

Can Computer Mediated communication be effective in globally distributed projects

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ABSTRACT

In distributed projects, proper communication and coordination between teams always plays a major role in the success of a project. In this global setting, teams can interact with each other, either by FTF (Face to Face) interaction or CMC (Computer Mediated Communication). This paper focuses on the process of computer-mediated communication discussing its pros and cons.

Keywords - FTF (Face to Face), CMC (Computer Mediated Communication), virtual teams, global software engineering, distributed projects.

I. INTRODUCTION

In the recent years, global projects have become a day to day term in the software industry. Due to the latest technological updates, globalization is easily achieved and implemented. Conventional teams are replaced by the virtual teams, which allow the organization to process more number of dynamic projects simultaneously [7]. This results in the application of more number of human resources into the projects. As the organizations perform this kind of task distribution operations globally, virtual teams need to interact with each other using different communication techniques [3]. As these teams can be diversified, in terms of location, there is a problem that FTF communication is not possible. This calls in for an alternative means of communication. In the present modern era, internet is a widely used tool for communication and hence, CMC is used as a tool for communication across virtual teams. We first try to define and look at the concept of virtual teams, the need for effective communication between the teams, and then we try to focus on the CMC and its effectiveness.

II. VIRTUAL TEAMS

The concept of virtual teams is defined as follows. Virtual teams refer to the capability of employees at different locations developing a project, to communicate with each other and share their work [1]. These teams may be very short in duration, from hours, to very long say weeks, months and years [9]. The teams may also be very large in numbers more than hundred to very small,

say two, depending upon the size or the nature of the allocated project [9]. So, in simple words, virtual teams is a group of members present at different locations, who try to communicate with each other and try to work on a project. Virtual teams are also known as Distributed teams or geographically dispersed teams [9]. Refer figure1 for team structures and communication paradigms which exists in that particular type of team.

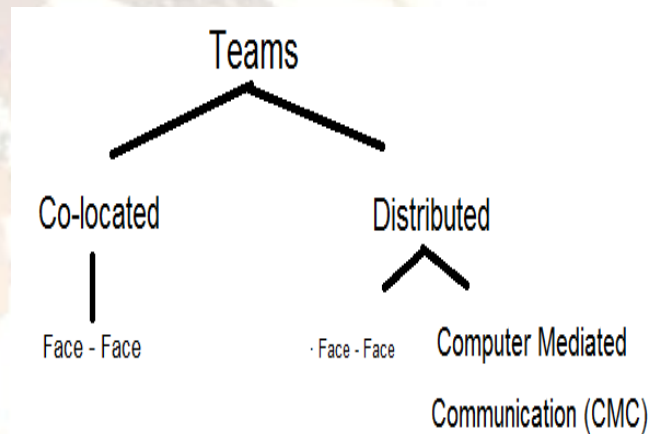


Figure1. Team structure and communication paradigms

Communication between the virtual teams is essential for the success of a project. The basic motives like co-ordination and trust can only be achieved if there is a proper communication happening between the teams. Failure in achieving so would result in loss of trust among the teams, reduction of co-ordination, and ultimately would result in the failure of the project. Since there is geographical disparity between the teams, it is not possible to have a face to face interaction between the teams. This calls in the need for CMC among the teams. The concept of CMC is discussed in the next section.

III. COMPUTER MEDIATED COMMUNICATION

“The communication that occurs through computer-mediated technologies (i.e., Email, Audio/Video Conference etc.) is called Computer Mediated Communication (CMC) [9]. In other words, CMC can also be defined as a system which

is used to intensify the capability of the employees to communicate effectively through internet [11]. In general words, CMC refers to the mode of communication that is possible through internet. There are some common traits for CMC. They are

- 1) “Distant less: Since the infrastructures of internet were constructed all around world, theoretically every person could use internet to communicate with others regardless of where he is.” [10]
- 2) “Transparency: Internet is an open platform for everybody, and the message on internet was coded in standardized forms such as text, graphics and animations. So basically every person has the ability to receive all messages from internet, unless the message was ciphered.” [10]
- 3) “Non-synchronization: Traditional media have the trait of synchronization, which means the message would be lost when the media content was expired. The message on TV or broadcasting could just be kept for a few seconds, and even newspaper could survive a few days. But CMC is different, the message on internet could be stored and retrieved multiple times, and be saved for years. This trait makes users easy to get message regardless of the time and space limits.” [10]
- 4) “Interactivity: Most traditional medias lack of feedback, the one-way communication style let just a few people could fully utilize the communication media. But CMC has a much more abundant feedback ways, like email, forum, bulletin board system, and blog. These feedback mechanisms let everybody has same opportunity to use internet.” [10]

In the present context, Computer Mediated Communication is the only way through which globally distributed teams, located at different geographical areas can communicate with each other. Generally, we can also consider FTF communication. But since, it is not the case of traditional teams and virtual teams are spatially separated in terms of distance, FTF meetings are not advisable as they result in waste of time and also increase the cost. For example, if a global project is carried out at the sites Sweden and India, if at all a problem should arise at the Sweden site, the personal from India cannot always travel to Sweden. This results in some time wastage and also the travel costs account to increase in expenditure. Instead of that, the Indian personal can communicate with the Swedish personal via CMC, which not only saves time, but also can reduce the costs considerably. CMC can be used to overcome the time and distance differences [4]. The effectiveness of a CMC is discussed in the next section.

