the business environment, the raised level of competition and the need of change and adaptation are significantly modifying the configuration of the organizational background, imposing virtual teams and organizations as the main forms to ensure work fulfillment in the XXIst century. Virtual teams and organizations thus seem to represent more and more an answer to many of the issues organizations face today [Duarte and Snyder, 1999; Haywood, 1998; Lipnack and Stamps, 1997, *apud*. Dubé and Paré, 2004, p. 2].

The business globalization, the informational revolution, the until now unmet development of new communication technologies, the extremely fierce inter-organizational competition require, in this point of view, changes to take place both in the working process itself and in the structure of work teams and organizations [Windsor, 2001, p. 5].

The need for flattened structures and a flexible working schedule, the shifting towards a knowledge based work, the need for a higher interaction among employees and the increase in responsibility in facing tasks, combined with the need for delocalization and for work at distance carried out by means of the new communication technologies, may thus outline several characteristics of virtual teams and organizations [*idem*].

In this view, advantages and opportunities that work into a virtual team or organization brings along enhance their popularity, as more and more teams or organizations virtualize the working process aiming at an increase in competitivity, adaptability and productivity. It may be thus considered that, with time, virtual teams and organizations could become the main form of work organizing, deeply reshaping the manner in which labor activities are accomplished [Lipnack and Stamps, 1999, p. 14].

2. Towards a definition of virtual teams and organizations. Features and perspectives of analysis.

When taking a survey of the specialty literature, extremely numerous perspectives for analyzing and defining virtual teams and organizations may be identified. In the case of virtual teams, for instance, these are considered to consist of a limited number of members sharing complementary abilities, who cooperate through mediation of the new communication technologies in view of achieving a common goal, their evaluation being realized relying on performance objectives, for the fulfillment of which members are mutually responsible [Katzenbach and Smith, 1993, p. 112]. Another encountered definition is offered by Lipnack and Stamps [*op.cit.*, p. 14], the two authors considering virtual teams as being teams inside which collaboration transcends differences in time zones, geographical distance and organizational barriers, by means of utilizing the new communication technologies.

Often, although an exceedingly high number of works and papers deal with topics concerning virtual teams, a most valid and clearly accepted definition cannot yet be found. Their complexity and diversity, distinct objectives, extremely various designs and types of tasks represent a series of obstacles in formulating a comprehensive and unitary definition [Zigurs, 2003, *apud.* Curşeu, 2007, p. 338]. However, a set of criteria, as the degree of interaction between members, the duration of existence, the utilization of technology as a support for communication or the degree of globalization might be mentioned in the analysis approaches [*idem*].

In what concerns the degree of interaction between members, it is much higher compared to the one met inside virtual groups [*idem*]. While in the case of groups, frequent and repeated interaction between members is not mandatory for maintaining functionality, in the case of teams, the number and duration of interactions, as well as the raised degree of interdependence among members, are essential to functioning and survival. As regards the duration of existence, according to Kristof, Brown, Sims and Smith [1995, p. 229], it might be noticed that members of a virtual team accomplish activities aiming to reach a specific organizational goal, during a well determined time period. After attaining its purpose, at the end of the prognosticated period of time, in most of cases the team is dissolved and members return to their originating organizations.

As for the use of new communication technologies inside virtual teams, the majority of definitions have a less restrictive character. A virtual team thus utilizes to a certain degree communication technologies in order to interact, but direct face to face meetings may also be settled in the course of the activity [Jarvenpaa and Liedner, 1999; Maznevski and Chudoba, 2000, *apud.* Curşeu, *op.cit.*, p. 338].

Finally, in what concerns the local versus global perspective, it might be

considered that local virtual teams consist in individuals working in the same geographical region, approximately similar from an ethnical and cultural point of view, while the global ones are composed of members of different nationalities, originating in various geographical areas, coming from diverse ethnical groups and cultural backgrounds [Montoya-Weiss, Massey and Song, 2001, p. 1252].

When reuniting these criteria, a series of features and characteristics can be selected in view of defining virtual teams. Thus, these may include two or more persons who collaborate in order to attain common goals, while at least one of the members is working in a different location, organization or time zone, so that communication and coordination would be predominantly accomplished through an electronic communications medium [Martin, Gilson and Maynard, 2004, *apud.* Curşeu, *op.cit.*, p.338].

With regard to defining virtual organizations, these represent organizations in which members are geographically dispersed and take action in view of reaching a common aim, by communicating and coordinating their activity via new communication technologies [Mezgar, 2008, p. 1580]. Virtual organizations may also be composed of semi-independent members, with distinct competences, working together to attain a specific goal through the mediation of the new communication technologies [*idem*]. They are often separated by geographical, temporal, cultural and organizational barriers and depend on the electronic support to fulfill working processes.

