Using the CMMI in small Organisations

Stephen Fletcher

PAS Ltd, UK.

Roadmap

- What is a small organisation?
- Problems small organisations' face
- A brief look at the process categories
- A case study of a small service organisation

Copyright PAS Ltd, Uk.

What is a small organisation?

- Project staffed with 3 people
- A Department of 20 people
- Maintaining a network and infrastructure
- Service department running a level 1 helpdesk
- Projects that last 5 days
- Emergency fixes and quick changes
- “Specials”, “one off projects”, “prototypes”

Copyright PAS Ltd, Uk.

Typical problems a small organisation faces

- Limited resource for process improvement
- Few Individuals covering multiple roles
- Too many model practices
- Sometimes very simple interfaces with stakeholders
- Sometimes very complex interfaces with stakeholders

Copyright PAS Ltd, Uk.

What are the attributes that change a process definition?

Or why can one process not fit all organisations:

- Number of stakeholders
- When the stakeholders are involved
- Level of complexity of the engineering
- Customers needs (Process and Quality)
- Internal or External customers

Copyright PAS Ltd, Uk.

Some things never change

- Most Managers would like:
  - Better resource and cost planning
  - Better control of the group
  - Increased Productivity
  - Less problems and fire fighting
- They don’t always realise they can achieve this in their small org.

Copyright PAS Ltd, Uk.

There is always a need to plan

- The basic Project Management PA's apply to all areas of business
- But these can be challenging to a small organisation:
  - Consider a maintenance shop that deals with operational problems
  - A service desk that handles customer and internal problem calls
- These organisations at first look to be reactive

Copyright PAS Ltd, Uk.

Engineering is Engineering

- Engineering is a transformation of:
  - Requirement into a design
  - Implementing the design
  - Integrating new/modified components
  - Verifying and Validating
- Leaving a documentation trail of what you have done and of the current state of the product
- An engineering lifecycle is used even when the smallest change is made to a product

Copyright PAS Ltd, Uk.

The support process areas are always required

- Configuration Management is essential for product integrity
- PPQA for process compliance and adherence to standards
- Measurement and Analysis for understanding of process and product quality.

Copyright PAS Ltd, Uk.

Organisation Infrastructure

- This posses more of a problem for the small organisation
- The cost of building organisational assets can be high
- The return on investment is often less visible to management

Copyright PAS Ltd, Uk.

Case study – A small service organisation

- Staff of 5 people running a help desk
  - Logs initial call
  - Handles the level 1 issues
- Staff of 15 people handling and fixing the level 2 and level 3 issues
- Level 4 issues get transferred to the software development group as a product requirement change

Copyright PAS Ltd, Uk.

Initial State

- All the service calls handled in a reactive manner
- No resource planning in place
- Little documented knowledge of system configurations
- Undocumented changes made to live configurations to fix problems quickly
- “We don’t have time to record everything we do, we are so busy and under resourced”

Copyright PAS Ltd, Uk.

Process Improvement Infrastructure

- The Software development group already at CMM Level 2, transitioning to CMMI Maturity Level 2
- A Process improvement group is in place with central resource
- One full time Process Improvement staff was allocated to the service group to help them forward.
- Decided on a continuous approach

Copyright PAS Ltd, Uk.

Approach

The action plan had the following steps:

1. Record all the configurations of the systems
2. Implement rigorous change management
3. Implement Causal Analysis and Resolution on the level 2 and 3 problems that are logged
4. Remove the cause of the problem by changing (or creating) process
5. Gather data from change management system on call profiles, time to fix and effort to fix
6. Use data to build resource and service level models to base the future resource planning

Copyright PAS Ltd, Uk.

CAR used early

- CAR meetings held every two weeks, to identify the next problem to fix.
- Based on frequency, severity and cost
- Processes built and documented based on the problems the group identifies
- Monthly reports to senior managers showing fault catagories fixes, estimated cost saved, and profiles of help desk performance
- Note – CAR used in this way is not how an ML5 org approaches PI.

Copyright PAS Ltd, Uk.

Continuous Profile

- Configuration Management (CM)
- PPQA (to ensure the CM process is rigorously followed)
- Measurement and Analysis (MA) to collect and analyse the data
- CAR to analyse the causes of the issues and seek to remove the cause
- Project Management (PP and PMC) for the resource planning

Copyright PAS Ltd, Uk.

Summary

- The CMMI can be used effectively in a small organisation.
- Focus on areas of the model that give benefit.
- Realise that some practices mean more to a small organisation than others.
- Understand the risk and consequence of each model practice, and use common sense when interpreting them

Copyright PAS Ltd, Uk.