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Towards Whole Process Solutions for Y3K Organizations

Enabling experience-based performance for 21st century organizations

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SEI's Vision

- To integrate the SEI tech and mgmt practices into whole process solutions (WPS)
- To support Whole Process Solutions for distributed organizations and virtual teams
- To use dynamic stakeholder feedback for process evolution
What I’d Like to Share

- Lessons - where we’ve been
- Trends - where we’re going
- Issues - limitations and opportunities
- Ideas -
  - what we can do now
  - what we will be able to do
- Questions?
- SEI Resources

Lessons - where we’ve been

- Precedented versus unprecedented systems
- USAF SAB report, 1988
- Risks associated with lack of experience
- Teamwork
- Requirements management
- Technology/architecture choice and use

Experience is fundamental to success

Process models represent compiled organizational experience
Consider requirements

Trends - where we’re going - 1

- Changing nature of work
- More outsourcing
- Rise of virtual organizations
- Changing nature of development & acquisition
  - Towards user-centered, delivery-oriented metrics
  - Delivery team ⇒ experienced users, builders, & buyers
  - Towards legacy re-use and networked systems

Vision and Plan for SCP
Trends - where we’re going - 2

- Assembly
  - Composition Frameworks/ Technology
  - "inter-ACTION-net" + "CORBAnet" + "Snap-Fit" Component Interfaces
- Quality
  - Collaborative Win-Win Acquisition Spiral
  - "Market-Facing" IPTs + "Program Portals" + "Whole Process Solutions"

Trends - where we’re going - 3

- Evolving Systems/Configurable Functions
  - Continuous Customization / Adaptation
  - "Interactive Caller ID" + "QOS" + "Self-Adaptive Systems"
- Sources for Technology and Services
  - Global eMarket of suppliers
  - "Amazon.com" + "eTrade/eBay" + eVISA
Issues

What about -
- integration with non-software domains?
- integration with other stakeholder organizations?
- how can experience be captured, compiled, & reused?
- how can people & organizations gain and use experience “while working for keeps”?
- how can Y3K organizations be designed for success?

A whole process perspective is necessary

Ideas for today and tomorrow

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Open issues

- Adopting an engineering approach throughout whole process
- Adopting a Y3K organization and electronic market perspective

Anatomy of a WPS

- SEI Management and Technical processes are key components
- Process Engineering
  - captures as-is processes, designs to-be processes
  - integrates Processes
  - evaluates impacts of process changes and/or integration (Process Value Method)
- Transition
  - develops materials and methods oriented to roles and jobs
  - ensures smooth adoption of WPS
- Organizational Impacts
  - Evaluates impacts of organizational structure and procedures on processes and vice versa
  - Ensures continuous learning for expertise development, or rapid use-know-how to increase readiness for temporary duties
Towards process engineering

PE answers the questions:

- What processes or whole process framework is my organization following?
- How can I model my processes and framework so others understand and follow them?
- How can I verify that processes are being followed?
- How can I assess impacts of process changes before rollout and during use?
- How can I integrate processes across stakeholders and when should I?
- What are the payoffs and risks of process integration?
- How do I ensure robustness and flexibility in my processes for longevity?

Adopting a Y3K Organization Perspective

Answers the questions:

- How does the structure of my organization affect my processes?
- How can I structure my organization around my processes?
- What are the impacts of distributed organizations and temporary assignments?
- What collaborative methods are effective in different organizational structures?
- What technologies support these methods?
References

- Informedia, a digital video library, http://www.informedia.cs.cmu.edu/
- Team Software Process
- Software Process Improvement Networks (SPINS), http://www.sei.cmu.edu/collaborating/SPINS/

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Vision and Plan for SCP