Project Management & Software Development Methodology

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Overview

Aside from the commercially available methodologies such as Prince 2 and Rational Unified Process, there are many methodology developed to suit individual organisations. This white paper sets out to provide a better understanding of methodologies, and how they can be developed and implemented.

Project Management Methodology v Application Development Methodology

It is important to differentiate between a project management methodology and an applications development methodology or software development methodology. A project management methodology covers all the things a project manager needs to do regardless of whether it is a software development, package selection, or relocation of his department project.

PMBOK (Project Management Book of Knowledge – the PMI bible) covers nine areas of project management. They are:
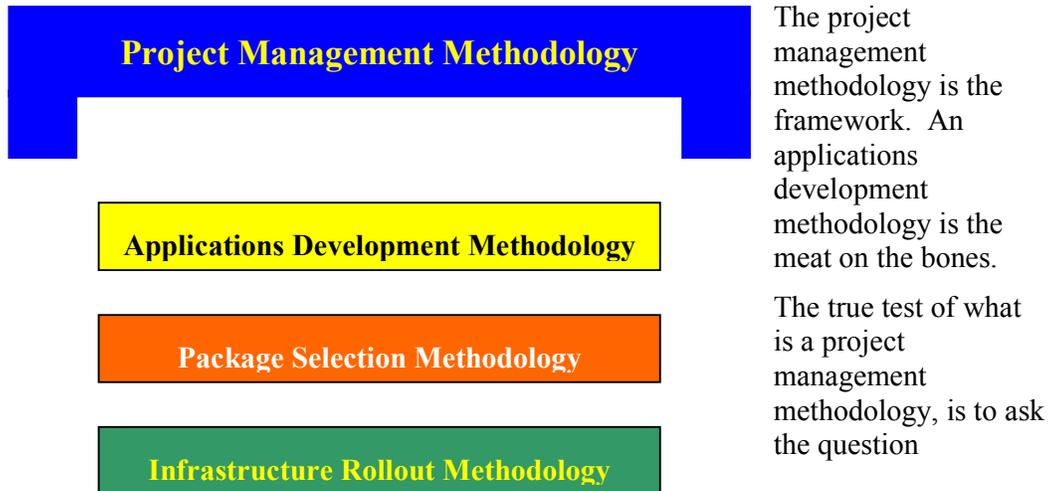
- Cost Management

- Risk Management

- Scope Management

- Resource Management

- Communications Management

- Quality Management

- Time Management

- Procurement Management

- Integration Management

You will notice there is nothing mentioned about requirements or testing or vendor selection. That is part of an Applications Development Methodology or Software Development Methodology.

Distinction between Methodologies

- A project management methodology says projects should be broken down into phases and there should be a plan in place before each phase begins. An application development methodology says what the phases are, and what activities should be undertaken in each phase.

- A project management methodology says define roles and responsibilities. An application development methodology defines what the roles and responsibilities are in the development phase.

- A project management methodology says a budget should be put in place and managed. An application development methodology says what the account codes for a development in your organisation should be.

Project Management Methodology

Applications Development Methodology

Package Selection Methodology

Infrastructure Rollout Methodology

The project management methodology is the framework. An applications development methodology is the meat on the bones.

The true test of what is a project management methodology, is to ask the question

"Could you put other meat on the same bones?"

For example, you might have a package selection methodology which could plug into the project management methodology and fit just as well. The difference is that it is a different set of activities, roles, responsibilities, risks, etc.

Why Is It Important To Draw the Distinction

It is important because any organisation should have a consistent project management methodology in place which is common to all types of project. In this way, people can move comfortably from applications development, to infrastructure roll out, to software selection to even relocating to new buildings using the same approach.

