

# Software Engineering Process Group Conference Overview: Focus on Project Management

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# Agenda of Session Overviews

- ◆ How To Define Processes in Expert Mode
- ◆ Project Manager's Success Guide
- ◆ Direct Impact: Launching Successful Projects
- ◆ Project Planning: Disaster Insurance for Small Software Projects
- ◆ The Executive's Little Instruction Book for SPI Implementation

# How To Define Processes in Expert Mode

presented by Tim Olson, QIC, Inc.

- ◆ Avoid large, poorly defined, unusable processes that become Dilbert's "big honkin' Binders"
- ◆ Common Process Problems
  - ◆ Too Big - processes become "big honkin' binders"
  - ◆ Poor Usability - not "fit for use" and contain mixed information types
  - ◆ Poor Design - process doc usually violates good definition and writing principles
  - ◆ Lack of Pictures - processes need well-thought out diagrams or models
  - ◆ Defined Sequentially - processes not novels
  - ◆ Shelfware or Unused Webware - unused processes

# How To Define Processes in Expert Mode

presented by Tim Olson, QIC, Inc.

## ◆ Process Definition Modes

### ◆ Beginner Mode

- ◆ Assumes user has little or no experience
- ◆ Includes training materials
- ◆ Includes process guidance and lessons learned

### ◆ Intermediate Mode

- ◆ Assumes user has some experience with process
- ◆ Includes process guidance and lessons learned

### ◆ Expert Mode

- ◆ Assumes user is very experienced
  - ◆ processes contain level of detail for an “expert”
- ◆ Concise and precise as possible
- ◆ Use of process models, checklists, forms, and tables as opposed to detailed step-by-step processes
- ◆ Free of training materials and beginner information
- ◆ Contains pointers to the detailed information



# How To Define Processes in Expert Mode

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## Planning Stage

**Purpose:** Organize and plan resources for inspection.

### Inputs

- Final Draft of work product
- Supporting materials for work product →
- Inspection data (estimated or actual)

### Entry

- Work Product is completed (Final Draft) AND
- Work product meets entry criteria

### Task

1. Verify entry criteria
2. Select inspection team
3. Need and overview?
4. Schedule inspection
5. Complete and distribute inspection work package

**Measurements:**

- Preparation rate
- Inspection rate
- Defect density

### eXit

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### Outputs

- Inspection work package

**Roles:** Moderator, Author

# How To Define Processes in Expert Mode

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## People Aspects of Process Definition

- ◆ People Perform Processes: process information using human behaviors (e.g. cognitive psychology), and people are not always logical.
- ◆ Chunking: Information should be grouped into small manageable units (e.g., 7 plus or minus 2 chunks)
- ◆ Labeling: A label should be used for each “chunk” of information (people like to find things quickly).
- ◆ Hierarchy: Small, relevant units of information should be organized into a hierarchy and labeled.

# Project Manager's Success Guide: Practical Web-Based CMM

Implementation for Project Managers presented by Anheuser-Busch Companies, Inc.

- ◆ Developed a Project Manager's Success Guide & associated Courseware
  - ◆ Characteristics
    - ◆ Web-based (on-line)
    - ◆ Accessible
    - ◆ Hands-on Tools
  - ◆ Why?
    - ◆ Customer dissatisfaction
    - ◆ late and over-budget projects
    - ◆ ad hoc project management
  - ◆ Processes based on:
    - ◆ SEI CMM
    - ◆ PMI's Project Management Book of Knowledge (PMBOK)
    - ◆ SUMMIT Methodology

# Project Manager's Success Guide: Practical Web-Based CMM

Implementation for Project Managers presented by Anheuser-Busch Companies, Inc.

- ◆ **Project Support Office formed**
  - ◆ Changed role of QA to process improvement & PM mentoring
  - ◆ Supports PM methodology and standards development
  - ◆ Partners with SW group for PM implementation
- ◆ **Sponsorship**
  - ◆ CIO & Senior Director
  - ◆ PM Success Guide Steering Team
  - ◆ Project Management Forum
  - ◆ Project Support Office (PM, CMM, and quality expertise)
- ◆ **Deployment**
  - ◆ Paper copies to PMs and Team Leads
  - ◆ Courseware
  - ◆ PSO Partners (one-on-one mentoring)
  - ◆ Generation of Awareness (presentations, bulletins, e-mail,...)

# Project Manager's Success Guide: Practical Web-Based CMM

Implementation for Project Managers presented by Anheuser-Busch Companies, Inc.

## ◆ Lessons Learned

- ◆ 80% solution
- ◆ No “one size fits all” solutions
- ◆ PMs have flexibility to choose tools and techniques
- ◆ Keep as simple as possible
- ◆ Ensure continuous improvements
- ◆ Implement change control process via the PM Forum

# Direct Impact: Launching Successful Projects

presented by Teraquest

## Big SPI Secret

Level 2 is not about defining organization-wide processes

Level 2 is about changing management behavior ... project by project

Level 2 makes the project safe for software engineering  
- by focusing on project management

# Direct Impact: Launching Successful Projects

presented by Teraquest



## Project Launch Workshop

- produce project plan
- define baseline control mechanisms
- launch in compliance with policies



## Project Support & Mentoring

- periodic status checks, usually informal
- coaching and mentoring managers



## Project Post-mortem Analysis

- lessons learned
- improvement needs
- asset and data capture

# Direct Impact: Launching Successful Projects

presented by Teraquest

- ◆ Project Plan

- ◆ Contents:

