

Documentation Diet

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SM CMMI is a service mark of Carnegie Mellon University.

*How many more
processes
do you think we
need to document?*



Agenda

1. Focusing on the organization's **needs**.
2. Keeping processes **concise**.
3. Knowing when you are in **trouble**.
4. Knowing if you are meeting the **intent** of the CMMI process areas.

References

- www.processgroup.com/pgpostoct02.pdf

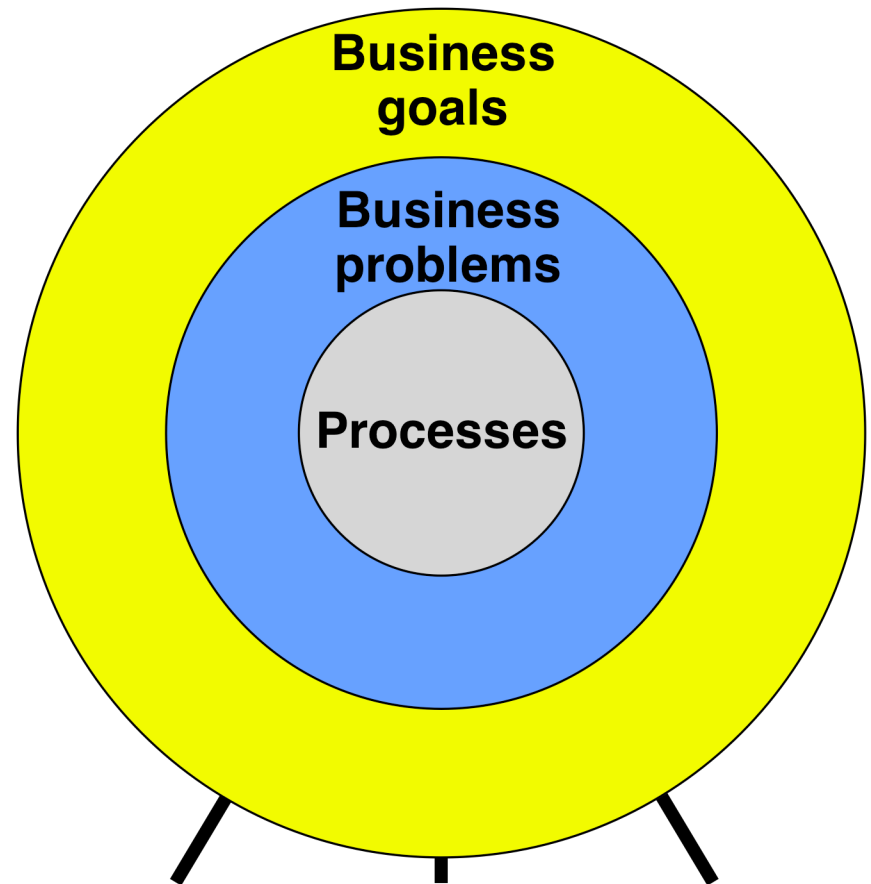
A “Classic” Approach to Process Documentation

