Business Analyst World Conference

Implementing Corporate CMMI-Compliant Requirements Processes

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About Innovapost

- Founded in April 2002 as a joint venture between Canada Post and CGI Inc.
- Over 750 employees located in Ottawa and Toronto
- Is a leading provider of IT solutions and services, with a specialization in SAP and Web development
- Provides business consulting and IT services to the Canada Post Group of Companies and their customers
- Helps its clients develop new innovative services while reducing the cost of their existing technology

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About Martine Roy

- Bachelor of Science - Mathematics, University of Ottawa, 1993, Magna Cum Laude
- Senior consultant with 14 years experience in project delivery
- Specialized in business analysis and testing
- Current roles & responsibilities
  - Requirements Community of Practice Global Lead
  - Requirements / Test Lead on $10M+ Project

Today's Learning Objectives

1. Understand how to implement CMMI-compliant requirements processes
2. Understand the benefits of giving process ownership to the business analyst practitioners
3. Understand how to secure process compliance and commitment

Agenda

- What is CMMI®
- Getting Started on Process Improvement
- Innovapost's CMMI Implementation Project
- Institutionalize a Defined Process
- Forming a Requirements Community of Practice
- Requirements Development
- Requirements Management
- Process and Product Quality Assurance
- Innovapost Requirements Toolbox Overview
- Securing Process Compliance and Commitment
- Benefits of Implementing Corporate Processes

What is CMMI®

The Capability Maturity Model® Integrated:

- Provides a *framework for process improvement* that helps organizations improve their processes and ability to develop, acquire and maintain their products and services
- Contains the essential elements of effective processes and best practices for one or more bodies of knowledge
- Specifically addresses systems & software engineering
- Defines 5 maturity levels representing the evolutionary plateau of process improvements
  - Initial, managed, defined, quantitatively managed, optimizing

Getting Started on Process Improvement

- You must first assess the maturity level of your current processes
- You then set process improvement objectives and priorities
- You form a process improvement project team to plan, define and communicate newly improved corporate processes

Innovapost's CMMI Implementation Project

- In 2005, underwent a CMMI assessment of our current capabilities
- Formed a CMMI Implementation Phase 1 project to move towards CMMI compliance for these process areas:
  - Requirements Management
  - Requirements Development
  - Process and Product Quality Assurance
- Created a project plan based on CMMI's generic goal and practices to *Institutionalize a Defined Process*
- Formed a Requirements Community of Practice to define and own the Requirements Processes

Generic Goal: Institutionalize a Defined Process

Generic Practices

- Commitment to perform
  - Establish an organizational policy
- Ability to perform
  - Plan the process
  - Provide resources
  - Assign responsibility
  - Train people

Generic Goal: Institutionalize a Defined Process

Generic Practices (continued)

- Directing Implementation
  - Manage configurations
  - Identify and involve relevant stakeholders
  - Monitor and control process
  - Objectively evaluate adherence
  - Review status with higher management

Forming a Requirements Community of Practice

- Cross-portfolio senior BA representation
- Role-based process ownership

Responsible for:

- Defining & maintaining our corporate requirements processes
- Formal requirements process training
- Ongoing project support and coaching
- Mentoring of new BAs
- Requirements peer reviews
- Continuous process improvements

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Purpose of Requirements Development

- To produce, analyze and validate customer and product requirements through:
  - Elicitation
  - Analysis
  - Validation and
  - Communication with the stakeholders

- To provide an effective approach to:
  - Increase the quality of requirements
  - Lower the number of requirements defects entering the development life cycle

Specific Goal 1: Develop Customer Requirements

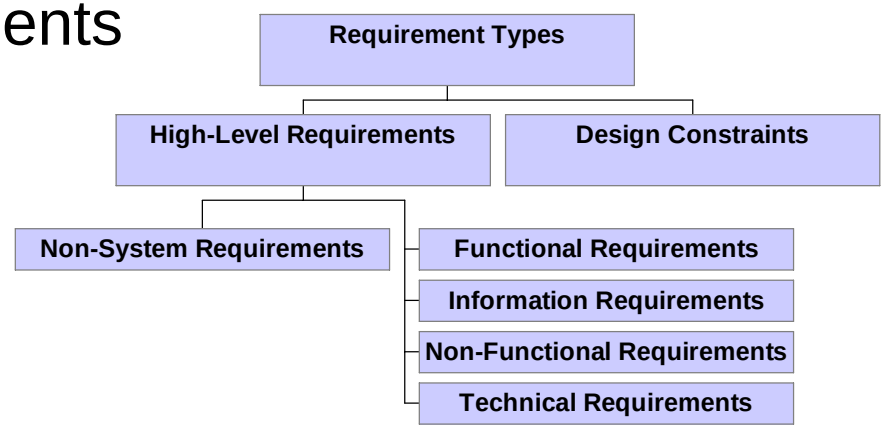
Specific Practices

- Collect stakeholders needs, expectations and constraints
- Elicit to refine using the most appropriate elicitation techniques
- Develop the High-Level Business requirements
  - Business problems/opportunities
  - Business Objectives
  - As-is / to-be processes
  - High-Level Requirements

