Implementation of Construction Industry Best Practices into Workflow Management Systems

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International Construction Specialty Conference

June 2015

Outline

- Introduction & Motivation
- Process vs. Practice
- Process vs. Workflow
- Conceptual Framework
- Practical Framework
- Summary

Introduction

- Best practices are guidelines
- They enable the reuse of experience

Organization	Guidelines referred as
Construction Industry Institute (CII)	Best Practices
Construction Owners Association of Alberta (COAA)	Best Practices
Independent Project Analysis (IPA)	Value Improving Practices (VIPs)
Project Management Institute (PMI)	Foundational and Practice Standards
Construction Management Association of America (CMAA)	Standards of Practice
The Association for the Advancement of Cost Engineering (AACE) International	Professional Practice Guides (PPGs)
Process Industry Practices	Practices

Introduction

- Typical adoption approaches
  - Socializations and face-to-face interactions
  - Meetings / Workshops
  - Training / Mentoring
- Challenges
  - Offered at an abstract level
  - Adoption approaches are not scalable
  - Adoption is not consistent from project to project

Introduction

- Electronic Product and Process Management (EPPM) Systems

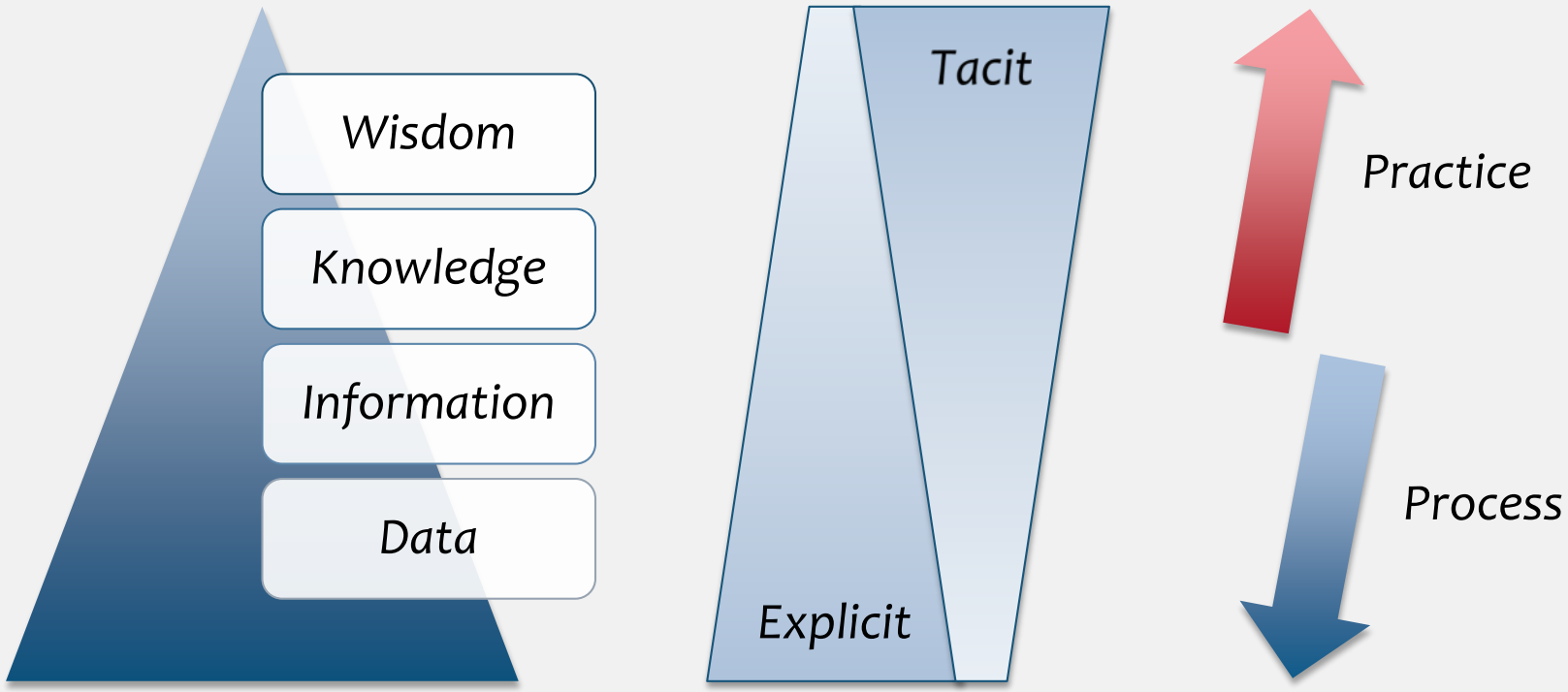
http://www.cda-it-systems.com/referenzen.html