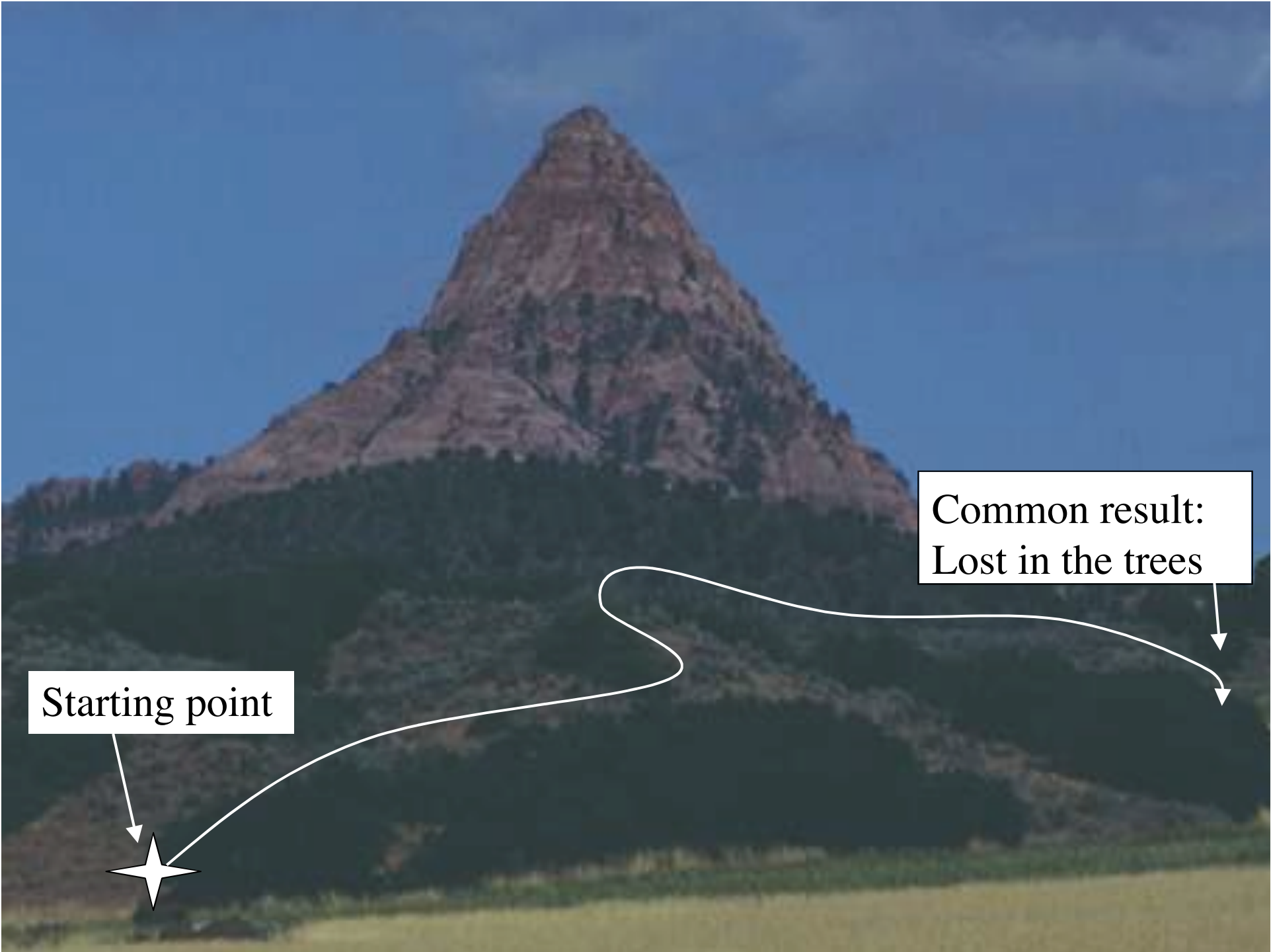
Process-centric improvement

- SEI CMMI
- ISO9001
- ITIL

It can work!

