ETM
ENGINEERING & TECHNOLOGY MANAGEMENT

Challenges in managing projects in a distributed environment.

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Executive summary

Successfully managing projects in a distributed environment is not something that will just happen. Project management in a distributed environment has complex challenges and issues that must be dealt with in addition to the "regular" project management challenges.

In order to deliver successful project in such an environment the entire team must understand the challenges that are related to the distributed nature of the team (For example: the project manager might be located in a different geography then the development team etc…) and embrace the needed behavior that is required to deliver successful projects.

In this project I will present few of the main challenges and few solutions, I will also incorporate some of my experience as a senior project management for the past 15 years.

As part of this project I have read multiple articles and publications and also used my own experience.

The evolution towards distributed project management drives the need for improved processes, methods and tools to input and share common data. The need applies across the project life cycle and among all or selected elements of the team. In our global economy, there's a growing need to decrees the time it takes to make an informed decision, to improve the team's decision velocity.[1]

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[1] Nidiffer and Dolan 2005

About this project

Over the past 15 years I have been involved in multiple projects, the majority of them were with distributed project teams. (I started my career in Intel Israel and was managing projects with teams across all of Europe, approximately 9 years ago we moved to Oregon and since then I am managing global projects with teams cross the globe). Managing this type of project always had the regular expected project "challenges" and in addition they had the distributed team additional challenges. In this project I will look at some of the key challenges and the ways to resolve and/or reduce their impact on the project.

My objective in this project is to review the current literature that describes the challenges distributed project management have and to offer few methods for reducing the impact of these challenges.

My research question – What are the key methods for reducing the impact of managing a distributed project team.

What is not part of this research?

1. I will not do a comprehensive and complete literature review, I will look at multiple sources (both books and articles) but in no way I will try to call this a comprehensive list that covers all the current research in this area.
2. The conclusions of the research are not statistical. The outcome is based on my experience and the literature that I will review.

Problem statement

"The evolution toward distributed project management drives the need for improved processes, methods, and tools to input and share common data. The need applies across the project life cycle and among all or selected elements of the team. In our global economy, there's a growing need to decrease the time it takes to make an informed decision, to improve the tam's decision velocity"[2]
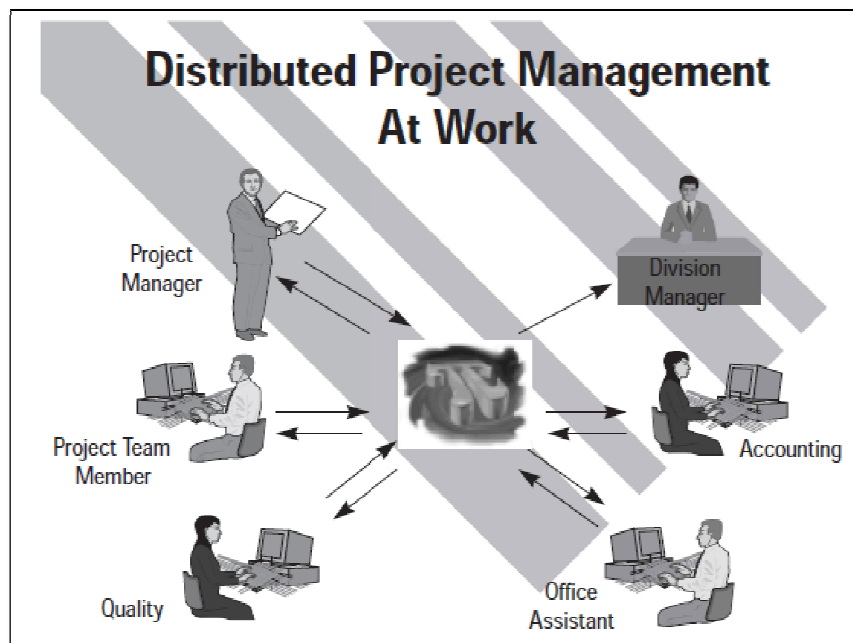

Distributed teams have a unique set of challenges (In addition to the same problems faced by co-located project teams). Most of these are related to the lack of effective project management communications, my experience and the research have shown that there are four major factors contributing to these issues.