Motivation

- Systematic adoption of best practices is one of the most important contributing factors to mega projects' success (Chanmeka, Thomas, Caldas, & Mulva, 2012)
- Most construction best practices are process oriented (CII)
- The popularity of EPPM systems in mega capital projects is growing – The infrastructure

Process vs. Practice

- Process is a series of well-defined steps.
- Practice is a series of steps, but loosely defined.



Conceptual Framework

Practice Components

Explicit
Tacit
Implicit

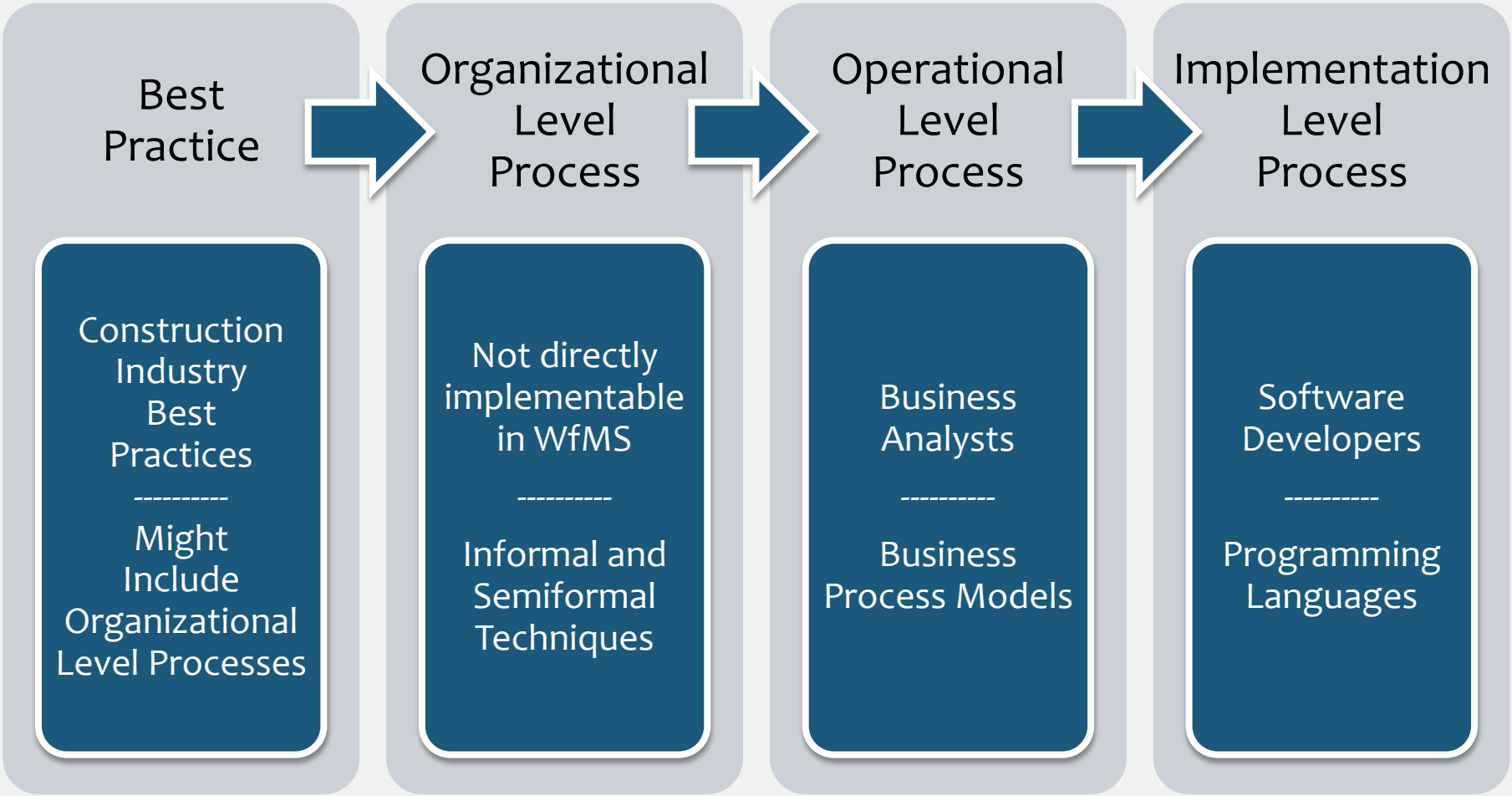
Association

… What is done …
… Who accomplish …
… How is defined…

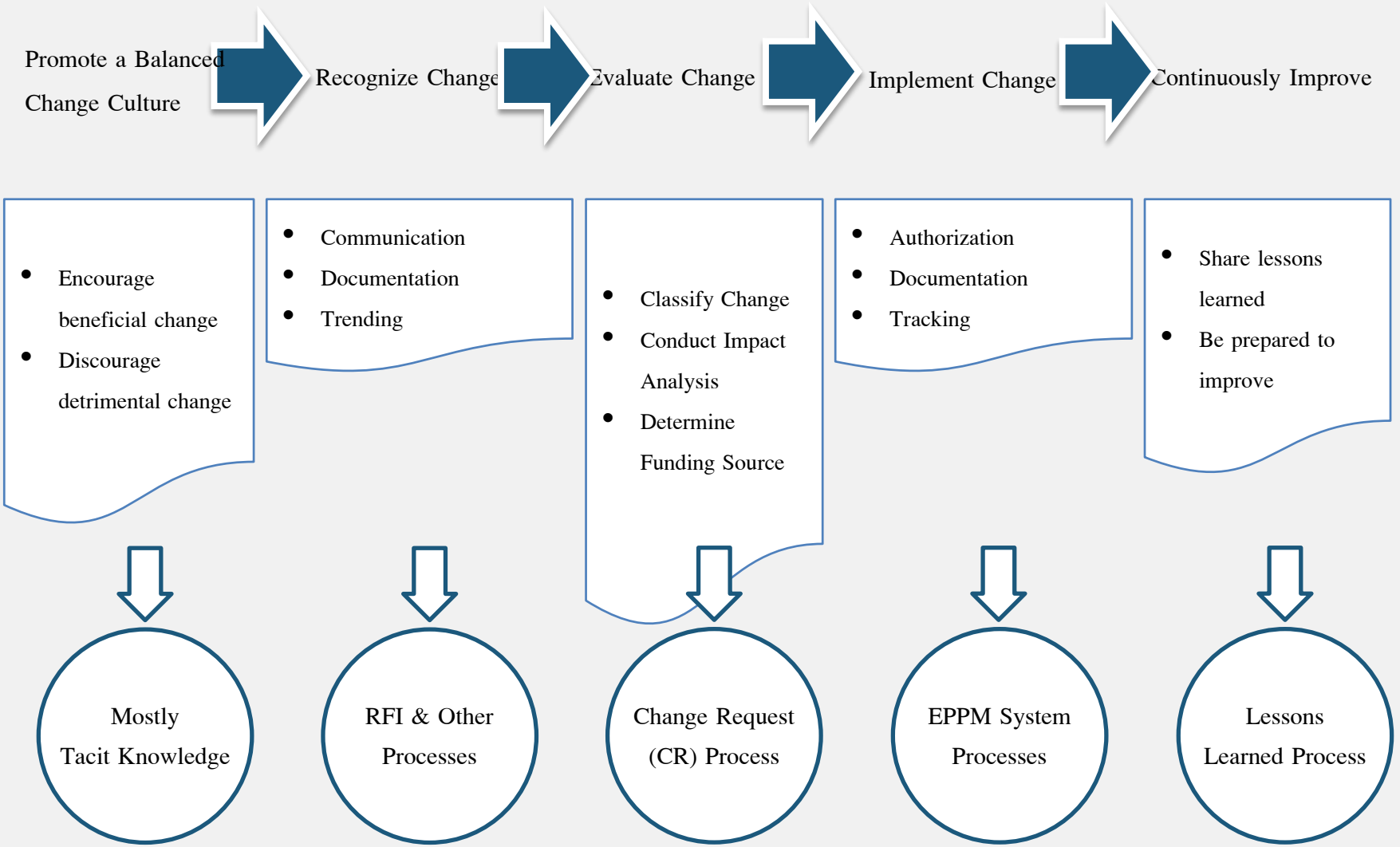
Process Elements

Structure
Human-tasks
Behavior

Practical Framework



Organizational Level Process



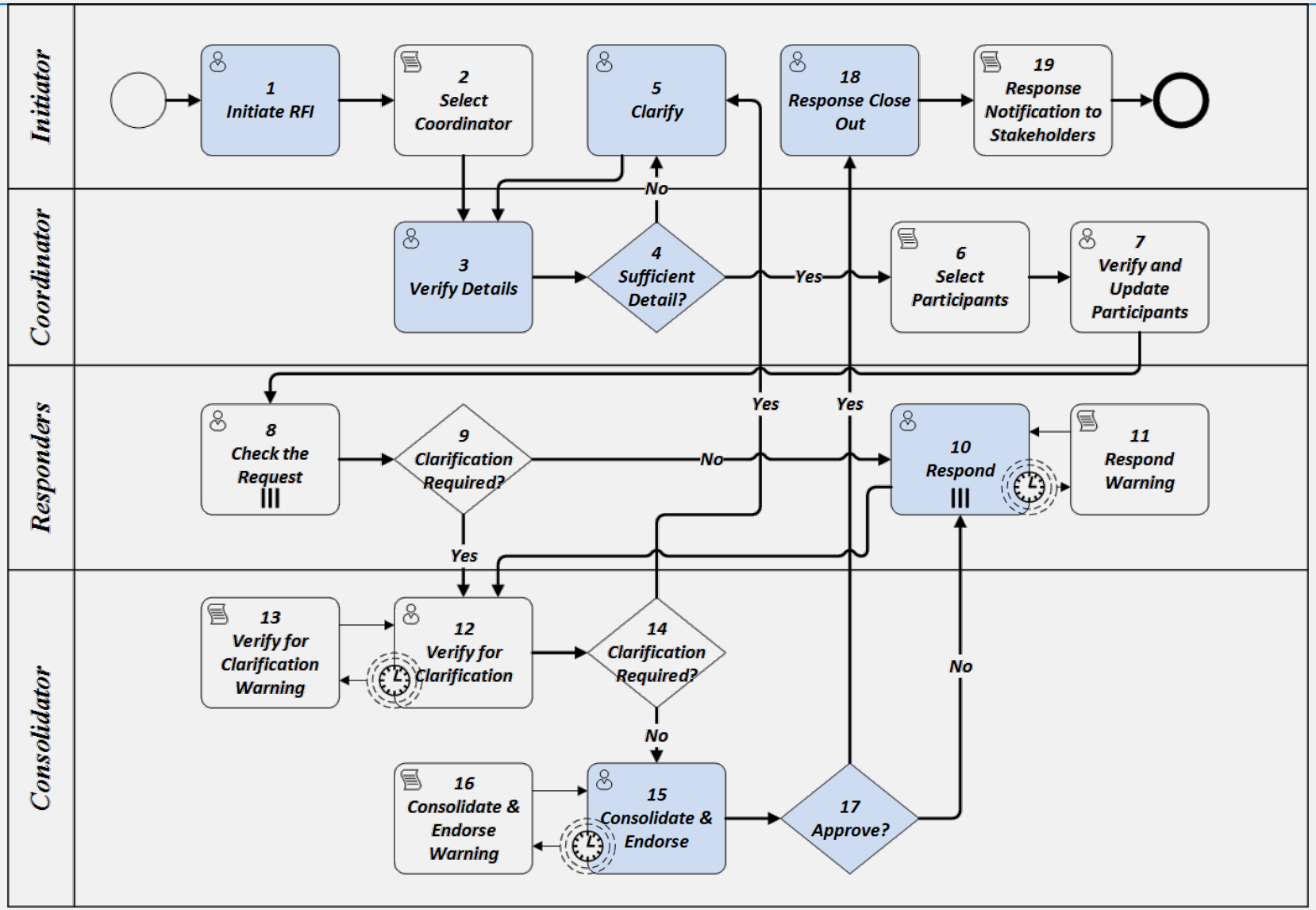
Organizational Level Process

3.1 Determine the time frame for change decision.
3.2 Collect data needed.
3.3 Identify impacts.
3.4 Determine final funding source or "who pays" (cost reimbursable, design development, lump sum, and others). If applicable, confirm the interim funding source decision.
3.5 Re-evaluate project feasibility with proposed change included.
3.6 Authorize change and send out notice to all affected organizations/disciplines.