IV. CMC EFFECTIVENESS

Now a days, the trend of global projects and co-located projects are practiced instead of traditional projects and teams. This is mainly due to the benefits that could be achieved through globalization [5]. So, for achieving the requisites communication, co-ordination and control, and to minimize the effects of geographical distance, we use the CMC for effective communication. CMC is the only solution for effective communication across different locations. The different forms of CMC are E-mail, E-chat and text-messaging, video and audio conferences etc. CMC is divided into synchronous communication and asynchronous communication where text messaging is an example for asynchronous and E-mail is an example for synchronous communication [9].

Factors Which Influence CMC:

Now, we come to the section where we discuss about the effectiveness of the Computer-mediated communication. Since the teams are distributed globally across different locations, trust and cohesion are the important aspects for the effective development of a global project. Without these aspects, the teams cannot function properly. When we consider the individual aspects, we can assess the effectiveness of CMC.

TRUST

Trust relates to the relation between human and human [6]. So in this regard, Face to Face interaction is more effective than CMC in building trust. “Social presence theory states that CMC lacks the ability to share socio-emotional information and cues needed to develop trust, warmth and other interpersonal affections, which individuals use to build trust” [2]. But since we mentioned that Face to Face communication increases the costs and reduces time wastage, and also, with the help of tools like video and audio conferencing, we can also enable a virtual face to face environment between the teams. Hence, CMC is effective in building trust.

COHESION

Cohesiveness is also a quality which is important in global projects. Interaction between the teams is highly essential for the effective cohesion between the teams. Without proper and direct communication, the teams tend to lose the cohesion and co-ordination factor. CMC enables the teams to collaborate and communicate with each other. Instant messaging and also, offline messaging tools are present in CMC which help the teams to have a continuous track of the work done by other teams. A research works on this topic also describes that cohesiveness is achieved at the highest priority between the employees communicating through video-conference [9][12].

TASK COMMITMENT

Apart from these factors, there are components like task commitment which are also increased and are at their highest when the communication is done through video-conferencing which is a part of CMC [9]. CMC also increases the effective outcomes of virtual teams by enabling teams to collaborate in order to resolve defects [8]. Since, the basic factors of software development on global projects like trust, cohesion and task commitment are realized in CMC, we can assume that it is effective. But this can only be possible if the team is cohesive. Without the cohesion factor, there cannot be any advantage in the teams communicating with each other. So CMC will be least effective in such a case. And also, the basic idea which was considered is that Face to Face communication would result in increased costs and time wastage in the cases of globally distributed teams. So taking this factor into consideration, CMC is effective in this regard. But if the geographical distance between the sites is not too great, definitely Face to Face communication is much effective than Computer-mediated communication.

V. ANALYSIS & DISCUSSION

Computer-mediated communication is an important aspect in GSE that should be used by the teams for effective communication over large distances. We specified the requisite as large distances because if the geographical distance is small, then Face to Face communication is the best preferred one over CMC. For example, if the sites are in Sweden and Poland, the employees can directly participate in a meeting because the distance is less and that would be very much effective. But if the sites are at Sweden and India, face to face meetings would result in wastage of time and increase in expenditure. In such a case, CMC would be the best alternative for effective communication. The introduction of CMC was one of the main reasons that distributed teams took over the traditional teams and hence, globalization has become a common verse in the recent days. Though it has many advantages over Face to face communication, CMC alone cannot bring out revolutionary changes in the performance optimization. The individuals and the teams participating in the events are the key aspects for the overall development [9]. For example, if the team lacks commitment and interest towards the project, in such a case, in spite of conducting numerous CMC meetings, the productivity will still be very low. Also, CMC depends on various factors like effective tools for video and audio conferencing, internet connection of the required standard, personal who can handle the tools effectively and so on. So, CMC is an effective tool for distributed projects provided that, the geographical distance is large and the teams participating in this type of

communication are motivated enough to cope up with the task.

VI. CONCLUSION

Globally distributed projects have become a trend in the modern day world. Since all the organizations strive to internationalize their company and to globalize their product, it is a pre-requisite for them to allocate globally distributed projects. We have presented a discussion on one of the widely chosen communication paradigms, Computer mediated communication (CMC) reporting a complete analysis with advantages and shortcomings of its usage in the global scenario.

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