# Business-driven problem prevention

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**Anna Kostsova**
**Lead SW Quality Engineer**

Motorola, Global Software Group
Russia (St. Petersburg)

# Problem Definition

**The problems** implies but not limited to **defects**

Problem may impact on

- ✓ Product quality
- ✓ Product development cycle time
- ✓ Customer satisfaction
- ✓ Product development process


**Problem Prevention Process is essential!**

# Project Problem Prevention Activities

- ✓ Use of checklists
- ✓ Pre-phase analysis (kick-offs)
- ✓ Post-phase analysis (postmortems)
- ✓ Problem root cause analysis

# Checklists

- ✓ Contains specific actions
- ✓ Are used as entry/exit criteria to/from some activity
- ✓ Accumulate organizational experience
- ✓ Can be project/product specific

- ✓ Example: **Requirements document checklist**
  - Are the requirements consistent?
  - Are the requirements unambiguously stated?
  - Are all the requirements testable?
  - Have the intended product use scenarios been identified and documented?

# Kick-off Meetings

- ✓ Purpose

  Look ahead and decide how the next steps will be done

- ✓ When:
  - Prior to a phase/activity
  - On a project start
- ✓ Items to be covered:
  - Key phase activities
  - Risks associated with the phase
  - Items to be reused
  - Configuration management items
  - Validation methods to be used at the phase

# Kick-off Meetings. Example

- ✓ Entry to Coding phase
  - Distribution of coding tasks between engineers
  - Analysis of code standards
  - Source code to be reused
  - Configuration Management (directory structure, builds procedure, etc.)
  - Code to be reviewed/inspected
  - Training needs
  - Lessons learned from organizational experience

# Postmortem Meetings

- ✓ Purpose:
  - Analyze the past activities
  - Identify the strengths and weaknesses of the process
  - Collectively evolve strategies and action plans to fortify the strengths and eliminate the weaknesses

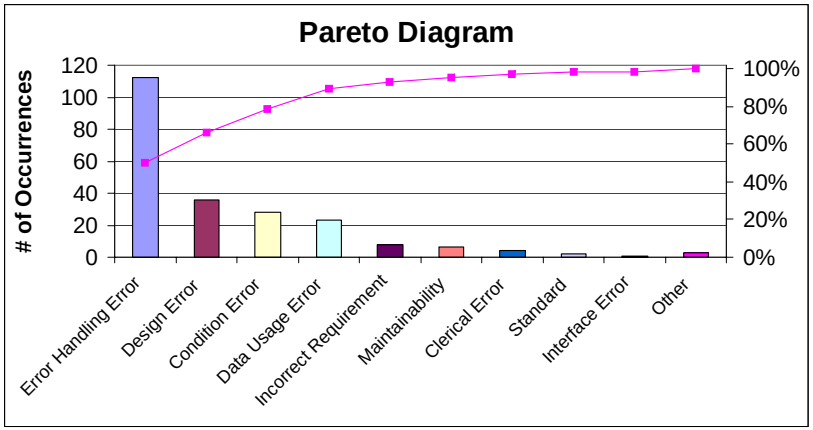
- ✓ When:
  - At the end of a particular activity
  - At the end of a phase
  - At the end of the project

# Causal Analysis Meetings

- ✓ A process of:
  - examining problems by tracing them to their source
  - developing methods to prevent a particular type of problems for being reintroduced
- ✓ When:
  - After a certain phase
  - During project postmortem
  - Event-driven (e.g. customer complaints, post-release defects, metrics analysis)