- High risk of failure





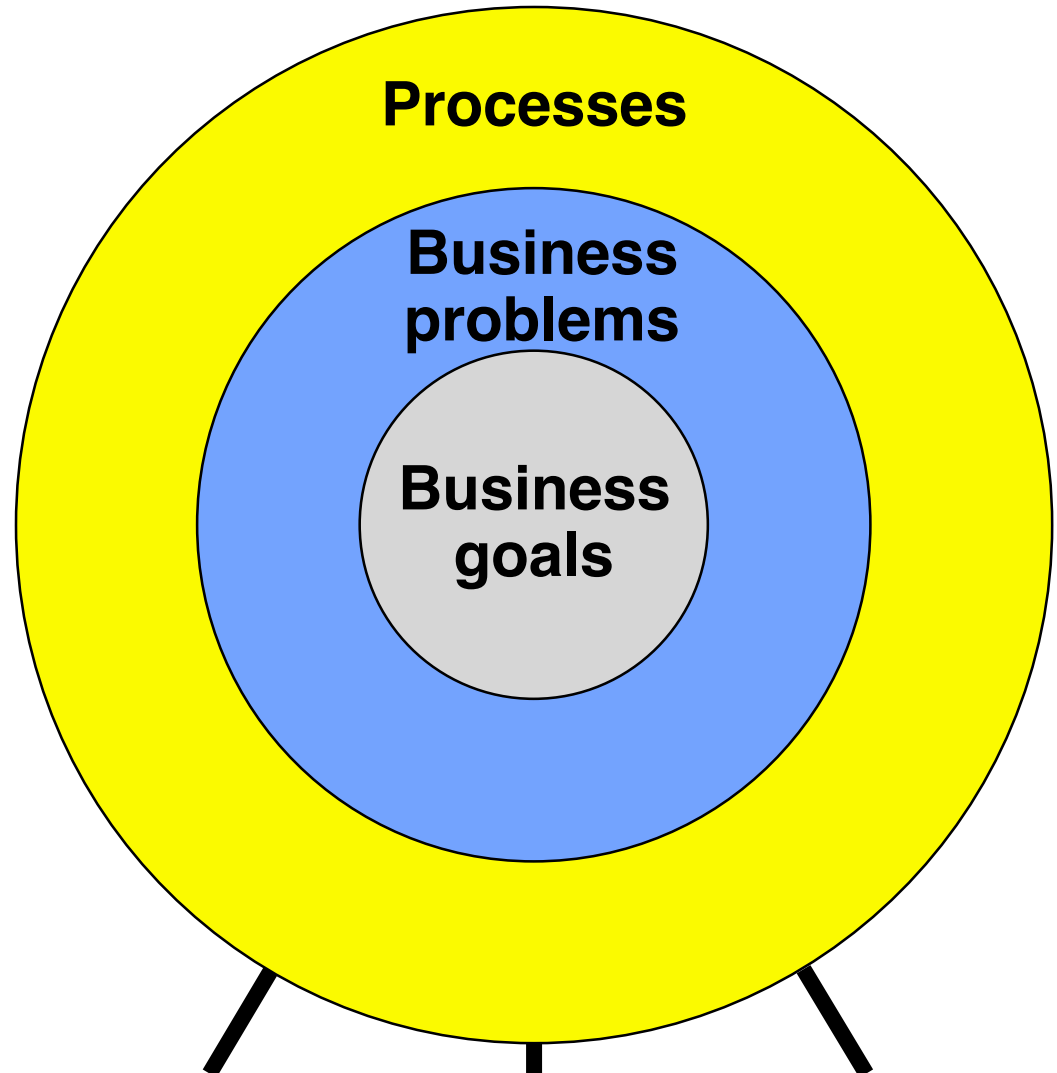
Starting point

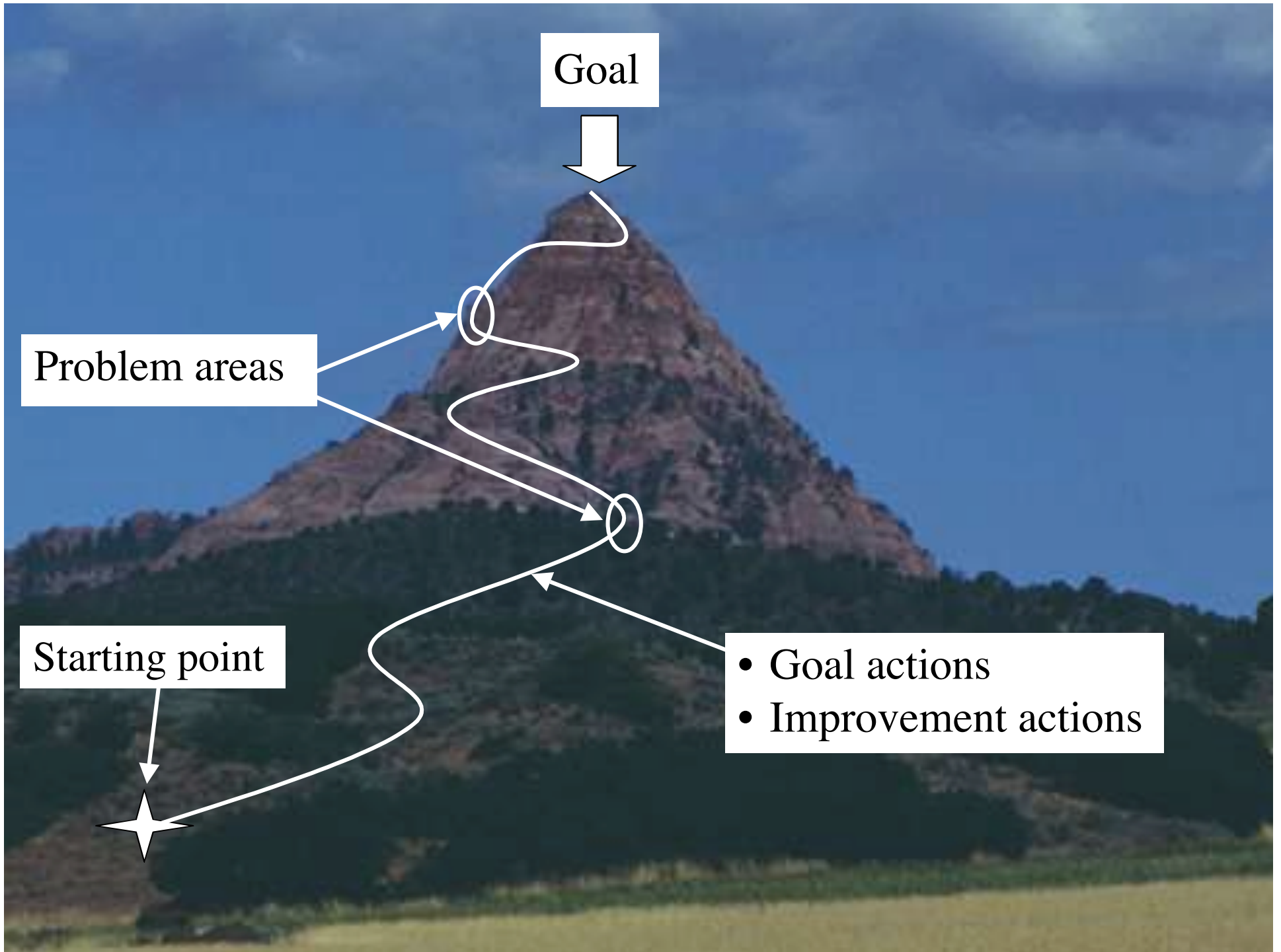
Common result:
Lost in the trees

A Solution

**Goal-problem-centric
improvement**

**Goals and problems
can be used to scope
and sequence the
improvement effort**





Goal



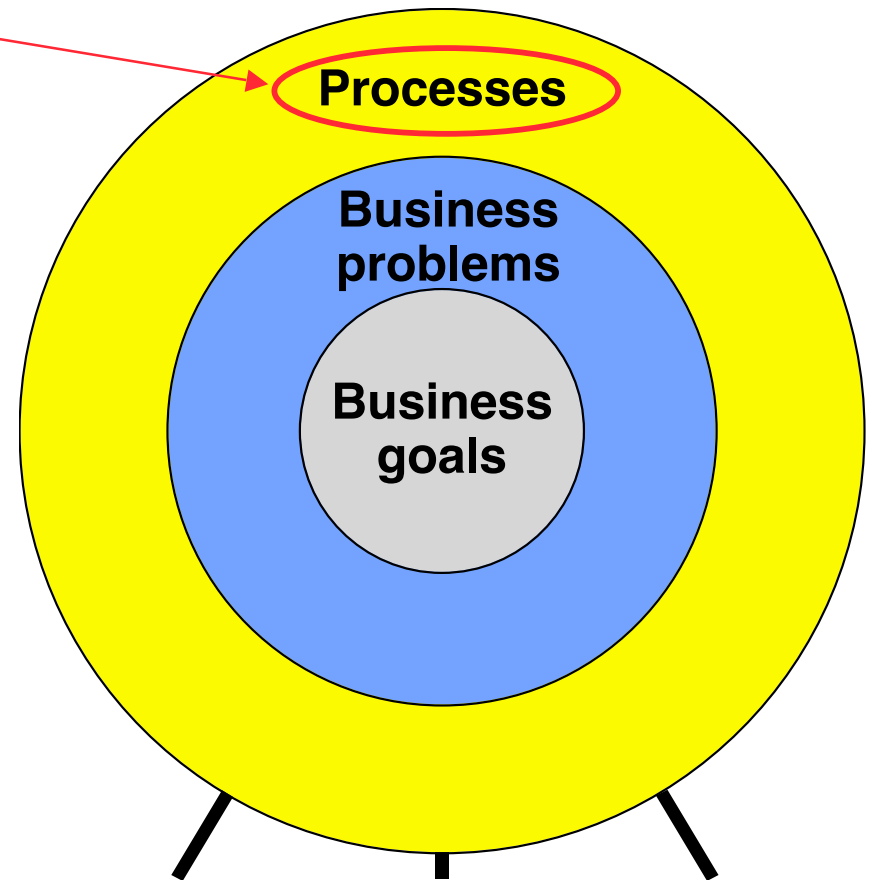
Problem areas

Starting point

- Goal actions
- Improvement actions

Frameworks

- **Frameworks provide an optional source of improvement ideas, e.g.,**
 - Life cycle
 - SEI CMMI
 - ISO9001
 - Bellcore
- **In this workshop, either use:**
 - No framework
 - Current organization's life cycle and defined practices
 - Published framework



1. Focus on the Organization's Needs



- Keep process documentation **concise by focusing** it on specific needs (e.g., business goals and problems).
- Begin with a **simple version** of the process. When the **need is addressed, stop.**
 - Refine further when the process no longer meets the need.