According to Townsend, DeMarie and Hendrickson [1998, p.19], five characteristics specific to virtual organizations exist: a flattened and horizontal structure, a high degree of inter-organizational cooperation and competition, a transition from the material production and services offer towards a knowledge based work, a strengthening of employees' participation in organizational processes, as well as an increase of assuming responsibility in front of results and a globalization and virtualization of activities.

Also, rounding the characteristics pointed out by Townsend and his co-workers, Camarinha-Matos, Afsarmanesh and Ollus [2005, p. 15] consider virtual organizations to be characterized by: dematerialization and delocalization - virtual organizations having no physical, clearly established workplace and most of the times carrying out their activity in no specific geographical zone, virtualization - new communication technologies being utilized for activities to progress, asynchronicity - virtual organizations being able to proceed with their activity even in absence of a real time communication, functional specialization and accomplishing cognitive tasks only.

Even if the analysis unit may be different, emphasis being laid on either the team or the organization, similitudes and interdependences between the two new forms of organization exist. A virtual organization, for instance,

might include virtual teams, while a virtual team could evolve and turn into a virtual organization.

3. Benefits and opportunities of accomplishing work in virtual teams and organizations.

If accurately built and implemented, virtual teams and organizations can bring along true organizational benefits and opportunities, by stimulating the efficiency, productivity, individual and collective performance and by increasing the collaborative effort. When utilizing the new communication technologies, the labor process in virtual organizations can be improved by raising the level of collaboration, by allowing a flexible working schedule and by increasing the efficiency of information transfer between members.

According to a synthesis of the specialty literature, four main types of advantages can be acquired as a consequence of appealing to virtual teams and organizations: an enhancement in creativity and innovation at work, a facilitation of organizational learning, a development of positive attitudes facing work and an increase in members' longevity inside the new organizational structures [Levenson and Cohen, 2003, p. 150].

Thus, teams and organizations where members come from diverse geographical regions and different domains show a high degree of innovating capability. Moreover, labor virtualization increases the possibility to obtain new and creative contributions in what concerns task solving and progress in the working process [*idem*]. Establishing interpersonal networks can also enhance learning capability both at an individual, as well as at a team or organization's level, increasing knowledge spreading and integration – the new communication technologies being able to make an important step in the advance of the knowledge management process [*idem*].

Since work is performed at a distance, members of the team are permitted to avoid dislocation to other geographical regions and to benefit from a flexible working schedule, so that satisfaction and positive attitudes towards labor may rise. Working in virtual teams or organizations also allows an understanding of the manner in which work at distance is done and a development of the relations that are electronically mediated [*idem*]. All these permit keeping members inside the new organizational structures for a longer period of time, virtual teams and organizations' longevity being higher when compared to traditional teams and organizations [*idem*].

Another synthesis of the advantages of work in virtual teams and organizations brings to the forefront a growth in innovation and synergy, a high efficiency and performance, as well as an improvement in team or organizational processes [Gibson and Cohen, 2003, p. 407].

Where rise of the innovation and synergy degree is concerned, the usage of new communication technologies may sustain members' participation, with an increased number of pieces of information and contributions to the

task solving process, solutions generated during the decision making processes and ideas emerging out of brainstorming processes being extremely numerous [Curşeu, *op.cit.*, p. 340]. Apart from the quantitative aspects of the involvement in task solving and generating ideas and solutions, the use of the new technologies of communication into the working process also positively influences the quality of cognitive contributions; the fact that ideas and solutions are often much more creative, when compared to those obtained following direct face to face interactions, being easily noticeable [Nemiro, 2001, p. 69].

Another important advantage materializes, in Gibson and Cohen's perspective [*op.cit.*, p.408], in the high efficiency and performance reached within the framework of virtual labor.

It has been remarked that virtuality may increase the number of participants and also their contributions to the solving of tasks, on the whole, members being more productive and more implicated into the working process. Even more, as work may be performed at distance, they can establish for themselves a more flexible working schedule and can have access to multiple information and knowledge sources, the large informational spectrum being able to enhance work quality. Since they often are geographically separated and possess each a computer of his own, work can be fulfilled 24 hours out of 24, members having the possibility to connect at any moment of the day, in order to also verify contributions of the other members.