# Problem Selection for Causal Analysis

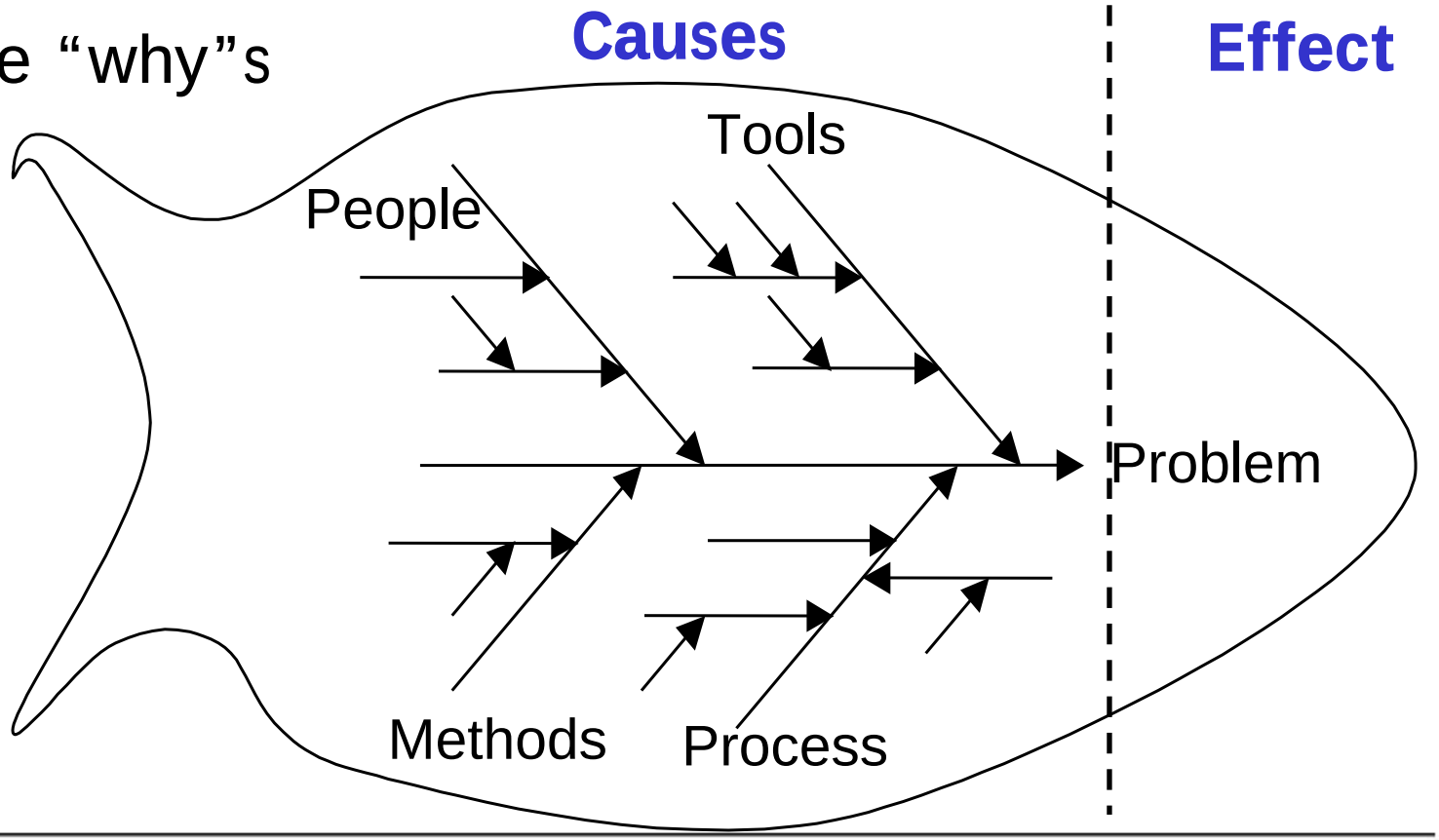
- ✓ Problems may result from:
  - Formal Reviews, Audits
  - Testing
  - Postmortems
  - Customer complaints
  - Analysis of Metrics