Specific Goal 2: Develop Product Requirements

Specific Practices

- Establish detailed business requirements
  - Identify functional, non-functional and information requirements based on the high-level requirements
- Allocate requirements
  - Allocate the detailed requirements to the products and product components
- Identify Interface Requirements



Specific Goal 3: Analyze & Validate Requirements

Specific Practices

- Establish Operational Concepts and Scenarios
- Establish a definition of Required Functionality
- Analyze Requirements
  - To ensure that they are necessary and sufficient
  - To balance stakeholder needs and constraints
- Validate Requirements
  - To ensure the resulting product will perform appropriately in its intended-user environment

The goal is to ensure the requirements are feasible, clearly understood by the stakeholders and project teams, and that risk areas are mitigated.

Purpose of Requirements Management

- To manage requirements and identify inconsistencies between those requirements and the project's plans and work products
  - To maintain the integrity of the project scope and what we've committed to deliver
  - To manage requirements changes by analyzing their impact on project activities, resources and timeline prior to implementing them
  - To measure requirements volatility on your project

Specific Goal: Manage Requirements

Specific Practices

- Obtain understanding of requirements *
- Obtain commitment to requirements *
- Manage requirements changes
- Maintain bidirectional traceability *
- Identify inconsistencies between work product and project plan

* ***These specific practices are also covered by the Requirements Development Process***

Purpose of Process & Product Quality Assurance

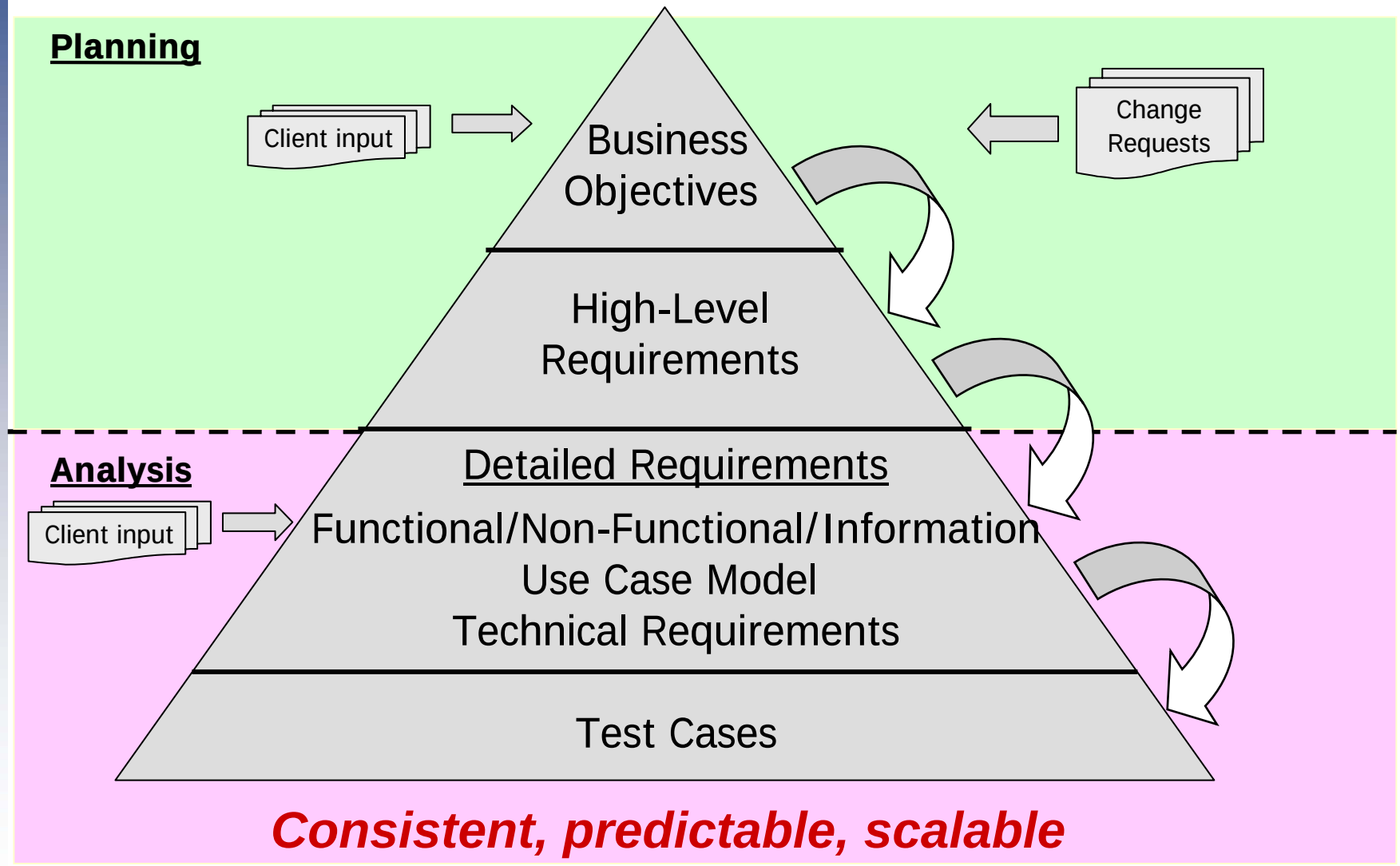
- To objectively assess compliance to applicable project processes and work products
- To ensure visibility and resolution of non compliance issues
- To help ensure a smooth transition from development to production based on accepted principles of transition
- To help ensure risks are known and considered during go-live decision process