Focus on the Organization's Needs

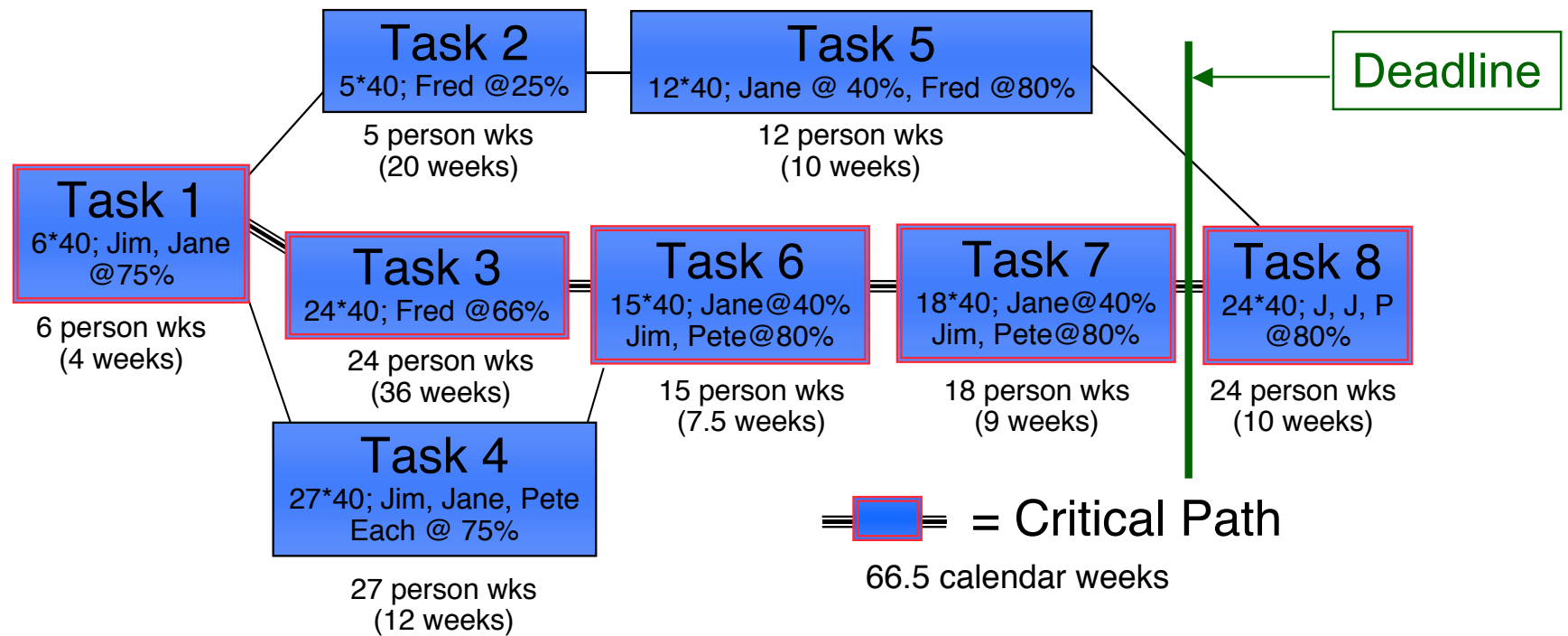
Example

Project Needs	SEI CMMI Practices That Would Help
Changing requirements.	Level 2: PP - Specific Practice <u>2.1</u> Establish and maintain the project's budget and schedule.
The poor quality of incoming code from other groups.	
We routinely over commit.	Level 2: PP - Specific Practice <u>3.2</u> Reconcile the project plan to reflect available and estimated resources.
Inadequate availability of test equipment.	
Too many features are required for the 6- to 9-month development cycle.	
Difficult to find defects early.	

Use the **need to scope** the process.

Example Process for Schedule Creation

(Level 2: PP - Specific Practice 2.1 <Schedule>)



1. Determine task dependencies.
2. Add task EFFORT estimates.
3. Add resources - people, equipment, resource assumptions.
4. Add resource availability - %allocation, calendar days out.

Example Process for Reconciling Commitments

(Level 2: PP - Specific Practice 3.2)

- Step 1:** Project team determines high-level product needs (or scope of work), from customer and marketing input.
- Step 2:** Project team develops an initial project plan and estimates to determine what is feasible.
- Step 3:** Project team meets with management, marketing, customers and related groups to determine whether:
- the change or product is feasible (with options).
 - there is agreement to the resource, cost and schedule estimates.
 - the risk is acceptable.
- Step 4:** A commitment is made OR further negotiation is held.

2. Keep Processes Concise - 1

- Always consider **1 page** (small) for each process or sub process!
 - Refine what you have defined, don't necessarily add more.
- A **Defined/Managed Process** can be the instructions embedded in a work product **template**. e.g.,
 - The template for a CM, QA or project plan.
- A **standing agenda** can be the **process** for a project review.
 - With instructions for use.