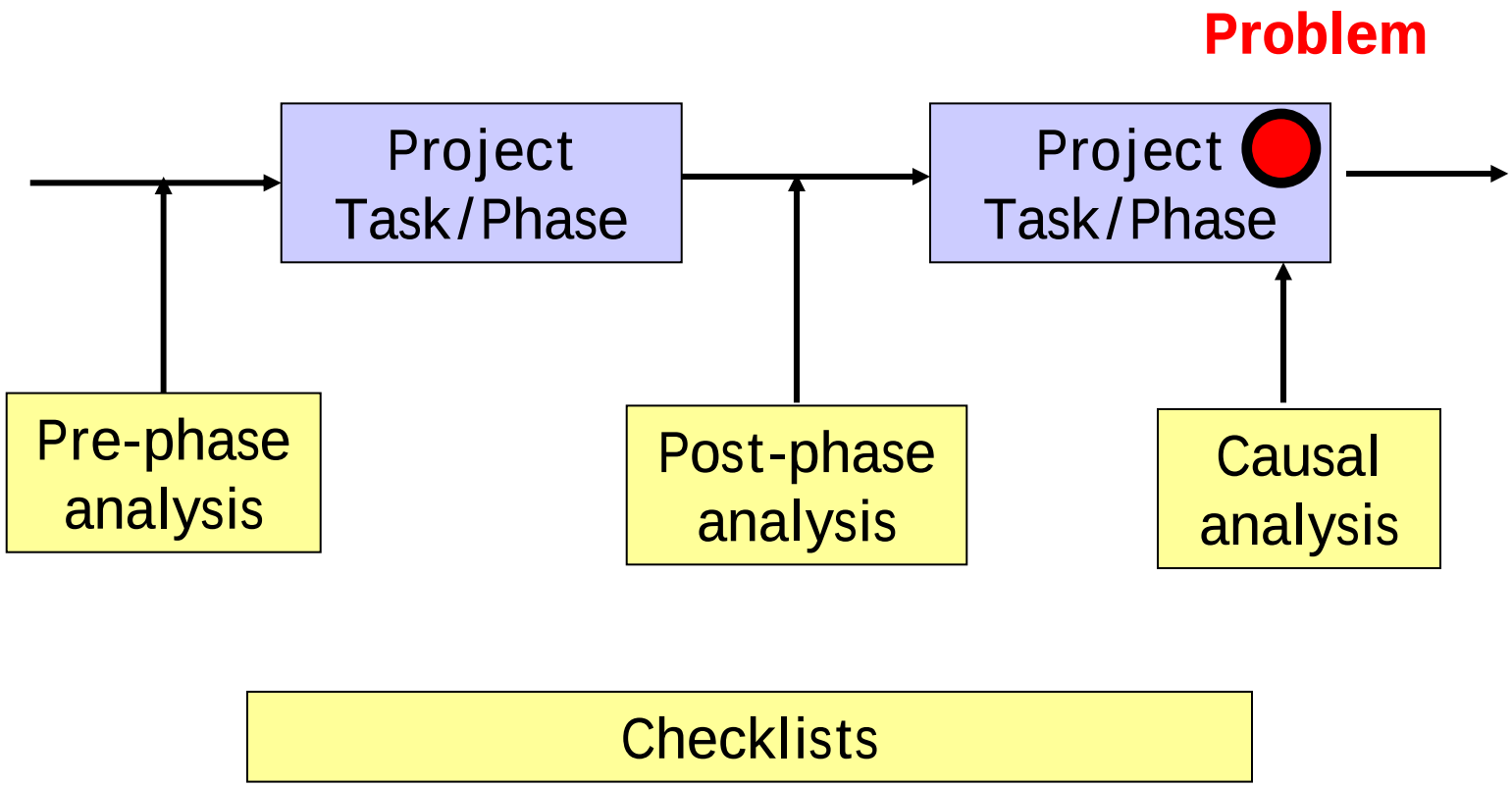

- ✓ Criteria
  - Most critical defects
  - Most costly defects (time spent for their resolution)