Training people in project management can take place prior to them learning how to do a development, or select software or even to do some ad hoc project that does not have a defined methodology. People need to know they should manage scope, and how to do it. They need to know how to set up a budget and manage it. They need to know how to do a risk assessment and manage risks.
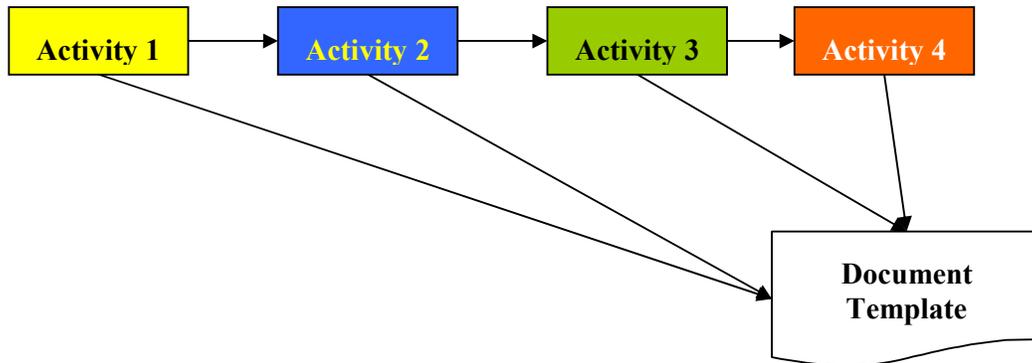
A Methodology is not a Template

Another area of confusion is that people get mixed up between templates and methodologies. When you ask people if they have a methodology, they say "Yes. We have some templates."

A typical evolution is for an organisation that has no common way of doing things to develop templates in order to get some consistency in how things are presented. In fact you are saying "Here is a checklist of things you need to consider". The next stage is to add some instructions in the template which explain what each section means. Alternatively they might create a template user guide. Finally they may

develop a process or methodology which tells people how to get the information that ends up in the template.

There is often confusion between templates and process.

- Process is a way of doing things by doing a number of activities in a certain sequence

- Templates are used for the collection of the output of the process.