Physical distance.

Whether the project members are in different buildings in the same city, or in different countries leads to a lack of collaboration. In 1977 Dr. Allen, Thomas conducted a research to determine how the distance between engineers' offices affects the frequency of technical communication between them the outcome is known as the Allen Curve.

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[2] Nidiffer and Dolan (2005)

With the fast advancement of internet and sharp drop of telecommunication cost, some wonder the observation of Allen Curve in today's corporate environment. In his recently co-authored book, Allen examined this question and the same still holds true. He says "*For example, rather than finding that the probability of telephone communication increases with distances, as face-to-face probability decays, our data show a decay in the use of all communication media with distance (following a near field rise).*" [p. 58] He further explains "*We do not keep separate sets of people, some of which we communicate in one medium and some by another. The more often we see someone face-to-face, the more likely it is that we will telephone the person or communicate in some other medium.*" [p. 58][3]
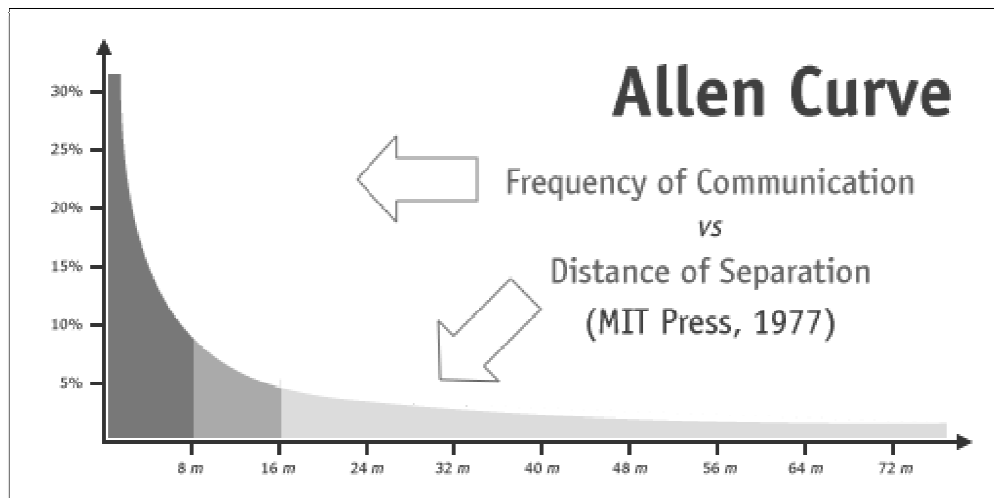
People will not collaborate very often if they are distant. The natural tendency of distant participants not to collaborate with each other leads to distancing from the project and its objectives.

Working is different org's

There are many situations in which ideas and knowledge from multiple organizations must be brought together to resolve a specific problem. The fact that the project members are working in different organizations makes it difficult for project participants to easily share project information. In these circumstances, participants often e-mail documents to each other. This technique becomes burdensome when there are many participants or documents under constant change. One of the Key issues in cross org's

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[3] Allen, Thomas J.; G. Henn. *The Organization and Architecture of Innovation: Managing the Flow of Technology*. Butterworth-Heinemann. pp. 152.

groups is the awareness to change. It is not easy to make everyone instantly aware of a change in project objectives, schedule or work specification. The greater the number of team members involved, the more likely it is for information exchange to become a source of lost productivity.

Time zone

Project members in different time zones have difficulties establishing real-time meetings, such as conference calls. There is the inherent problem of one person's workday ending before their colleague's day begins, compounded by a lack of awareness of when someone is available to speak in real-time. Often times a distant project member is working at the office or at home, but other project members are not aware of their availability.