# Causal Analysis. Fishbone Chart

- ✓ Brainstorming
- ✓ Five “why”s



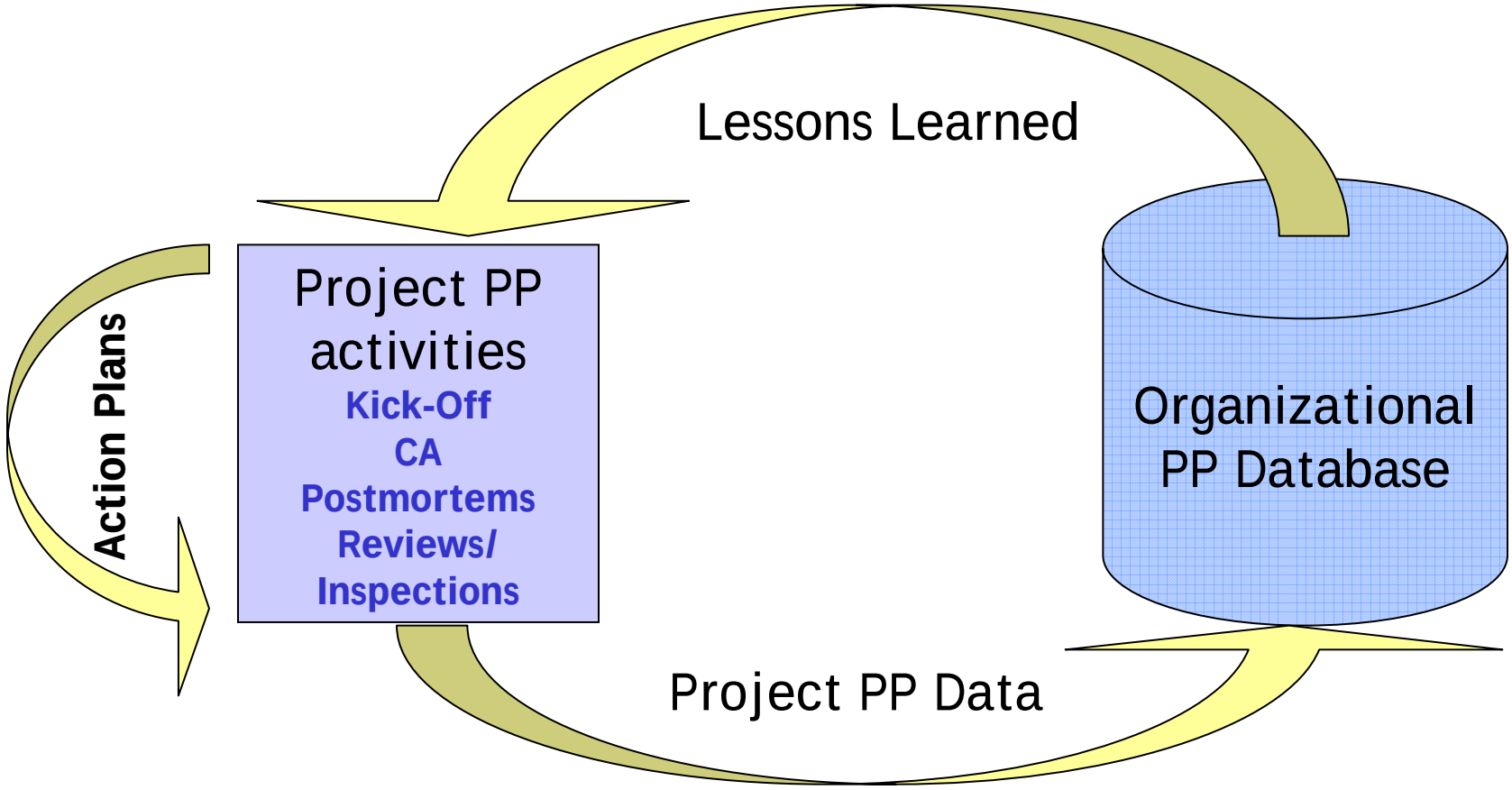
# Problem Prevention at Project lifecycle