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┌───────────┐   ┌───────────┐   ┌───────────┐   ┌───────────┐
│ Activity 1│──▶│ Activity 2│──▶│ Activity 3│──▶│ Activity 4│
└───────────┘   └───────────┘   └───────────┘   └───────────┘
                                   ┌──────────────┐
                                   │  Document    │
                                   │  Template    │
                                   └──────────────┘
```

Just because you have templates, it doesn't mean people know how to gather the information that goes in the template. A template may have a heading called "Security". The actual process may be something like:

- Discuss the project with the applications security manager and identify what actions will be required to meet corporate standards

- Review how the project will be affected by the new security standard being introduced by architecture. This is best done in a workshop with the following people ………………….

- Talk with network administration and identify any network security implications

- Meet with Microsoft and discuss any security patches that may need to be distributed with the software.

- Etc.

If only a template is available, the person filling in the template might know nothing of the activities above. The entry might read "Not applicable to this project". This is the difference between a template and a process or methodology.

What should a methodology cover?

The following topics should be covered in any methodology:

Breakdown	How is the overall project broken down into smaller components such as phases
Overview	What is the purpose, objectives, deliverables and typical timeframes for each component

Activities	What are the main activities
Inputs and Outputs	What are the inputs or prerequisites for each activity? What are the outputs or deliverable of each activity
Instructions	How do you carry out each activity
Participants	Who should be involved in each activity
Supporting materials	Tools, checklists, templates and other material that can assist the activity
QA	How do you manage quality at either the phase or activity level
Timing	How to estimate the time for each activity
Governance	What authority is applicable? This may include approvals, gates to be passed, mandatory activities and sign-offs.

Using a Methodology

Any methodology is not the way all projects will operate. It is a best fit. There will be variations for very good reasons. That is not to say it is variable at the whim of each team. There needs to be some guidance provided as to what is the sensible pragmatic approach for each project.

Gartner research found that a methodology applied loosely could improve productivity by 30%. Applied rigidly it improved product by only 10%. It should be a help to the project, not a hindrance. If you want to have your organisation use a methodology, there needs to be some champion who people have access to for help.

Objections to Using a Methodology

The following are some objections I have encountered, and how to address each objection:

It stifles my creativity?

- Creativity should not mean "I will make it up as I go along". It should mean "I have a mechanism to recognize problems and use my creativity to solve them". In a project creativity needs to take place within a controlled environment. Unless there is a structure in place, the hundreds of evolving details and problems cannot be managed.

I have my own methodology

- Any of us who have worked in a number of organisations usually do. The reason to use the company's methodology is that everyone else is geared up to operate within that methodology. It will cause confusion to everybody but you if you use your own process.

My methodology is better

- A company should have an area responsible for reviewing and improving methodologies. That is the venue to promote a new methodology.

The methodology is not applicable to my project

- If not why not. What components are applicable, and how can other processes be included to link those together. Going back to the project management methodology, what new activities, roles etc. need to be developed.

The methodology (or template) has too much information

- Treat it as a checklist. If something is not applicable, justify why and make a comment. It might be a situation like the security issue mentioned earlier where the person just does not understand the process properly.

There is too much paperwork

- A couple of points here. Firstly ask what information is being duplicated? Sometimes a slight rearrangement of information may result in a "refer to document x" solution, or a cut and paste.
  Secondly, it is cheaper and easier to throw away paper rather than code. Programmers love to get their hands on the keyboards, but it is more efficient to build something on paper before you build it in code.
  Thirdly, examine each document and see if it is really needed. I did this exercise with a CFO who made a comment about the amount of paper we were generating. After we went through about ten documents he had on his desk, he had found a reason to receive every one of them. It was just he was not used to seeing agendas, minutes and weekly reports.

Implementing a Methodology

A methodology is not a series of templates. It is a process that needs to be adapted to suit each situation. There needs to be someone who teams can talk with - someone who will mentor the teams in the use of the methodology.

One of the most successful implementations of a methodology I have been involved in is a government department. They have a full time methodology coordinator who trains, works with teams, and builds their feedback into the methodology.

Feedback is also important. The methodology will not stand still. It will evolve and become more applicable to the organisation. As such, there needs to be a mechanism in place to cater for "learning from experience".

Take it step by step. A massive change to the way people work is not as likely to succeed as incremental change. If your goal is to have people produce a plan for every phase, start by having them produce some sort of standard plan for the whole project. If you decide to introduce three gates for approval of funds, introduce them one at a time. You will probably find after the first gate is in place, your experiences will indicate that you need to slightly change the process for the other two gates.

Availability is another issue. Asking people to read a 400 page manual will not work. Giving them some high level training, and presenting information in a format where they can find the bit that is relevant to what they are doing right now has more chance of success.

A well structured, web based presentation is a must. People need to be able to drill down in a few clicks to find out what is relevant to them at the moment. Training them on the layout of a methodology web site is likely to have more impact then training them on the detail of the methodology.

Summary

Putting some templates in place is a nice first step, but it is not a methodology. Make sure you understand the difference between templates and process. Also understand the difference between a project management methodology and other methodologies.

To a lot of people methodology is a dirty word. It means bureaucracy, paperwork and constriction. You need to overcome this by providing support and flexibility in how it is applied. I have yet to see a methodology succeed by just presenting people with a series of books and templates.

Finally, learn to walk before you run. Introduce simple steps into the methodology first, and leave the more complex until later. Understand you are trying to change the way people work and think. There is bound to be resistance. Turn the ship slowly or you will find yourself making little or no progress.

Neville Turbit has had over 15 years experience as an IT consultant and almost an equal time working in Business. He is the principal of Project Perfect. Project Perfect is a project management software consulting and training organisation based in Sydney Australia. Their focus is to provide creative yet pragmatic solutions to Project Management issues. Over the last decade and a half, he has helped many organisations develop and implement methodologies

Project Perfect sell "Project Administrator" software, which is a tool to assist organisations better manage project risks, issues, budgets, scope, documentation planning and scheduling. They also created a technique for gathering requirements called "Method H"™, and sell software to support the technique. For more information on Project tools or Project Management visit www.projectperfect.com.au