At the same time, the collaborative effort and implication tend to be, if mutual trust and orientation towards the task are sustained, higher as compared to a team that accomplishes its activity in an unmediated way and, more than that, an ever increasing number of managers consider performance to be easier to evaluate inside virtual teams or organizations, under the circumstances of a large majority of the activity being accomplished electronically [*ibidem*, p. 407].

A third great direction for benefits linked to work in virtual teams or organizations is related to processes taking place inside of them. For instance, if necessary abilities exist, conflicts are sometimes easier to identify and manage in the virtual space.

Even more, communication can be explicit and sometimes misunderstanding issues may be avoided. Sanctions are less employed for the motivation of members, while cultural barriers and differences restrict the usage of incorrect influence [Elron, Shamir and Ben-Ari, 1999, p. 74].

Related to costs and benefits obtained at both an individual and a team level, it might be noticed that, on the whole, when correctly conceived, virtual teams and organizations can be less costly from the perspective of the progress in the activity itself, as well as from that of human resources expenses and salaries. Moreover, new training and coaching models may also be extended to other formative situations, while, from the individual

perspective, possibilities for career development and gain of task experience are higher, members being able to progress faster when compared to traditional teams and organizations [Levenson and Cohen, *op.cit*., p. 152].

4. Limits and challenges of fulfilling the working process in virtual teams and organizations.

None of the forms of organization is perfect, virtualization also bringing along, apart from benefits, a series of barriers and obstacles in the way towards reaching efficiency. Five major types of challenges that work in a virtual team or organization may generate are analyzed, having in view shortcomings of technology itself or in the utilization of new communication technologies, possible communication restraints, a higher risk for conflicts to appear, difficulty in organizing working processes and a problematic management of the evolution of a virtual structure [Gibson and Cohen, *op.cit*., p. 408].

In what concerns barriers raised by reliability of the technology, infrastructure quality and its capacity of permanently sustaining mediated communication, a sometimes difficult access to and a lower adaptability of members in utilizing the new communication technologies represent the main challenges that those who are working inside virtual teams or organizations might be confronted with [*ibidem*, p. 409]. Thus, members often get reluctantly accustomed to the utilization and specific nature of new communication technologies, mistakes frequently occurring in the course of the activity and diminishing work efficiency. Even more, errors in information storage and transmission may appear, putting at risk the good progress of tasks, as well as of the whole working process. Not verifying, by appealing to a specialized team, the safety of interaction platforms or propagating malware, for instance, represent some other problems that might endanger work progress in the virtual medium.

Considering deficiencies at the communication level, utilization of new communications technologies as a support for accomplishing informational exchange between members lowers the weight of nonverbal elements inside the act of the communicating process [Curşeu, *op.cit*., p. 340]. Nonverbal factors are essential to mutual trust emergence and commitment in social relationing [*idem*]. Thus, communication centered on trust and self-revealing is extremely reduced, while the absence of nonverbal elements may distort the reception and sense of the message. Moreover, information transmission may be corrupted, as each person develops with time an individual style of communication, which in some situations can be hardly deciphered.

Transmitted information may become the object of multiple interpretations, especially in multicultural contexts, and, within the framework of virtual collaboration, equality must be provided for the weight of every member's interventions, as a tendency often exists towards a

polarization of discussions and a not taking into consideration of many most relevant interventions [Gibson and Cohen, *op.cit.*, p. 408].

A third set of challenges is linked to conflict and the emergence of conflict inside the virtual medium. Consensus is much more difficult to reach in virtual teams and organizations, mainly because of technological issues [Hollingshead and McGrath, 1995, p. 78]. Cultural distinctions and differences in the working procedures and communication style level may increase the number of conflicting situations, the lesser degree of trust, especially during first stages in building of virtual teams and organizations, being able to enhance the ampleness and dimension of a conflicting process [Gibson and Cohen, *op.cit.*, p. 408].

At the same time, in virtual work, emphasis is laid more on task distribution, than on collaboration and cohesion growth, the collective comprehension often being low and the possibility of emergence for conflicting subgroups high, while proactive efforts towards conflict identification and conflict management are few.

Finally, the evolution of a virtual team or organization is difficult to manage. Work could be correctly accomplished, but increase in experience and competence might generate problems concerning the dynamics of positions. It is also difficult to evaluate the merit of each member and his personal evolution, while motivation techniques – rewarding especially – being difficult to be applied.

5. The optimization of virtual teams and organizations' functioning in view of increasing efficiency in working processes.