Language and culture

Misunderstandings between project members can lead to mistakes, delays and lost opportunities. In many instances if project participants speak different native languages, they may not feel comfortable in real time meetings and conversations. These people will often speak less and/or not speak at all during meetings and/or conference calls, this might cause missed opportunities to surface issues\problems, present new ideas and\or to present solutions to known problems.

Methods

For this project I will base my theoretical ideas on the current literature that deals with distributed project management, I will use the theory and my experience to analyze the issues and to come up with recommended solutions.

Managing projects in a distributed environment

As an organization moves to manage distributed projects there are some critical changes that the organization needs to adapt to, below is a high level list of changes:[4]

From	To
fixed team membership	shifting team membership
all team members drawn from within the organization	team members can include people from outside the organization (clients, collaborators)
team members are dedicated 100% to the team	most people are members of multiple teams
team members are co-located organizationally and geographically	team members are distributed organizationally and geographically
teams have a fixed starting and ending point	teams form and reform continuously
teams are managed by a single manager	teams have multiple reporting relationships with different parts of the organization at different times

Managing projects in a distributed environment has its challenges but we mustn't forget that it also has some key advantages. Before I start to look into the disadvantages I will provide a quick review of the key advantages.

1. **Talent:** Allows the project to find the best people that will help the project be successful. If in the past we were confined to the people in your local group today you can tap into a global talent pool to find the best people for the job.
2. **Diversity in creative thinking:** Distributed teams benefit from larger diversity and better creative thinking; this can help identify ideas and solutions to issues that come up during the project lifecycle.
3. **Faster development cycle:** Due to the different time zones project progress can happen around the clock and development can move faster.

The advantages above are critical to project success but there are also critical challenges and issues that are caused by the distributed nature of the project team.

4 Text of speech given by Lisa Kimball for Team Strategies Conference sponsored by Federated Press, Toronto, Canada, 1997. Lisa Kimball is the Executive Producer of Group Jazz (www.groupjazz.com).

The most common complaints of teams with the above characteristics, based on studies conducted at the University of Michigan (Jang et al, 2000) and a survey conducted by Harris Interactive (WFD Consulting, 2001), are the following:

- Lack of awareness of what remote team members are doing on a daily basis
- Lack of awareness regarding each other's availability
- No knowledge of colleagues' key task requirements and deadlines
- Lack of knowledge about how team members felt about an idea or suggestion
- Getting in touch
- Ineffective meetings
- Lack of awareness regarding changes.

As a project manager that has an overall responsibility for the project success and failure he must ensure that all the possible issues above are dealt with and counter measures are taken in order to ensure project success.

Dealing with the issues

The first thing that needs to change is the management mind set moving from the face to face mind set to the virtual mind set.

A New Management Mind Set

Some critical aspects of a virtual teams project manager mind set must change in order to be as effective and drive a successful project in a virtual organization. (based on paper which came out of a joint inquiry between Metasystems Design Group and Catalyst Consulting Team which resulted in a paper (in press) "Boundaryless Facilitation")

The mindset must change to, from:

From	To
Face-to-face is the best environment for a	Different kinds of environments can

successful project.	support high quality interaction. What matters is how you use them.
Collaboration is what happens when teams interact at a fixed time and space.	Collaboration happens in an ongoing, boundary less way.
Being people-oriented is incompatible with using technology.	Using technology in a people-oriented way is possible and desirable.
When the communication process breaks down, blame the technology.	When the communication process breaks down, evaluate our management and interaction strategies, not just the technical tool.
Learning to manage virtual teams is about learning how to use the technology.	Learning to manage virtual teams is about understanding

A mind set change is the first and most important change that needs to happen in an organization, no technology can compensate for a "wrong" mindset of a project manager.

