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New Approaches to Managing Complex Projects

by Anna Oswald

Back in October, I had the opportunity to attend the Project Management conference in Denver, Colorado. It is an annual conference organized by the Project Management Institute (PMI). Every year PMI holds four conferences in four locations covering most of the world – North America; Latin America; Asia Pacific; and Europe, the Middle East, Africa.

This is the second time I attended this conference. What was different this time, besides the record participation of over 4,000 program and project managers, was the variety and selection of topics. Past conferences have focused primarily on the project management standards and guidelines, known as PMBOK (Project Management Body of Knowledge). This year, a number of presentations explored other aspects of project management, with several focusing on new trends. Agile project management continues to be a hot topic, with presentations ranging from agile project management in the changing business environment, to application of hybrid agile project management methods.

The presentation by Global Project Design's Patrick Murray and **Susan Thomas** on "Designing Complex Projects" stood out for me because it offered an innovative way of thinking about complex projects. While you may find these ideas too revolutionary and forward looking to be considered for immediate implementation, they provide an outline for some future trends in the project management, particularly when viewed in the context of recent developments in the area of agile project management.

In the News *(continued)*

The main premise of their presentation was that the business environment and projects are increasingly complex due to the use of the remote teams and multi-cultural business relationships. As a result, some of the project management principles considered the industry norm need to be re-examined and adjusted. One of the areas requiring re-thinking is project initiation and planning. It comes out of a need to design a project in such a way that it allows accommodating for the unknowns.

With projects becoming more complex and global in nature, the amount of coordination increases, as the project manager has to deal with time, culture and possibly even language differences. These global factors can increase the amount of coordination required two or three times over. However, coordination often goes unrecognized, resulting in optimistic schedules and budgetary overruns. Even when coordination effort is acknowledged and accounted for in a project budget and schedule, it is challenging to accurately forecast the required level of effort.

So how can you account for coordination? First, there is a direct relationship between coordination effort and project complexity. The following factors contribute to the project complexity and signal that a significant coordination effort will be required:

- Project size
- Teams from different time zones, work cultures, and abilities
- Complex dependencies between activities/tasks
- Concurrency in activities/tasks
- Relationship between projects
- Complex decision making process
- Stability of Requirements (expected results difficult to predict)
- Maturity of Technology
- Process Maturity

Once a project manager concludes that a project requires some coordination effort, he or she can predict the amount of coordination effort required to effectively complete the project by using the following formula –

Coordination = Dependence X Distance, where

Dependence is demand for coordination between the teams and

Distance is team's ability to coordinate with others

In the News *(continued)*

To predict Distance, the following criteria should be considered:

- How large is a project team? Are the members in the same building?
- How many time zones separate the teams?
- How many projects have they worked together before?
- Do they share the same native language?
- Do they share the same profession/function?
- Do they share the same direct boss?

The formula, along with these indicators, helps the project manager recognize project complexity and estimate coordination effort. However, to accurately predict the level of coordination, the authors propose a more complex approach that leverages methods typically employed in product development, such as building prototypes and running simulations to identify and select the most optimal project plan. Identifying and analyzing several possible project approaches during the planning phase helps the team to be more flexible in the implementation phase. The ability to rapidly switch to another project approach helps teams address internal and external changes, such as changes in the project requirements, stakeholder priorities, or earlier delays.

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