CM Plan Template

1. List Configuration Items

x, y, z
2. Establish File Naming Convention

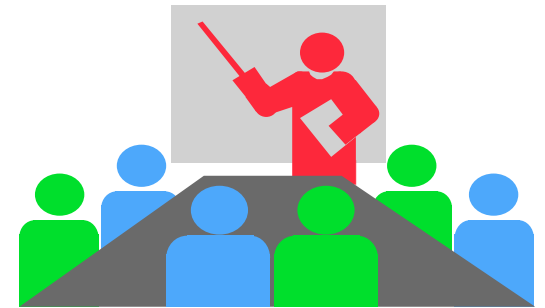
File-x<n>.doc
3. Establish Baseline File Structure

~~~~~
4. ~~~~

# Example Milestone Review Process

(Level 2: Project Monitoring & Control - Specific Practice 1.7)

- **For the last period:**
  - The **original plan**
  - **Accomplishments**
  - The **critical path** of the project
  - **High-risk areas** that need attention (top 2-3)
  - **Problems** that are impacting quality, cost and the schedule
  - **Status of action items** (open and closed)
- **For the next period:**
  - **The plan**



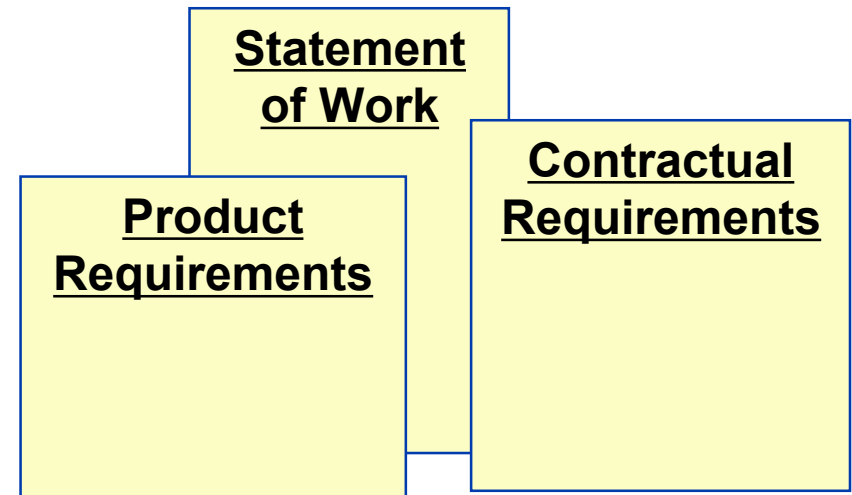
Instructions for use:

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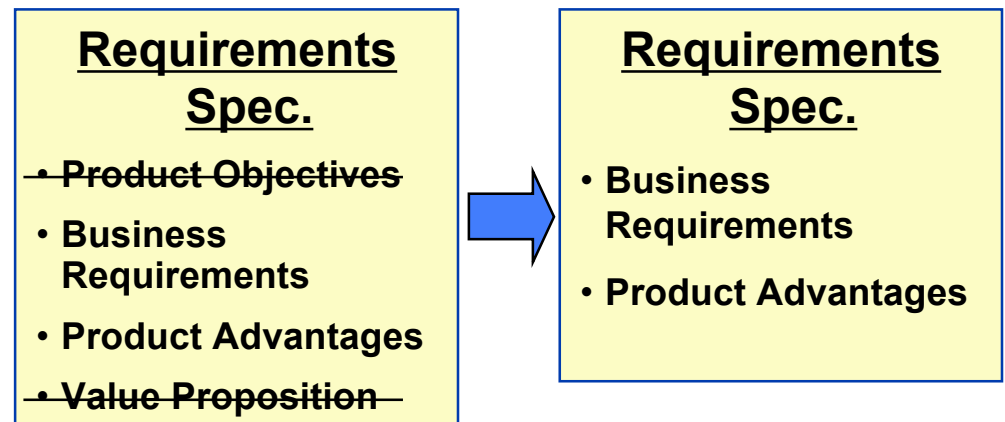
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## Keep Processes Concise - 2

- **Merge duplicate work products, e.g.,**
  - Just because they might be listed separately in the framework (e.g., CMMI) does not mean that you can't merge them for your project.



- **Remove redundancy in templates.**



## Keep Processes Concise - 3

- Don't have separate **QA checklists** that repeat the original process. Use the original process as the checklist.
  - Add specific QA pointers and guidelines.
- Look for **reuse** in your CMMI implementation, e.g.,



| CMMI Practice                                                                                                                                   | This CMMI Practice Can be Used Here Too                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <p><b>Level 2: PP - Specific Practice 1.1</b><br/>Establish a top-level work breakdown structure (WBS) to estimate the scope of the project</p> | <p><b>GP 2.2 in all Process Areas</b><br/>Plan the Process<br/>+ use PA process description</p>                       |
| <p><b>Level 3: VER - Specific Practice 2.2</b><br/>Conduct Peer Reviews</p>                                                                     | <p><b>Level 3: TS - Generic Practice 2.9</b><br/>Objectively evaluate adherence of the technical solution process</p> |



## Keep Processes Concise - 4

- **Consider one representation.**
  - e.g., Word/PowerPoint can be printed, shared and presented.
- **Embed tailoring guidelines.** →
  - A separate document can be difficult to find and update.
- **Have one policy.**
  - e.g., “Perform the lifecycle.” Follow the tailoring guidelines in the lifecycle.

### Estimation Process

**Step 5: Use the historical database to verify the estimate for each task**

***Purpose:*** To search the organization's historical data to see if a similar task (or group of tasks) exists.

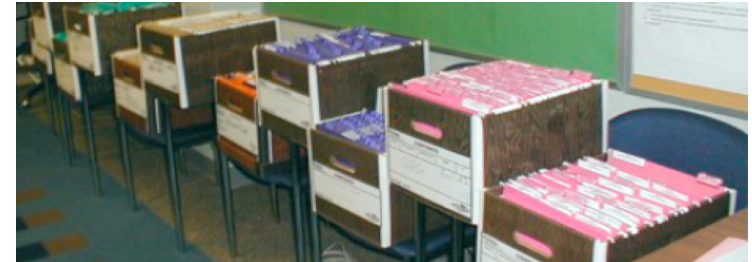
