CMMI and Agile
our experience revealed

CMMI made Practical 2012

by Gerry Sweeney
Overview

About Hornbill
What we do
Hornbill and CMMI
CMMI and SCRUM
Are they compatible?
Final thoughts
About Hornbill

• We produce Business Application software
  - Social Workforce Collaboration
  - ITIL compliant IT Service Management
  - Customer Service Management
  - Customer Relationship Management (CRM)

• Company established in 1995
  - Employs approx 100 staff
  - Offices in London and Dallas
  - Full-time staff in UK, North America and Australia
  - Organically grown, self funded
  - Average growth of 25% per annum and always profitable
  - R&D spend 25% of turnover is typical

• Global customer base
  - 600+ customers
  - Cloud and On-Premise Deployments
  - Notable deployments include the Olympic Games 2004, 2006, 2008 and 2010 and many others
Hornbill Technologies

- A strategic business unit within Hornbill formed in 2010.
- Sole purpose to focus on technology platform that “enables” Hornbill and its application partners
- And we focus on:-
  - The creation of our flagship social collaboration line-of-business application platform “Hornbill ESP”
  - Our own Cloud PaaS infrastructure for SaaS enablement
  - Private Cloud Enablement
  - Application Incubation and new market entry projects
- And we have: -
  - Expertise in C++, C#.NET, Java, Objective-C, Web/DHTML/AJAX and Mobile Software development, Linux based Virtualization and distributed computing infrastructure
  - Only 25 staff but growing fast.
CMMI and Hornbill

We achieved CMMI Level 2 in December 2011

We transformed our organisation in about 18 months.

It took longer than we hoped but were pleased with the outcome.

CMMI added structure and controls that we did not have before.

Our outward facing persona improved and we became more professional...

BUT….there was something fundamental still missing….!
What was missing?

- We focused on CMMI ML2 (which is focused on management control)
  - CMMI did not help with team communication
  - CMMI did not address developer empowerment (outside of scoping)
- Our interpretation and implementation of CMMI focused more on process and ended up being a heavier deployment (could explain the longer deployment time)
- PP and PMC were particularly difficult to deploy - our interpretation ended up being more aligned with a waterfall approach. (too much up-front planning and not enough early doing)

The dreaded Planning loop.....
In the mean time...

- We introduced SCRUM on a project that was outside of CMMI
- We trained management and the team
- We put up scrum boards
- We empowered the team
- And......

We transformed the way we make software overnight....!

We changed our company and our people for ever....!
What and how did SCRUM deliver?

- A sense of ownership
- High Energy Levels
- Collaborative and Social Interactions
- High Performance Team
- High Visibility of Activity and Progress
- Transparency within the business
- A repeatable sense of progress and achievement
- Excitement and a Buzz!
- Environmental Envy
Are CMMI and SCRUM compatible?

- It would appear so -- although our current interpretation and deployment of CMMI is definitely not - yet...
- We wanted to be Agile in the way we develop and release software but we did not understand what that meant to our organisation when we deployed CMMI.
- PP and PMC were troublesome for us, and very easy to misinterpret to poorly deploy, specifically Resource Planning, Budgets, Estimates, Delivery, Complexity and overhead
- Its too easy to allow your (managers to use your) CMMI deployment as a stick/reason to avoid change
- Its also too easy to over-deploy CMMI (consider correct balance of control vs. flexibility)
- SCRUM and CMMI are compatible - but - you need to deploy CMMI so it is supportive of an Agile team approach.
- I would recommend deploying an Agile project before CMMI to tune your process controls to your team approach.
Final thoughts

• If your CMMI deployment throttles change - act fast and do something about it. Run CMMI -- don’t let it run you
• Agile is not for everyone but if your people and teams are an important ingredient to what you do then CMMI alone is probably not enough.
• If you don’t do Agile but want to try it, isolate a project that you need a high degree of developer buy-in/commitment and give it a try - I was very surprised by the results.
• Don’t change your existing CMMI processes before you know Agile works for you.
• If you don’t yet have CMMI and want Agile too - deploy your Agile methodology first.
• Consider non-process tools to encourage your team to communicate. Collaborate and ideate
• Use your process tools to manage the processes, not your people
Thank You

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http://www.hornbill.com/
Princess Alexandra Hall
Invisible CMMI

Robert Buttrick
BT Programme and Project Management Method Director
Context

BT relies on effective programme and project management to deliver services to its customer, develop its products and platforms, and to transform its business. Billions of pounds of BT’s spend is managed in this way. Not only that, many of these vital programmes and projects cross LoB boundaries, requiring BT to use its matrix to the full.