Many of the challenges and obstacles encountered during the accomplishment of working processes may demotivate managers and members of virtual teams and organizations; however, if correctly identified, these limits can become starting points for an activity optimization and an increase of work efficiency inside the virtual medium [*ibidem*, p. 413]. When analyzing the specialty literature, a vast number of suggestions is offered in this sense [Staples, Wong, Cameron, 2003, p.164; Gibson and Cohen, *op.cit.*, p. 414].

At an organizational level, it is thus useful that members of virtual teams or organizations are carefully selected, in order to generate a certain compatibility [Staples, Wong, Cameron, *op.cit.*, p.164]. The manner of working, skillfulness with new technologies and individual communication styles must be taken into account during the selection process, in order to create teams and organizations with a high functionality. At the same time, sufficient resources – especially informational – and guidance concerning task fulfillment and collaboration modalities must be offered, so that work in the virtual domain is efficiently accomplished [*idem*]. Standard procedures and methods of interaction must be provided in view of making work

efficient and emphasis must be laid upon building a culture of collaboration, where information transmission occupies a central place [*idem*].

Also in what concerns the organizational level, developing and maintaining flexible and flattened structures is extremely important. Sustaining decentralization, clearly establishing attributions and roles, norms and principles for interaction and cooperation, as well as sustaining leadership processes - all these together can favor the efficient progress of the activity and reduce misunderstandings and conflicts generated during task accomplishment [Gibson and Cohen, *op.cit.*, p. 413].

Moreover, a number of direct, unmediated meetings is recommended. An introductive appointment might be settled, for instance, so that members get reciprocally acquainted with each other, norms and principles of collaboration and interaction are established - while a task simulation, aiming at a clear understanding of work procedures, could be also carried out in this stage [*idem*]. Even after the formation of the team or organization, a program of direct meetings might also be maintained, with a rotation in appointment locations.

However, maybe one the most important directions of action, in view of optimization at an organizational level, is linked to the concordance between the specific nature of the team or organization, its task and utilized technology. Tasks implying idea generation, for instance, can be sustained by chat and electronic chamber discussion technologies – while larger teams, involving 10 or even more members, are predisposed to difficult reach of consensus, so that email, for instance, is more complicated to use in circumstances like these. The new communication technologies should sustain and encourage collaboration, offer maximal informational safety and facilitate efficient and secure transmission and storage of information.

One other direction of optimization aims at the managers and leaders' level [Staples, Wong, Cameron, *op.cit.*, p. 164]. Creating a climate of trust and equity, sustaining a continuous lateral communication and establishing a procedural justice can also make activity efficient.

Cohesion and group identity needs to be built, personalization of interactions being absolutely necessary [Gibson and Cohen, *op.cit*., p. 413]. Members can post on the interaction platforms photographs or short résumés, personal presentations, while the beginning of activity may be marked by a period of introduction to each other and of group self-acquaintance [*idem*]. At the same time, conflicts must be identified from the very first signs and conflict management should be proactive. Encouraging communication through information abundant channels, frequent and predictable communication and verbalization of adhesion to the team are also necessary, all these being able to help trust reconstruction [*idem*].

Cultural differences and similarities should be openly discussed, being extremely important that they are fully understood and accepted. Discussions concerning individual and cultural differences ought to include references to

both values and work practices, members often originating in diverse organizational and cultural environments and having thus acquired different types of experience in both a professional, as well as a cultural perspective [*idem*].

Members of the team must also be permanently sustained and motivated during the working process, giving feedback and offering a personal efficiency model being compulsory for the group leader. The goals should be clearly formulated, the working effort should be channeled towards a common direction and the management style should be adapted to the development stages and to the needs of the team or organization. Members' autonomy must also be promoted and inside the team it is important for self-regulating mechanisms to develop [Staples, Wong, Cameron, *op.cit.*, p. 164].

In what concerns the level of team members, these must already master a thorough knowledge or now develop their orientation towards the task, as well as their abilities in communication and utilization of the new communication technologies. It is important that they are strongly motivated and that they wish to help and to support their colleagues in the working process [*idem*].

In this direction, an implementation of training and development programs for members of the team or organization becomes necessary, in view of behaviour optimization and reaching the complete potential they own. Learning necessities for each member should be established, while transmission of assimilated knowledge should be constant, in order to facilitate organizational learning. The development of communication abilities into the virtual medium, of tolerance facing ambiguity, of utilizing new communication technologies, of teamwork and spreading information, of feedback and support offering may thus represent objectives for training sessions, especially conceived for those who work in virtual spaces [*idem*].

At this same level, establishing correct systems of evaluation and of rewarding performance is most helpful, 360° evaluations being extremely useful in virtual teams and organizations.

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