***Tailoring guideline:*** This step should be performed whenever applicable data exists. It can be discarded when a new language or technology is being used.

***Risk if omitted:*** Failure to use the database could result in significant oversight about schedule estimates, and could lead to a loss in revenue.

***Minimum requirement:*** Data that exists, but is not considered applicable for the current estimate, must be reviewed with one other manager to verify non-applicability.

## 3. Know When You are in Trouble

- Project team members create process and project documentation to **please an appraiser or auditor**.



- It has been 6 months and still the process is **not ready to use**.



- Project managers “**study**” the documentation in preparation for the appraisal.



- The **ink refuses to dry**, and the audit is about to start!

## 4. Know if You are Meeting the Intent of the CMMI Process Areas

- The **problems** related to those Process Areas have been **solved** and the solutions are captured in the process descriptions.
- Project and process documents are **used to run the project and the business**:
  - The practices within the CMMI have been institutionalized. The process “lives.”
  - No “extra paperwork”.
- The processes have **Generic Practice** characteristics:
  - E.g., documented, planned, resourced, trained, someone assigned, under control, meet needs, monitored.

## Summary

- Write processes and procedures with a business **goal or problem in mind**. Use the *need* to scope the process.
- Focus on **process quality**, not process weight!
  - Refine what you have. Remove redundancies.
- Impress appraisers with **institutionalized behaviors**, supported with **natural-by-product** documentation.

### Documentation is:

- Only a **small part** of process improvement.
- A **method of capturing and sharing** engineering and management practices.

1. CMMI Product Development Team. CMMI for Development. Version 1.2 (CMMI-DEV, v1.2). CMU/SEI-2006-TR-008CMU/SEI-2006-TR-008, ESC-TR-2006-008. August 2006.
2. Potter, N., Sakry, M., “Making Process Improvement Work - A Concise Action Guide for Software Managers and Practitioners,” Addison-Wesley, 2002, [www.processgroup.com/tpgbook.htm](http://www.processgroup.com/tpgbook.htm)
3. “Practical Project and Process Documentation,” Newsletter Vol. 9, No. 2, October 2002, [www.processgroup.com/pgpostoct02.pdf](http://www.processgroup.com/pgpostoct02.pdf)
4. Audio file, “Making Change Happen - a 10-piece Tool Box,” [www.processgroup.com/sep-mp3.htm](http://www.processgroup.com/sep-mp3.htm)

# Acronyms

- **TS:**           **Technical Solution**
- **VER:**       **Verification**
- **PP:**           **Project Planning**
- **CM:**       **Configuration Management**
- **QA:**       **Quality Assurance**