



Virtual Project Risk

April Reed & Linda Knight

DePaul University, School of Computer Science, Telecommunications & Information Systems, 243 S. Wabash, Chicago, IL 60604,
F: (312)362-6116, areed7@students.depaul.edu, lknight@cti.depaul.edu

ABSTRACT

Virtual teams have evolved since the 1990's and are becoming increasingly popular for many reasons, i.e. securing the right person for the project, outsourcing, offshoring and the resulting need to work with global resources, as well as avoidance of travel due to cost and security concerns. Are there significant and important differences between virtual teams and traditional teams that are critical to successful project completion? This paper will discuss a research in progress aimed at identifying differences in successful virtual and traditional teams.

BACKGROUND

A virtual project is defined as a project where some or all of the team members are not co-located. These team members can be located a mile away, a state away or across an ocean. Powell et al define virtual teams, "Virtual teams are groups of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks".(Powell et al., 2004)

Most projects run into problems at some time before their completion. Before a problem actually occurs on a project, there is the risk of it occurring. If potential project risks are known before they occur, it is possible that pre-planning, i.e. a risk management plan, can prevent the risk or minimize it once it has occurred. Considerable literature has been written on the benefits of risk management. Boehm, an early proponent of risk management, suggested focusing on the top critical risks of a project to improve project success.(Boehm, 1991) The Standish Group, who produce the annual CHAOS report on information technology project success has reported very little improvement in the project success rate over the past several years.(Standish Group International, 2001)

The purpose of this research is to identify any differences in critical risk factors between virtual and traditional software projects. This study is important to determining the critical risk factors specific to virtual projects so that risk management for those projects can be appropriately focused. If a set of the most critical risks, specific to virtual projects, can be identified, they can lead to a customized risk management plan which should improve the chances of having a successful project.

RESEARCH METHODOLOGY AND RESULTS

Multiple research methodologies will be used to conduct this study. This paper will discuss the first part of a larger study. First, a survey tool was developed to identify risk factors for both virtual and traditional projects. The tool was submitted and approved by the institution's human subjects review board. Next, the survey tool was used in face-to-face interviews with a pilot group of information technology project management practitioners. The practitioners were encouraged to discuss hurdles encountered on two recent specific projects, a virtual project and a traditional project. The hurdles identified in the interviews were used to help develop a list of project risk factors. During the interview portion of this study, many risk factors were identified and charted. The following is a discussion of three of those risk factors: 1) communication, 2) management of remote resources and 3) trust.

Communication

Communication is important to virtual projects; it holds project teams together. There are many aspects of communication, such as the vehicle or tools used to communicate, the methods used to communicate, i.e. written or verbal, and the importance of non-verbal cues. One interviewee spoke about the importance of communication for a team that was located at two separate sites. Due to previous circumstances, there was an "us versus them" attitude between the two sites. Face-to-face communication was deemed important in this situation. The interviewee stated: "Once you put a face to a voice, you start to care about each other." Another interviewee commented on virtual team communication, saying "It is more difficult to communicate over the phone than walking over to the persons' desk to talk."

Technology and communication can come together to facilitate virtual team communication. One of the differences between virtual teams and traditional teams in the area of communication are the tools. On a virtual team, the tools may be the only way to share information vital to the project, i.e. requirements documents, coding specifications, documented processes and procedures. These are not just quick, back and forth messages; they are working documents needed to complete the project. Teams working across organizational, departmental or geographical boundaries often have problems exchanging information electronically because they reside on different LANs, they do not have security access to the necessary directories or there is no common storage location. One interviewee indicated these types of issues can impact projects and result in loss of time. An interviewee also pointed out the added importance of carefully planning and organizing communication particularly in virtual teams.

Obviously, it is very important for virtual teams to be supported by the necessary tools to communicate effectively. Virtual teams have the potential to be exceptional; but, they will need support from the companies that want to use them. Kirkman and Mathieu believe the resources important to virtual team success are: software tools and accompanying hardware, training and development in virtual team processes and most importantly, giving the teams the time they need to learn to work together in new ways.(Kirkman & Mathieu, 2005)

Management of Remote Resources

The difference in management style needed for remote resources was identified in the interviews as a factor that initially slowed down the project but improved over the duration of the project. One interviewee indicated managing remote resources was definitely different from managing on-site resources. The degree of importance this risk factor carries is probably based on an individual managers' comfort level with the concept of remote work. Unfortunately, managers are generally not being trained on how to manage virtual teamwork. One interviewee stated, "It takes longer (to do the project) when learning how to manage remote resources while doing it." A solution to improving this factor would be to provide training to managers on working with remote resources before they are assigned a virtual project team. The management skill sets for virtual teamwork may develop eventually over time; however, training could speed up the learning curve.

