PREPARING STUDENTS FOR CHALLENGES RELATED TO VIRTUAL TEAM MANAGEMENT

Eva Kašparová – Jan Mareš

Abstract

The continuing digitisation of industrial and service sector increases necessity to reflect the situation and to effectively react on it to maintain essential level of competitiveness. This contains also cooperation within remote work teams. Thus new forms of work based on the use of ICT had become an integral part of economic life. Although the digitization process seems to be very fast and boisterous, it still shows a substantial margin in readiness to accept these changes adequately and effectively respond to them. Training future managers should primarily reflect these ongoing changes. The paper focuses on the experience of the students and their reflections to the training of virtual teamwork using open source system Moodle. We observe the possible drawbacks of virtual team management and suggest recommendations for education of future managers as they will likely face various challenges when working with remote team members. Discussion is based on improvement of the current training methods as well as the motivation for virtual teamwork increasing overall efficiency.

Introduction

The Internet economy started to be an integral part of human social life at present. Both generic and specialized ICT skills are becoming an important requirement for employment across the economy as the Internet becomes more engrained in work processes ("Skills and Jobs in the Internet," 2014). Internet creates relatively a large scale of the new jobs challenges and transforms jobs across the economy.

The Internet builds a new type of population with the special needs corresponding with the digitization process too. We can see that more than the 30 % of the world population could be characterized as a global online population and the number is still higher. In OECD countries

only 6 % of the population is categorised with the highest level of ICT skills meaning they can complete tasks involving multiple applications, a large number of steps, impasses, and the discovery and use of *ad hoc* commands in a novel environment ("Skills and Jobs in the Internet," 2014).

The very important figure seems to be the global time spent online per one month too. Gogulf states 35 billion hours spending online per one month which is equivalent to 3 995 444 years. ("How people spend," 2012) The other interesting finding comes from Palfrey and Gase who talk about the digital generation. "Digital natives were all born after 1980 when social digital technologies became widely used; they all have access to networked digital technologies and they have the skills to use these." (Palfrey and Gasse, 2010)

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On the one hand the present picture of the digital society shows the huge transformation of the traditional relationships to the new digital form with the accent to the opportunity to communicate together by a lot of present digital e-means and e-tools of communication. The significant part of the population i.e. the young generation especially should be prepared to operate in the Internet economy effectively. However the very important question still exists. Are these digital people really well prepared to work together by an ICT support? Do they have an adequate amount of the required skills and knowledge to work through the net?

On the other hand still another significant part of the population lacks the basic skills necessary to function in this new environment. As is written in the OECD material PIAAC data across economies reveal that between 7 % and 27 % of adults have no experience in using computers or lack the most elementary computer skills, such as the ability to use a mouse. In addition, the groups with the least ICT skills tend to be among the demographic groups at the most risk of losing jobs. Data also highlight a potential skills mismatch among those with the strongest ICT skills (youth) and those who actually use them at work - prime age and older adults ("Skills and Jobs in the Internet," 2014).

ICT skills are needed for jobs throughout the economy. The adequate ICT skills seem to be one of the key requirements of the present internet economy. Not only the skilled employees but what is needed too is the requirement of well - prepared managers and leaders to be ready to deal with the new reality, new requests and tasks in the present digitized business. This brings new challenges for teachers as well. Using the electronic learning environment the teacher also has to be familiar with content and community management (Padilla-Melendez & Rosa del Aguila-Obra, 2015).

1 Competitiveness in the digital age

The digital technologies underlying these competitive thrusts may not be new, but they are being used to new effect. Staggering amounts of information are accessible as never before—from proprietary big data to new public sources of open data. Analytical and processing capabilities have made similar leaps with algorithms scattering intelligence across digital networks, themselves often lodged in the cloud. Smart mobile devices make that information and computing power accessible to users around the world. The possibility to build relationships through the different applications, to build virtual teams, organizations and another forms of cyber societies increase and open new horizons as well as challenges in the all sectors of the global and regional economy. The companies know that the implementation of the ICT can reduce costs and improve their efficiency. Therefore the demands of ICT skills are still increasing.

As these technologies gain momentum, they are profoundly changing the strategic context: altering the structure of competition, the conduct of business, and, ultimately, performance across industries ("Strategic principles for competing," 2014).

The upshot is that digitization will change industry landscapes as it gives life to new sets of competitors. Some players may consider your capabilities a threat even before you have identified them as competitors. Indeed, the forces at work today will bring immediate challenges, opportunities—or both—to literally all digitally connected businesses ("Strategic principles for competing," 2014).