A New Management Style

Managing a virtual project teams is not very different then managing a local project teams: Successes don't happen by chance. There has been a lot of excitement about the potential of online networks to provide new environments for teams, communities of practice, and learning. But virtual meeting experiences can be frustrating and disappointing when interaction with others in the group results in information overload, topic drift, or conversations that are just not all that valuable. When a face-to-face meeting doesn't "work" we tend to look at our meeting design and our role as facilitator for insights about why things didn't go the way we had hoped. When using groupware and other technologies, we tend to blame the technology[5]. Instead, we need to extend our level of consciousness about group dynamics to include understanding of what happens when people interact using new media. Different media raise different sets of questions for managers. The important thing is to be sure that you are asking all the same questions you would ask yourself when thinking about the dynamics of any project team.

Key factors for success

Purpose

Explicit purpose is a critical factor in the success of virtual project teams; you must create a very clear and concise project charter, gain full commitment from the project team. Lacking face-to-

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[5] Amy Eunice at the annual Organization Development Conference, Scottsdale, AZ, 1997

face meetings, a virtual team may need more frequent and more explicit check-ins about their purpose. On the up side, the technology environment may provide some advantages because it provides multiple ways to remind team members about purpose.

Roles

Project managers must help their virtual teams identify the roles in the same way required of all teams. Virtual teams might need to define some additional roles. They may need technical support, knowledge archivists, and specialists in using different media. For all roles, virtual teams need to spend more time being explicit about mutual expectations between all the roles.

Culture

Doesn't matter what technology, processes, media or combination of them you need to think about the different culture of the virtual project team members. As the project manager you have to use the methods and tools to help the project team be successful and at the same time support the different cultures of the team members?

Participation

In a local project team, project managers watch body language and facial expression and lots of other signals to develop a sense of what's going on. Participants in virtual teams convey this same information in different ways. It's important to find ways to base your sense of what's happening on data. It's amazing how often your impressions of what's happening can be off base because we're not used to reading the cues people give out via new media.

Flow

There isn't a one size fit all or a "right" thing to do in order to drive success in a virtual project team. In a virtual project team environment a project manager also plays the role of the facilitator for the team and as such you must pay attention to what is happening in your project group, in addition to what you wanted or expected would happen. For example: if project members aren't participating as much as you'd like them to participate, don't admonish them (or blame the technology). Instead, work with them to help move them in the direction you need to go.

Some of the key ideas to keep in mind are:

- teamwork is fundamentally a social activity
- knowledge is integrated in the life of project teams and needs to be made explicit
- It's important to create ways for project team members to "be part" of the project team.

- In order to get your project team engaged empower them.
- Project team member "failure" to perform is often the result of exclusion from the project team activities and\or processes.

Technology

In today's world, technology plays a critical part in the ability to successfully drive virtual and/or distributed project teams. The technology can be broken into a few buckets\groups (with every technology bucket you have the enterprise tools, small scale tools and also free tools) :

- Project management tools.
- Instant communication tools
- Document management tools
- Project team collaboration tools.
- Virtual meeting collaboration tools.

In the next section I will not be preforming a comprehensive product review and or product feature review; I will just list a few examples of the tools that are in the market today

Project management tools
- The most common enterprise and local project management tool is the Microsoft Project & Microsoft project Server.
- AceProject
- Task Management

Instant communication
- Microsoft instant messaging.
- Google Talk.
- Yahoo messenger
- Etc…

Document management
- Microsoft share point
- Filocity (has additional capabilities for project management)
- Task Management

Team collaboration, Virtual meetings

- WebEx
- Lync
- AceProject

Summary

Distributed project management has the exact same goals as local project management. The project manager cares about the same 3 things – Scope, Schedule and Cost (resources). The one critical difference is the distributed manner.

In order to deal with this aspect of the project and to successfully drive the project to completion the project manager needs to ensure that he both has the right tools and also that he changes his project management style to enable the success of the project.