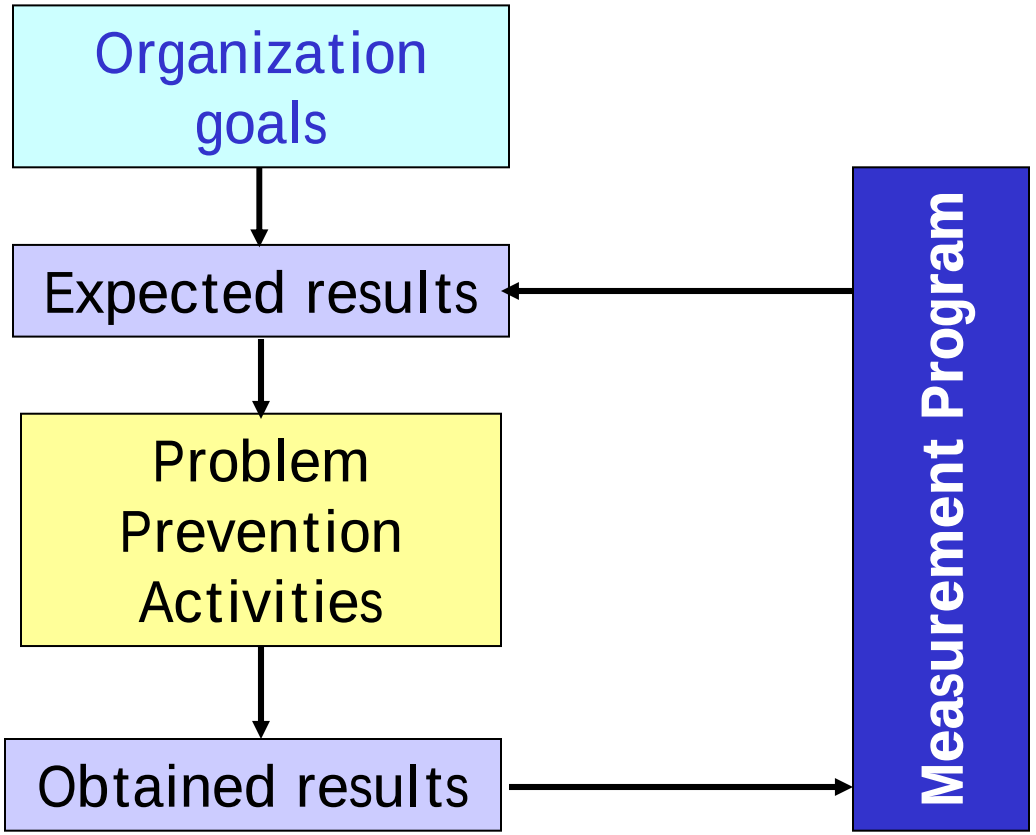
# Problem Prevention Culture

- ✓ Plan project PP activities
- ✓ Conduct PP activities following guidelines
- ✓ Record PP activities results
- ✓ Develop project action plans and organizational process improvements
- ✓ Implement action plans and suggested improvements
- ✓ Track PP activities and action plans