It is the responsibility of the process owner to provide compliance criteria to PPQA

Innovapost Requirements Toolbox

- Corporately deployed in May 2006 and addresses:
  - Projects of all sizes
  - New development and enhancements
  - Custom and packaged/SAP development
- Aligned with corporate *methodology and CMMI*
- Compliance criteria supplied to PPQA audit function
- Training provided to Innovapost personnel and contractors
- Requirements Community of Practice established for support and ongoing process improvement

Innovapost Requirements Management Framework



Innovapost Requirements Toolbox Content

- Requirements Development & Management Processes
  - Corporate Policies approved by Innovapost executives
  - Detailed Process Flows and Guidelines
  - Role-based Training Material
- Forms and Templates
  - Stakeholder and User Profile
  - High-Level Business Requirements
  - Detailed Business Requirements
  - Technical Requirements
  - Requirements Verification Checklist (peer review)
  - Traceability Matrix
  - Use Case Model

Innovapost Requirements Toolbox Content

- Forms and Templates (continued)
  - Change Control Log
  - Change Request
  - Enhancement Request
  - Impact Assessment
  - Compliance Criteria for PPQA
- Tools
  - Borland CaliberRM Requirements Repository
  - HP Quality Centre

Requirements Quality Criteria Summary

Requirements shall be:

- Uniquely identifiable
- Prioritized
- Feature-based
- Unambiguous
- Complete
- Consistent
- Feasible
- Design-independent
- Traceable
- Verifiable and testable

About Requirements Peer Reviews

- Verify quality and completeness of requirements
- Performed by a Lead Practitioner of the Requirements Community of Practice
- Process compliance status is set
  - Pass
  - Revisions required
  - Fail: major non-compliance
- Passing Requirements Peer Review is a mandatory PPQA criteria that feeds projects' overall status
- Has visibility at the weekly briefings with senior executives

Securing Process Compliance and Commitment

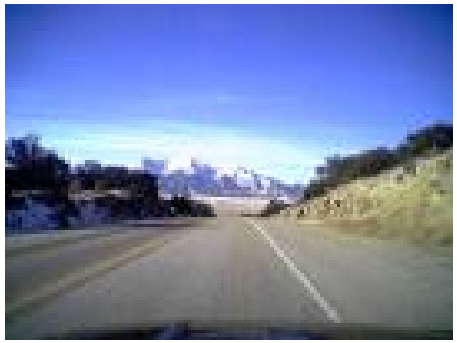
- Executive Buy-in and Commitment
- Corporate communication and roll out
- Objective process adherence monitoring
- Executive visibility
- Open to continuous process improvements and tailoring

Benefits of Implementing Corporate Processes

- Improve requirements quality and communication
- Improve role clarity and collaboration between roles
- Increase consistency, predictability and control
- Reduce costly rework and errors
- Quality Assurance checkpoints reduce deployment risk prior to client delivery
- Bottom line – better assurance that expected scope will be delivered on time and on budget

What Lies Ahead

- Continuous improvement to address tailoring needs
- Ongoing education and project support
- Maintain visibility with senior executives
- Resist project pressures to:
  - Trivialize requirements activities effort
  - Not maintain requirements baselines as change requests are approved
  - Loose sight of requirements during design, build and test (i.e. maintain your traceability matrix!)