*Promoting visibility, accountability and control; our customer and shareholders expect this.*
Why a BT Method for programme and project management?
A short history of CMMI in BT

- BT Health
  - Spine
  - London LSP

- BT Defence
  - DFTS

Re-use what you’ve got

“CMMI ready”
CMMI BASICS
CMMI process areas – Maturity Level 2

*Project management process areas*

PMC, PP, REQM, SAM,

*Support process areas*

CM, MA, PPQA

*General practices*
Basic project management

Organisation

Risk

Progress

Corrective action

Status, issues, and results of process and product evaluations/measurements and analyses

Business Case

What to monitor

Product and component requirements

What to build

Product and component requirements

What to do

Committed

Engineering and Support process areas

Measurement needs

Change

Supplier agreement

Product component requirements, technical issues, completed product components, and acceptance reviews and tests

PP

SAM

PP = Project Planning
REQM = Requirements Management
SAM = Supplier Agreement Management

Figure 4.3: Basic Project Management Process Areas
CMMI process areas – Maturity Level 3

- Project management process areas
  - PMC, PP, REQM, SAM, IPM, RSKM
- Engineering process areas
  - RD, TS, PI, VER, VAL
- Support process areas
  - CM, DAR, MA, PPQA
- Process management process areas
  - OPD, OPF, OT
- General practices
Advanced project management – CMMI style

Process

Engineering

Support

Project (basic)
WELCOME TO THE REAL WORLD - ARCHITECTURE
Built on recognised “best practice”

BT’s PPM Method is tailored from international best practice
BT’s PPM Method has these procedure groupings:

- Commercial
- Management procedures
- Control
- Quality
Management procedures

Higher authority (sponsoring group)

Direct and manage a programme

Approve a project
Terminate, suspend and reinstate a project

Direct and manage a project

Plan and manage a work package

Plan and manage a department

Project work

Non-project work
Support procedures

Commercial
- Manage contract
- Manage procurement & manage suppliers
- Manage finance

Management procedures
- Benefits realisation
- Project Planning
- Project Reporting
- Risks
- Issues
- Change control
- Documentation
- Configuration management
- Stakeholders
- Communications

Quality
- Meetings
- Training
- Induct New Joiner
- Assure Quality
- Conduct Peer Review
- Review (Assurance)
- Defects management
- Perform Audit
- Lessons Learned
- Procedures
This is how we show the BT PPM Method . . .
The detail behind the scenes

BT MANAGEMENT PROCEDURES

Higher BT authority

Programme Sponsor
Programme Manager

Direct and Manage a Programme

Programme Baseline
Direction, targets and decisions
Business context and risk
Allocated defects

Request for decision and direction
Escalated opportunities, risks and issues
Report

Request to start project (initial)
Request to change project status

Approve project or stage (opining)

Terminate, suspend or reinstate a project

Decision maker

• Date decision
• Direction

Trigger to escalate gate request
Trigger to request closure

Project Sponsor
Project Manager

Direct and manage a project

• Instructions to start a work package
• Approved Team Plan
• Direction, targets and decisions
• Project context and risk
• Allocated defects

• Revised Team Plan
• Request for decision and direction
• Change requests
• Escalated opportunities, risks and issues
• Approved documentation
• Approved configuration items
• Workpackage Checkpoint Report
• Reported and resolved defects

Plan and manage a department

• Revised department plan
• Request for decision and direction
• Change requests
• Escalated opportunities, risks and issues
• Approved documentation
• Approved configuration items
• Workpackage Checkpoint Report
• Updated progress against revised Team Plan
• Reported and resolved defects

Department manager

Plan and manage a work package

Project work
Non-project work

Team Manager Team

Target Plan, Work Package Definition

Special processes
The detail behind the scenes.
But where does CMMI come in to this?

Our Method is tailored from international best practice
Support procedures – CMMI value-add over the “others”

+ Tailoring

Management procedures

Commercial

- Manage contract
- Manage procurement & manage suppliers
- Manage finance

Control

- Benefits realisation
- Project Planning
- Project Reporting
- Risks
- Issues
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+ Tailoring

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**You** could try mapping . . . .

. . . or you could use **your** CMMI specialists

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DOCUMENT IT!
An example of what you face . . . GP 2.2

The plan for performing the process typically includes the following:

- Process description
- Standards and requirements for the work products and services of the process
- Specific objectives for the execution of the process and its results (e.g., quality, time scale, cycle time, use of resources)
- Dependencies among the activities, work products, and services of the process
- Resources (e.g., funding, people, tools) needed to perform the process
- Assignment of responsibility and authority
- Training needed for performing and supporting the process
- Work products to be controlled and the level of control to be applied
- Measurement requirements to provide insight into the execution of the process, its work products, and its services
- Involvement of relevant stakeholders
- Activities for monitoring and controlling the process
- Objective evaluation activities of the process
- Management review activities for the process and the work products
... And another example.