1.1 Effective virtual teamwork as a competitive advantage

Virtual teamwork has become one of the progressive forms of cooperation. The regular live chats on Skype or status updates on Facebook, which ensure one stays connected with his/her dispersed acquaintances, provide the social platforms for this 'virtual world' to exist. When these groups of individuals come together for a common cause or purpose with a shared vision, they form not just a 'team' but what we call today a 'virtual team'. (Bullock, 2010)

Virtual teams as the groups of individuals spread across different time zones, cultures, languages or, ethnicities which are united by a common goal. According to Powell, Piccoli and Blake (2004), virtual team is defined 'as groups of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks'. Generally virtual teams are formed for temporary period of time to achieve a critical task say, problem solving or new

product development. ("Virtual Team - Origin, Definition," 2015). Even though virtual team members rarely meet in person, they often are able to become participative workers with mutual respect and high level of trust (Gibbings & Brodie, 2008), which is often the key determinant of team's success or failure (Larsen & McInerney, 2002).

The ability to create efficient project teams suitable for the assigned tasks is considered one of the main benefits of the recent way of organization leadership. Many tasks taken up by today's organizations do not have known solutions and there are no established processes and techniques for these tasks. It is necessary to look for new ways, to think about them, to exchange experience, ideas and suggestions, to gather findings and to contemplate new possibilities, approaches and their benefits. Therefore, a virtual team that offers a possibility of borderless cooperation is flexible regarding both time and space which means that there is space for creating highly efficient teams consisting of competent specialists for solving particular tasks. (Kasparova, 2010). However, some studies show that also other factors such as internet speed and availability can have influence on virtual team's performance. (Weimann, Pollock, Scott, & Brown, 2013).

Also the offer of appropriate communication tools including tools enabling all team members to cooperate instantaneously remains far from sufficient. The range of accessible means of communication has been improving during the last decade. From the time of asynchronous means of communication such as e-mail and discussion boards, the possibilities of social communication have been broadened by synchronous means of communication such as chat, audioconferences, videoconferences etc. (Malhotra & Majchrzak, 2005)

The form of interaction is one of the most specific features of virtual teams. Having coworkers in different parts of the world and having to complete tasks with required quality and in time places high demands not only on the necessary specialized competencies but paradoxically mainly on human personality traits such as trustworthiness, reliability or openness. (Kasparova, 2010) To be well prepared or to be well trained to work flexibly across borders of the nations, organizations or workplaces and to be skilled how to orientate in cyber space effectively should be seemed as a one of the core stones of the progressive business building. The next step should be done is the perfect preparation of managers who will be decision makers and the main actors in people leading and organizations managing, who often use rather intuition and previous experience when leading virtual teams than learning from literature on that topic (Pavlisova & Seitlova, 2013)

1.2   The training of virtual teamwork example

The preparation of the students for work in virtual space has quite a long tradition at University of Economics, Prague. The students could try working in virtual space from the end of the 90ties. Even today a virtual teamwork training is still very popular among the students there. They evaluate positively time and space flexibility especially as well as the new "workplace" experience, the skills development and a lot of inspiration for a future employment and a job searching or building. The main aim of the courses is the excellent preparation to build or to work in virtual teams and to cooperate there effectively and fruitfully. The students increase the knowledge about the theory of virtual teamwork as well as about the virtual organizations too except the teamwork training. What they study theoretically they can train immediately practically. The courses run on the CMS Moodle. Moodle is as a modular application with the flexibility of the modules to adapt the current needs. As a freeware it is usually used in the schools. More than one thousand students have graduated courses based on virtual teamwork at The Department of Managerial Psychology and Sociology till now.

The participants of the courses have been asked each academic semester about their feedback. The feedback is designed as semi structured questionnaire with a several open questions where students can communicate their ideas, experience, comments, concerns, etc. The author of the course content and methods of learning as well as the course designer and webmaster use these reflections for an improvement of the critical points to be the course more acceptable for the next participants and of course well prepared for the mutual cooperation first. The findings serve as a basis for the theory of virtual teamwork too.

1.3   Methodology and data analysis

Data was collected through the feedback from students, which is regular part of the course at the end of the coursework. Each student is asked to complete a semistructured questionnaire which consists from several open questions oriented on different aspects of the course and the teamwork itself of course too. The main aim of the feedback is to get authentic insights, ideas and suggestions of participants. We decided to follow-up the previous qualitative analysis in last years and we started to sort the analyzed data into specific categories in the year 2013/14. We examined data obtained from 43 students. The sample represents students from years 2013-2014. They were asked to answer questions like what was useful for them during the course, what biggest problems they faced in relation to Moodle software and the course itself.

Due to the nature of data obtained, it was necessary to group the answers into categories. As for the question "What was useful for you in the course?" we set-up four categories: managing my own time, improved language skill, practical use of acquired skill and virtual communication as a first experience.

Tab. 1: What was useful for you in the course?