Conclusion

The presentation objectives were to:

1. Understand how to implement CMMI-compliant requirements processes
2. Understand the benefits of giving process ownership to the business analyst practitioners
3. Understand how to secure commitment and compliance to new corporate processes

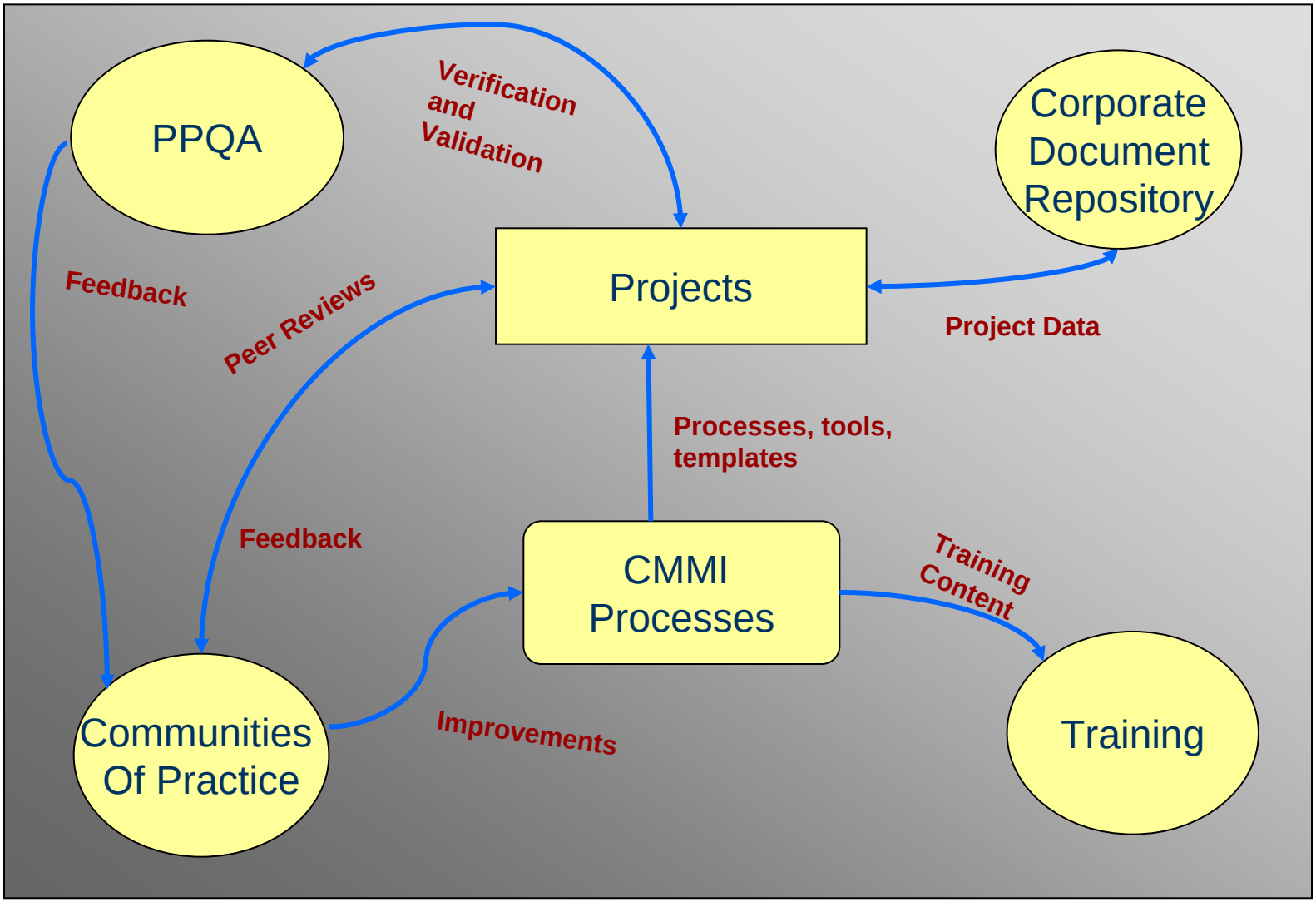
Questions?

- Thank you!

Appendices

Back Slides

Innovapost CMMI Phase 1 Vision



Innovapost CMMI Phase 1 Scope

Level	Process Characteristics	Process Areas
5 Optimizing	Focus is on quantitative continuous process improvement	Causal Analysis and Resolution Organizational Innovation and Deployment
4 Quantitatively Managed	Process is measured and controlled	Quantitative Project Management Organizational Process Performance
3 Defined	Process is characterized for the organization and is proactive	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organization Process Definition Organizational Training Integrated Project Management Integrated Teaming Organizational Environment For Integration Integrated Supplier Management Risk Management Decision Analysis & Resolution
2 Managed	Process is characterized for projects and is often reactive	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Product and Process Quality Assurance Configuration Management Measurement and Analysis
1 Initial	Process is unpredictable, poorly controlled, and reactive	

Peer Review Process

CPMG

Communities of Practice

References

- Capability Maturity Model Integration (R) (CMMI), Version 1.1, Staged Representation, Carnegie Mellon, March 2002
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- Innovapost's SDLC Methodology, Accenture Delivery Methods, January 2004
- Innovapost Requirements Process Training, Version 1.0, Martine Roy, February 2006