SP 1.3 Establish Tailoring Criteria and Guidelines

Establish and maintain tailoring criteria and guidelines for the organization's set of standard processes.

Tailoring criteria and guidelines describe the following:

- How the organization's set of standard processes and organizational process assets are used to create defined processes
- Requirements that must be satisfied by defined processes (e.g., the subset of organizational process assets that are essential for any defined process)
- Options that can be exercised and criteria for selecting among options
- Procedures that must be followed in performing and documenting process tailoring

Examples of reasons for tailoring include the following:

- Adapting the process to a new product line or work environment
- Elaborating the process description so that the resulting defined process can be performed
- Customizing the process for an application or class of similar applications

etc
BT’s approach

Procedure

Guide

Template

Product descr’n

Forum

Tailoring guidelines

Video
LIFECYCLES ADD REALITY
What CMMI says (OPD)

SP 1.2 Establish Lifecycle Model Descriptions

Establish and maintain descriptions of lifecycle models approved for use in the organization.

Lifecycle models can be developed for a variety of customers or in a variety of situations, since one lifecycle model may not be appropriate for all situations. Lifecycle models are often used to define phases of the project. Also, the organization can define different lifecycle models for each type of product and service it delivers.

Example Work Products
1. Descriptions of lifecycle models

Subpractices
1. Select lifecycle models based on the needs of projects and the organization.
   Examples of project lifecycle models include the following:
   • Waterfall or Serial
   • Spiral
   • Evolutionary
   • Incremental
   • Iterative

2. Document descriptions of lifecycle models.
   Lifecycle models can be documented as part of the organization’s standard process descriptions or they can be documented separately.

3. Conduct peer reviews on lifecycle models.
   Refer to the Verification process area for more information about performing peer reviews.

4. Revise the descriptions of lifecycle models as necessary.

WARNING
Project management versus engineering?
BT’s standard project lifecycle.

- Key to overall control of a project
- The primary means to managing risk
- “Entry” gates to promote forward looking decision making
- Ensures the project team is “in touch with reality”
  - Gating to check, visibility, need and appropriate solution
- A common representation to help everyone understand where they are.
Customer programmes tailoring examples

Key Activities:
- Appoint project sponsor
- Appoint project manager
- Prepare brief and associated collateral

Key Central Deliverables:
- Project Initiation Document (Stage A)
- Project Business Case
- Updated R&D and plan
- Updated R&D and plan
- Updated R&D and plan
- Project closure report
- Post-project services report

Stages:
- Identify
- Mobilisation
- Design
- Development
- Test and deployment
- Rollout and close

Gates:
- Mobilisation Gate
- Design Gate
- Development Gate
- Test and deployment Gate
- Rollout and close Gate

Programme End to end delivery management

Project Bid

Project Mobilisation

Project Transition

Project Transformation

Project In Life

Signed Contract

End of Contract
TAILORING IS VITAL
Tailoring is at the heart of the Method.

Tailoring gives us flexibility as one size doesn’t fit all cases.

Our Method is tailored from international best practice

People can then tailor it for their needs

MSP
PRINCE2
BS6079
CMMI-DEV
APM
PMI
“Agile”
Big tailors have little tailors on their backs to bite them . . .

- “How” you direct and manage the work may be defined at different levels.

- Each lower layer is governed by the layer above.

- It follows the Work Breakdown Structure!
“PROCESS” IS NOT ENOUGH
More than just a method . . .

- **Culture**: promoting the right behaviours for success.
- **Accountability**: who we rely on (top to bottom) to direct, manage and do our work
- **Methods**, where a consistent approach adds value
- **Tools**, to make it more effective and efficient.

CMMI “institutionalise”
CMMI “perform”

BT Project Site
Culture
Tools
Accountability
Leadership and clarity
BT PPM Method
Learning, re-use and improvement
LET’S LOOK AT THE REAL THING!
SUMMING IT UP
Be your own starting point

• Build (on) your own process architecture from the start.
• Make the architecture *look* simple if you want it to be used.
• Design your documentation sets.
• Re-use and improve what you have. Realise benefits you already have teed up.
• Keep to your own language, where it makes sense
Don’t be a slave to CMMI

• Use CMMI as a reference point:
  – to fill gaps.
  – To challenge you

• Make the CMMI consultants & assessors do the work.

• Be stealthy and invisible.

• Don’t train all your people on CMMI.
Be strategic **and** tactical

- Become “**CMMI Ready**”.
- Start with Maturity Level 3 in mind
- Tailoring guidelines
- Project lifecycle models

- Always stay connected to **your** business need.
Invisible CMMI – Thank you

Robert Buttrick
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Princess Alexandra Hall