Trust

Walther et al define trust as "... an expectancy held by an individual or a group that the word, promise, or verbal or written statement of another individual or group can be relied upon".(Walther *et al.*, 2005) Trust becomes an issue in virtual projects particularly because it's difficult to believe what you can't see. One project manager who was interviewed said "I couldn't see if the people were working". This bothered him, so he developed ways to determine who was working and who wasn't. In this particular project, there were other negative things that were taking place on the project, so it is possible this impacted the ability to trust. It may be the case, that trust is improved by face-to-face communication. Since virtual teams have little or no face-to-face communication, trust could be harder to repair. Powell, et al listed trust as one of the eight major issues that early virtual team work identified.(Powell et al., 2004) Focusing on team building may improve trust on virtual teams. However, the real problem there will be how to engage in team building activities with remote resources.

OBSERVATIONS FROM THE INTERVIEWS

Conducting the first part of the study via face-to-face interviews resulted in rich data that is not possible to obtain through paper surveys. The interviewees often gave detailed information about problems that occurred and how they were resolved. All interviewees had managed virtual projects, making it likely that virtual projects are becoming a more common form of project.

An unexpected outcome of the interviews was the discovery that some project managers and team members had not participated in a traditional project in a number of years. Perhaps this is an indication that traditional projects are decreasing. Further research is needed to determine which type of project is more common today, virtual or traditional. A recent comment on virtual teams supports suspicions of their increasing role; "We believe that as we move into the future, various driving forceswill lead companies to use virtual teams as a norm and discover that the virtual experience may be preferable to meeting face-to face."(Jones *et al.*, 2005)

An observation from several of the interviews is that many companies seem to have evolved into using virtual teams without much thought, because it is cost effective, i.e. lower travel costs, lower office space overhead, less long-term payroll commitment. However, none of the

managers interviewed had been trained to work in this new virtual environment. In fact, there seemed to be very little formal support by these companies of the virtual team process.

CONCLUSION

In summary, it is possible for each of the risks discussed; communication, managing remote resources and trust to occur on traditional projects although each of these was only discussed in connection with virtual projects. The following two assumptions about being made about these risks, 1) these risk factors are more likely to happen on virtual projects due to the distance attribute and 2) these risks are more critical on virtual projects. Determining if these two assumptions have any validity is one of the objectives of the larger study. In other words, what still seems to be important is determining which risks are more likely to occur on virtual teams and which are critical, i.e. having the greatest impact on a virtual project.

The next steps in this study are to revise the survey tool based on feedback from the pilot group interviews. Then, to conduct a focus group of a different set of information technology practitioners to ensure the list of risk factors is conclusive. Finally, an online survey, based on the survey tool, will be sent to a larger population of practitioners.

REFERENCES

- Boehm, B. W. (1991). Software risk management: Principles and practices. *IEEE Software*(January 1991), 32-41.
- Jones, R., Oyung, R., & Pace, L. (2005). *Working virtually: Challenges of virtual teams*: Idea Group Inc.
- Kirkman, B., & Mathieu, J. (2005). The dimensions and antecedents of team virtuality. *Journal of Management*, 31(5), 700-718.
- Powell, A., Piccoli, G., & Ives, B. (2004). Virtual teams: A review of current literature and directions for future research. *The DATA BASE for Advances in Information Systems*, 35(1), 6-33.
- Standish Group International, I. (2001). *Extreme chaos*.
- Walther, J. B., Bunz, U., & Bazarova, N. (2005, 2005). *The rules of virtual groups*. Paper presented at the Proceedings of the 38th Hawaii International Conference on System Sciences 2005, Hawaii.

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/proceeding-paper/virtual-project-risk/32990

Related Content

Mathematical Representation of Quality of Service (QoS) Parameters for Internet of Things (IoT)

Sandesh Mahamure, Poonam N. Railkarand Parikshit N. Mahalle (2017). *International Journal of Rough Sets and Data Analysis* (pp. 96-107).

www.irma-international.org/article/mathematical-representation-of-quality-of-service-qos-parameters-for-internet-of-things-iot/182294

IoT Setup for Co-measurement of Water Level and Temperature

Sujaya Das Gupta, M.S. Zambareand A.D. Shaligram (2017). *International Journal of Rough Sets and Data Analysis* (pp. 33-54).

www.irma-international.org/article/iot-setup-for-co-measurement-of-water-level-and-temperature/182290

Semantic Measures

Yoan Chabotand Christophe Nicolle (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 4690-4698).

www.irma-international.org/chapter/semantic-measures/112911

The Analysis of Instrument Automatic Monitoring and Control Systems Under Artificial Intelligence

Qinmei Wang (2024). *International Journal of Information Technologies and Systems Approach* (pp. 1-13).

www.irma-international.org/article/the-analysis-of-instrument-automatic-monitoring-and-control-systems-under-artificial-intelligence/336844

Ubiquitous Computing, Contactless Points, and Distributed Stores

Marco Savastano, Eleonora Pantanoand Saverino Verteramo (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 7805-7813).

www.irma-international.org/chapter/ubiquitous-computing-contactless-points-and-distributed-stores/184476