- ◆ Project Organization (life cycle model, team model, roles,...)
    - ◆ Managerial Process (assumptions, dependencies, constraints, risk approach, reporting & reviews, staffing approach)
    - ◆ Technical Process (methods, tools, techniques, work product being built, reviews of products, and record collection)
    - ◆ Work Items, Schedule, & Budget (Work Breakdown Structure (WBS), resource requirements, budget, schedule)

- ◆ Keep plan “alive”

- ◆ the project plan is NOT “shelfware”, revisit and update it at regular intervals during project

# Project Planning: Disaster Insurance for Small Software Projects presented by LOGOS International, Inc.

## ◆ Small Project Disasters

### ◆ What are they?

- ◆ Over-allocation of resources
- ◆ Thrashing of resources to accommodate shifting priorities
- ◆ Inability to recover from unplanned events when they occur
- ◆ Inability to meet project schedule and cost

### ◆ Why they occur?

- ◆ Limits resources to allocate to unplanned demands
- ◆ Inaccurate estimation of required effort based on lack of project histories for estimating
- ◆ Inexperienced/untrained Project Managers
- ◆ Lack of risk identification and assessment
- ◆ Inaccurate schedule built on inaccurate estimates

# Project Planning: Disaster Insurance for Small Software Projects presented by LOGOS International, Inc.

*Project Planning **can and should** be performed on ALL sized of projects!!!*

- ◆ Elements of Disaster Insurance
  - ◆ Define a project such that the scope of the workload fits your organization
  - ◆ Generate planning documents that are applicable to the work you are to perform and useful for tracking the project
  - ◆ Realistically estimate the work you need to accomplish
  - ◆ Identify risks and assess their impact throughout the project
  - ◆ Develop realistic schedules and costs
- ◆ Project Plan Characteristics
  - ◆ It's in writing - not the manager's head
  - ◆ Describes *what* the job is, *how* it will be attacked and resources to attack it, how *long* it will take, and how much *deviation* is acceptable
  - ◆ Readable - not just an accumulation of paper
  - ◆ Modular - logically divided
  - ◆ Brief enough not to turn people off

# Project Planning: Disaster Insurance for Small Software Projects presented by LOGOS International, Inc.

## ◆ Project Plan Structure

1. Project purpose and scope
2. Project goals and objectives
3. Selection of a software life cycle
4. Identification of selected procedures, methods, and standards
5. Identification of software work products to be developed
6. Size estimates for all work products to be developed
7. Estimates of effort and cost
8. Estimated critical resources
9. Software project schedule identifying all milestones and reviews
10. Identification and assessment of risks
11. Plans for facilities and support tools

Note: the SDP is a part or a supplement to the Project Plan for small projects/efforts

# The Executive's Little Instruction Book for SPI Implementation

presented by John Maher, Jr., PhD

- ◆ This will cost more than you think...
  - ◆ don't skimp on costs at this point, figure what you can afford and go one better
- ◆ You won't be finished next year...
  - ◆ there's a reason it's called continuous improvement
- ◆ You will have to change the way you operate...
  - ◆ shift from daily operational focus to a strategic one
- ◆ Seek out bad news...
  - ◆ welcome the bad news and say thanks -- ask for news early to take action early
- ◆ You must work the "shadow side" of the organization...
  - ◆ the culture shift is real, but messy
- ◆ You will get more than you bargain for...
  - ◆ You will, eventually, gain not only in the bottom line but much much more
- ◆ You could lose some of your "best" people...
  - ◆ Beware of rewarding firefighters and "heroes"

# The Executive's Little Instruction Book for SPI Implementation

presented by John Maher, Jr., PhD

- ◆ You will get more from your “other” people...
  - ◆ Reinforce consistent and predictable work -- look for people doing the right things right -- focus on the “what’s in it for me?” (WIFM)
- ◆ You will make mistakes...
  - ◆ when you try something new, you will goof on occasion
- ◆ You will “hit the wall”...
  - ◆ you will be frustrated and tested throughout the process
- ◆ The first wall you hit will be your own leadership team...
  - ◆ Be patient....and persistent --- paradigm shifts are not easy
- ◆ If you don’t have a deep compelling personal reason to start this, don’t...
  - ◆ without drive the effort will flag
- ◆ Remember what “process” really is...
  - ◆ process is how we do our work on a daily basis
  - ◆ sometimes you have to hide the CMM, it’s useful but not everyone needs to speak CMMese
- ◆ Start where you are...
  - ◆ look across projects for common processes and alternative practices and start

# The Executive's Little Instruction Book for SPI Implementation

presented by John Maher, Jr., PhD

- ◆ The second wall you hit will be your middle managers...
  - ◆ be clear about what you want and ask them to tell you how to get it
- ◆ Reinforcement is more than rewards...
  - ◆ remember it's not only what you say but how you say it
- ◆ The third wall you hit will be your customer...
  - ◆ there will be an adjustment period especially between level 1 and 2
- ◆ Stop, take stock of your progress, and celebrate once in a while...
  - ◆ SPI is a long journey - take a break and see where you've come
- ◆ Funny things will happen along the way...
  - ◆ after a few trivial tests of your sincerity, you will start getting good ideas
- ◆ You're not alone...
  - ◆ take advantage of others who have taken the journey
- ◆ If you persist, you will be glad you did...
  - ◆ when people clearly know what's expected, and have infrastructure in place to perform, they'll perform better and be happier doing the work.
- ◆ That's not all, but it will have to do for now...