Process vs. Workflow

Process	Workflow
▪ A process is a series of well-defined inter-related steps	▪ A workflow is considered as an outline of a process
▪ The focus is on steps of work	▪ The focus is on the flow of work
▪ A process can be modeled with different abstraction levels: organizational, operational, and implementation levels	▪ The focus is on organizational details, but can include operational and implementation-level details
▪ A software developer typically implements a process by coding the steps	▪ A analyst can modify the steps, and update the flow of a workflow without changing the underlying code

Operational Level Workflow



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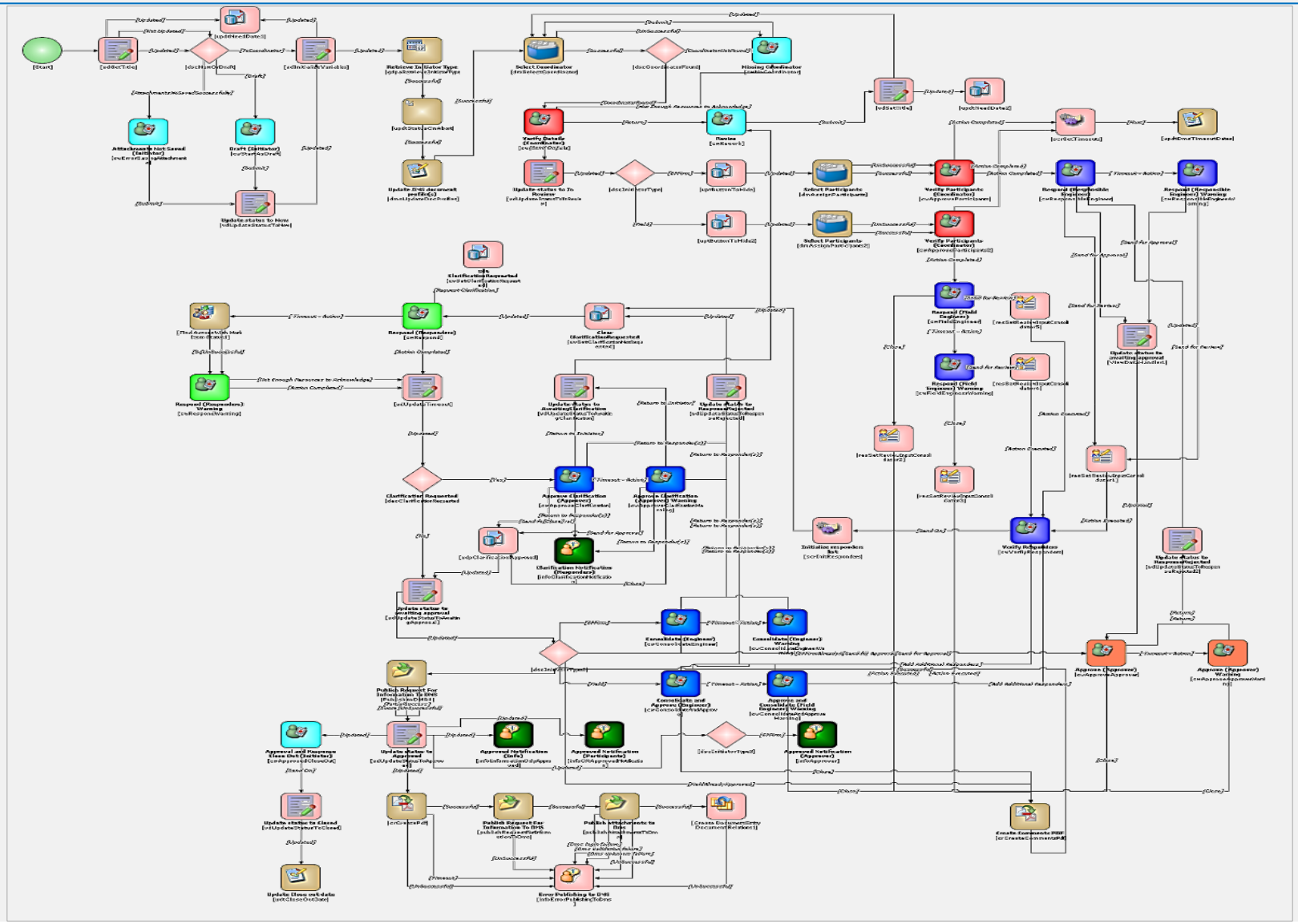
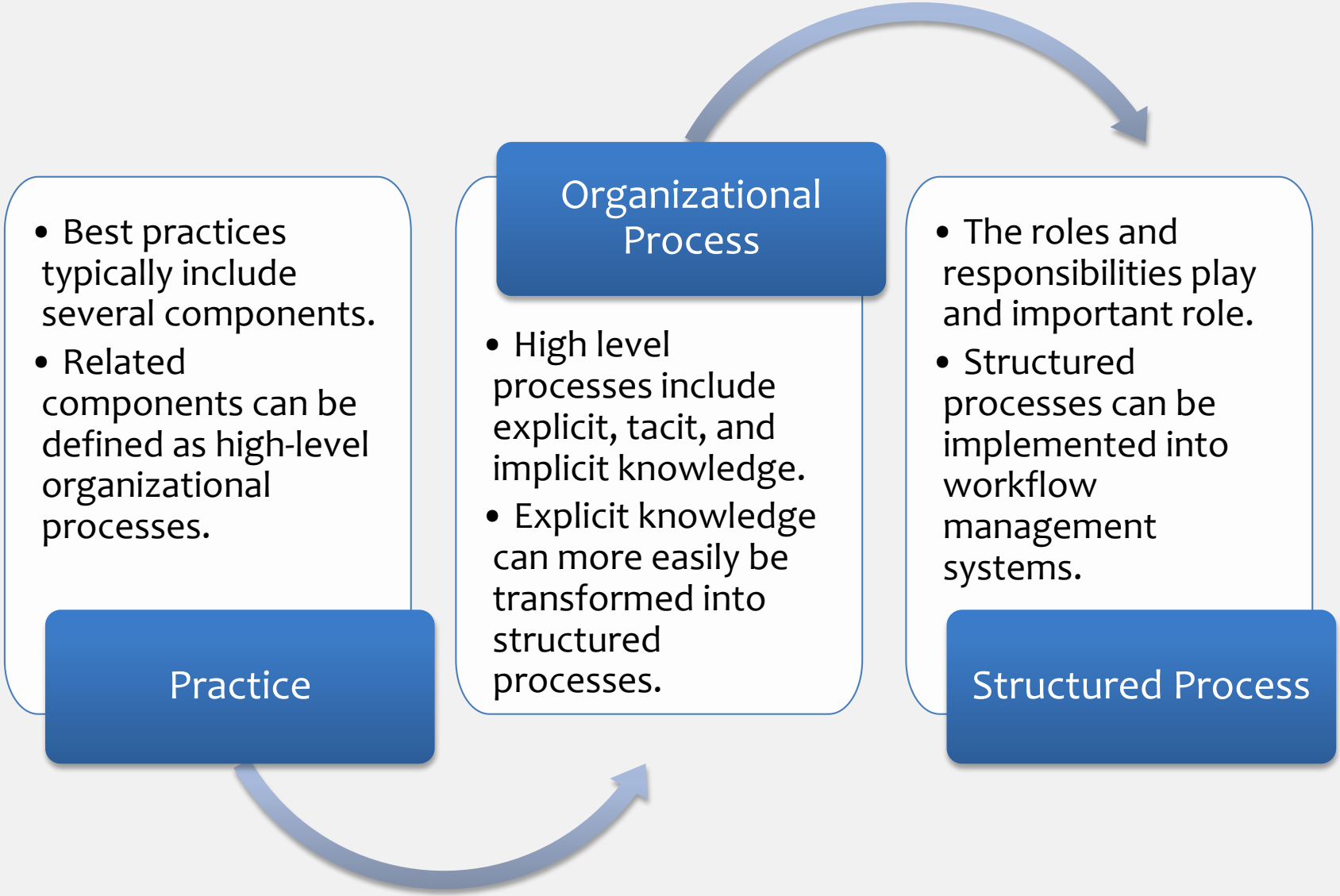
Implementation Level Workflow



Summary



Q & A

Thank You!