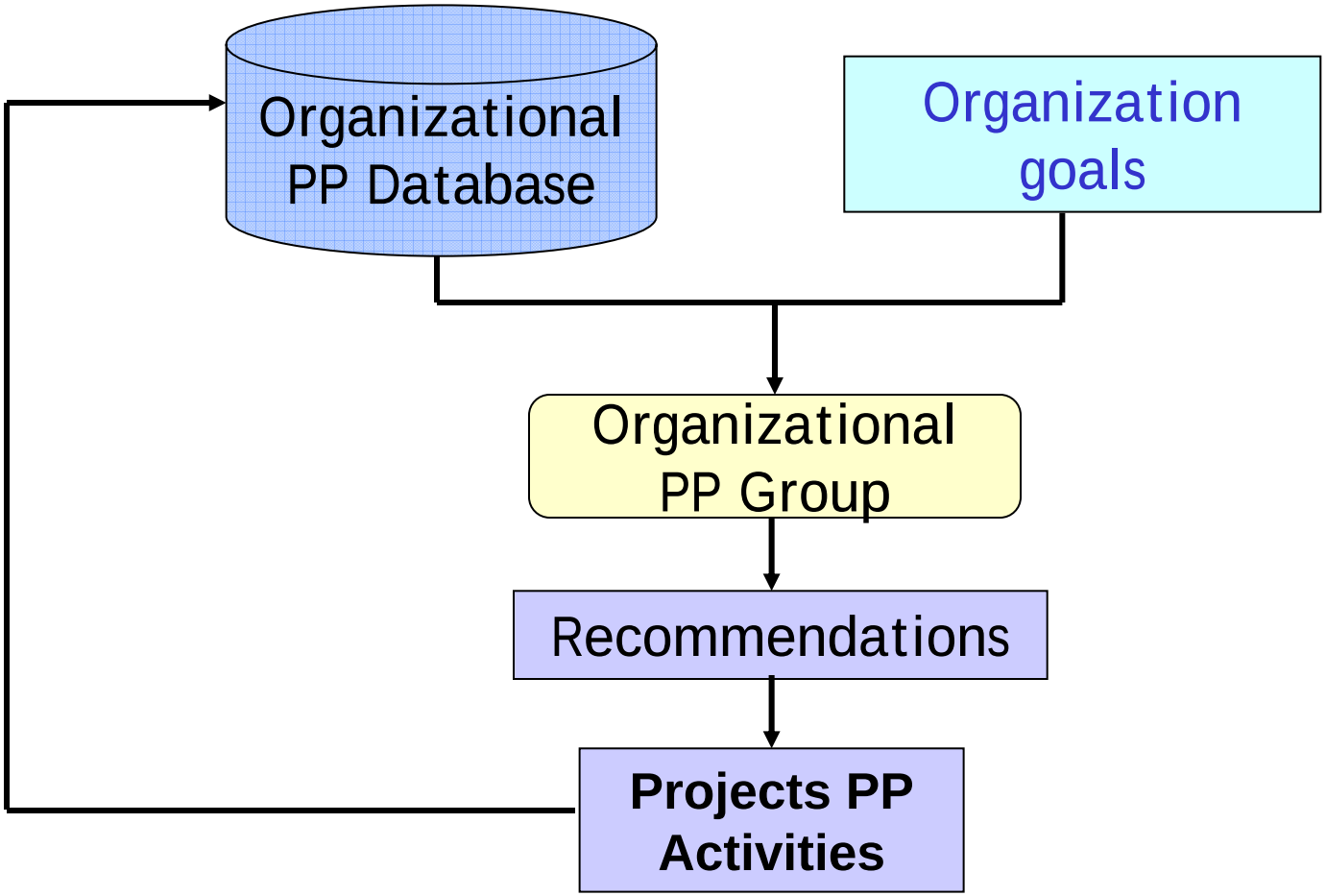
# Problem Prevention Data Flow



# Business-driven Problem Prevention



# Recommendations Development



# Recommendations. Example

✓ **Problem:**

High number of severe defects

✓ **Impacts:**

Products quality and development cycle time

✓ **Common Cause:**

Miscommunication within project teams

✓ **Recommendation:**

Enhance communication methods

- project mail-lists
- regular technical meetings
- project web-page

# Effectiveness of Problem Prevention

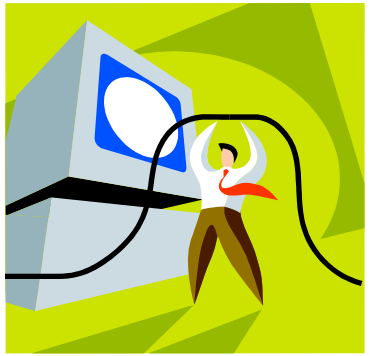
- ✓ Problem was solved
- ✓ Recommendation usage is successful
- ✓ Business goals are achieved

## Example:

- ✓ The organization met the goal regarding to SW quality
- ✓ The number of defects caused by miscommunication decreased by 23%
- ✓ The recommended communication methods are successfully used in the projects

# Conclusions

- ✓ Problem Prevention Process is vital for quality software products development
- ✓ Effective Problem Prevention is based on organizational goals
- ✓ Problem Prevention takes time



# Recommendations

- ✓ Trainings (Problem Solving methods, Effective meetings)
- ✓ Defined and documented process
- ✓ Lessons Learned Sharing
  - Organizational database
  - Coordination on organizational level
- ✓ Track and control

# Thank you! Questions?