	Frequency	Percent
Managing own time	6	14,0
Improved language skill	8	18,6
Practical use	4	9,3
Virtual communication experience	25	58,1
Total	**43**	**100,0**

As we see in the table above, for most students it was their first experience with work in virtual teams and thus 25 of them found the possibility to even try this type of work useful. Moreover, 8 students found the usage of English language as a helpful attribute of this course.

Students were also asked to pinpoint the biggest flaws of the Moodle Course Management System. Majority of students (51,2 %) complained about chaotic design of the system (including layout, position of links and intuitiveness). Smaller group of respondents (39,5 %) found the absence of integrated chat feature as crucial. Students replaced this feature by using Facebook social network functionality and often complained they had to use more applications to finish their tasks.

Tab. 2: Biggest problems of CMS Moodle

	Frequency	Percent
Chaotic design	22	51,2
Absence of chat	17	39,5
Stability	2	4,7
No problem	2	4,7
Total	**43**	**100,0**

After giving their opinions on the system's flaws, students were asked to propose ideas for future improvement of Moodle. Table below shows their answers (again grouped into categories). 60,5 % of students stated that the design structure should be improved, 20,9 % proposed to implement better scheduling system and only 4,7 % proposed to improve user setting possibilities, then 2 students would change the platform completely and 2 students would introduce real-time chat feature in the system and 2 students were satisfied with Moodle as it is.

Tab. 3: Recommendations to improve Moodle

	Frequency	Percent
Improve design structure	26	60,5
Improve scheduling possibilities	9	20,9
Improve user settings	2	4,7
Change platform completely	2	4,7
Nothing	2	4,7
Implement chat	2	4,7
Total	**43**	**100,0**

We were also curious whether there is any difference in answers between males and females (as they might have different preferences and point of view on the usefulness of this course). Table below shows that differences were only minor.

Tab. 4: Usefulness according to sexes

Usefulness according to sexes

	Sex		
	Male	Female	Total
Managing own time	2	4	6
Improved language skill	1	7	8
Practical use	2	2	4
Virtual communication experience	10	15	25
Total	**15**	**28**	**43**

We also measured satisfaction of students with team communication (in relation to using only virtual tools), but also level of satisfaction of actual teamwork and getting things done. For this purpose we set up a five-point Likert scale ranging from very good to very bad. There was statistically significant ($p = 0{,}001$) positive correlation ($r = 0{,}499$, $N = 40$) between teamwork and communication in virtual space.

Tab. 5: Correlation between Communication and Teamwork

		Teamwork	Communication
Teamwork	Pearson Correlation	1	,499**
	Sig. (2-tailed)		,001
	N	40	40
Communication	Pearson Correlation	,499**	1
	Sig. (2-tailed)	,001	
	N	40	42

**. Correlation is significant at the 0.01 level (2-tailed).

Even though communication and teamwork might appear as the same things at the first sight, they are actually slightly different. Communication per se means the convenience of reaching the audience and delivering the message, whereas teamwork means reaching the goal set for the course. Analysis shows can see that there is positive relation between these two.

Based on this observation we were curious whether there is any difference in evaluation between the sexes. We conducted a one-way analysis of variance (one way ANOVA) to see if there is a statistically significant difference in the evaluation means.

The tests proved no statistical significance in means value of communication ($F(1) = 0,007$, $p = 0,032$), but seemed statistically significant in case of teamwork ($F(1) = 4,749$, $p = 0,036$). However the homogeneity of variances conditions was not met as the test came out statistically significant. Therefore we conducted Kruskal-Wallis test, which showed no statistical differences of sexes in evaluation of teamwork ($\chi^2(1) = 2.620$, $p = 0.106$).

Conclusion

The virtual teamwork is a very important form of co-operation at present globalized business practice. The adequate preparation to work as a team member of a virtual team and to improve the skills to build an effective virtual team is very important task for present trainers.

The findings from the analysis of the student´s feedback showed on the certain factors which students feel as a very important and useful. They evaluate very positively an opportunity to work cross borders of departments, cities etc. They evaluate positively the opportunity to work flexibly too. Most of them suggest to increase the offer of these types of courses.

On the other hand they fell very insufficient some factors as for example CMS Moodle usage.

We suggest that institutions that use Moodle as a tool for virtual team management education invest into customization of this open source software to fit better into the course's requirements without having students using other applications like Facebook. Implementation of real-time communication feature will enhance team's trust and efficiency. This will better prepare them for real-life situation, where They are forced to use their company's software and using Facebook, for example, is prohibited due to company's data protection.

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Contact

PhDr. Eva Kašparová, Ph.D.

University of Economics, Prague

W.Chuchilla 4,

130 67 Prague 3, Czech Republic

eva.kasparova@vse.cz

Ing. Jan Mareš

University of Economics, Prague

W.Chuchilla 4,

130 67 Prague 3, Czech Republic

jan.mares@vse.cz