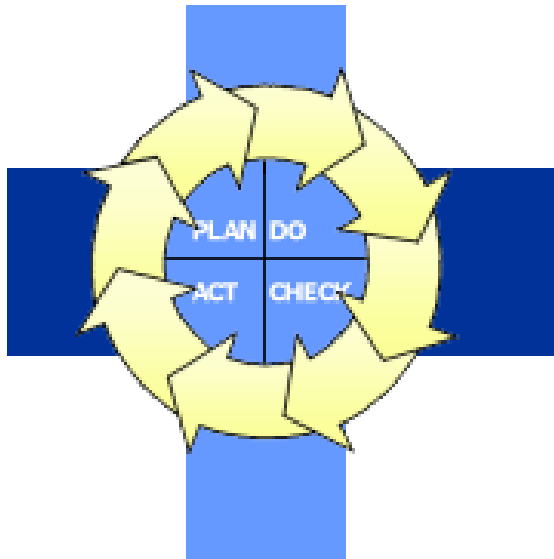




Software Process Training



Dr. Ernest Wallmüller
Wolfgang Höh

Qualität & Informatik
www.itq.ch



NASA took consequences from the Columbia Disaster : Manager fired!

Washington:

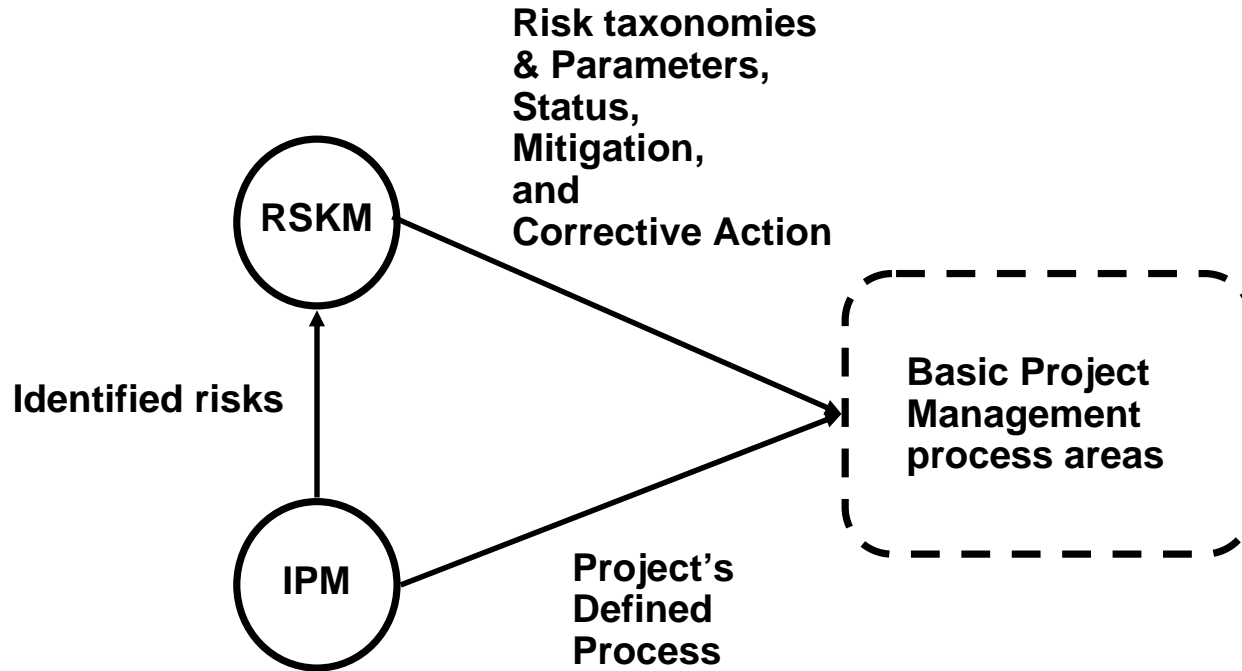
- NASA boss Sean O'Keefe will renew the (risk) culture of the agency.
- The final report says:
Missing risk awareness and lacking moral courage of employees

Don't forget: **Swissair, Enron, KirchGruppe, Toll-Collect, SV-Chipkarte and others**



7 crew members died on February, 1st 2003

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■ Policy

Establish Risk Management for better (more accurate and proactive) planning and coordination of the projects. If a risk materializes you need to have contingency measures in place.

■ Scope

All SW developing and producing units in AVL SBU MES.

■ Purpose

Purpose of Risk Management is to identify potential problems before they occur, so that risk-handling activities may be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives. Risk Management addresses technical as well as business issues.

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- **Method:** *Individual*
- **Timing:** *10'*
- **Form:** *Individual elaboration*
- **Documents:** *Process Rule 14; form: next foil*
- **Deliverable:** *Filled in form*

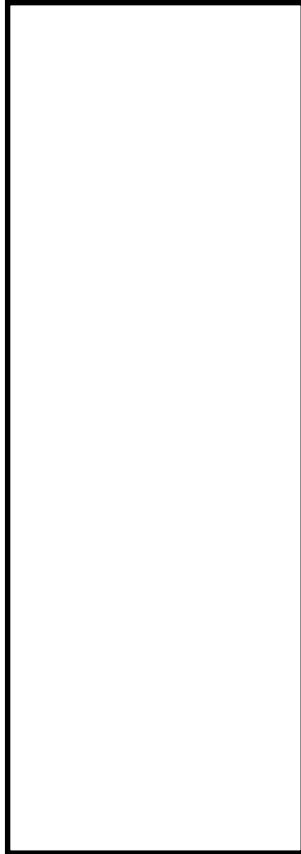
Question:

- I. Based on your experience, the prior discussion and the RSKM process definition list the involved roles, the performed activities, and the produced work products.*

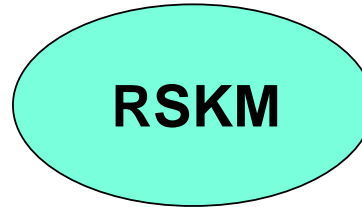
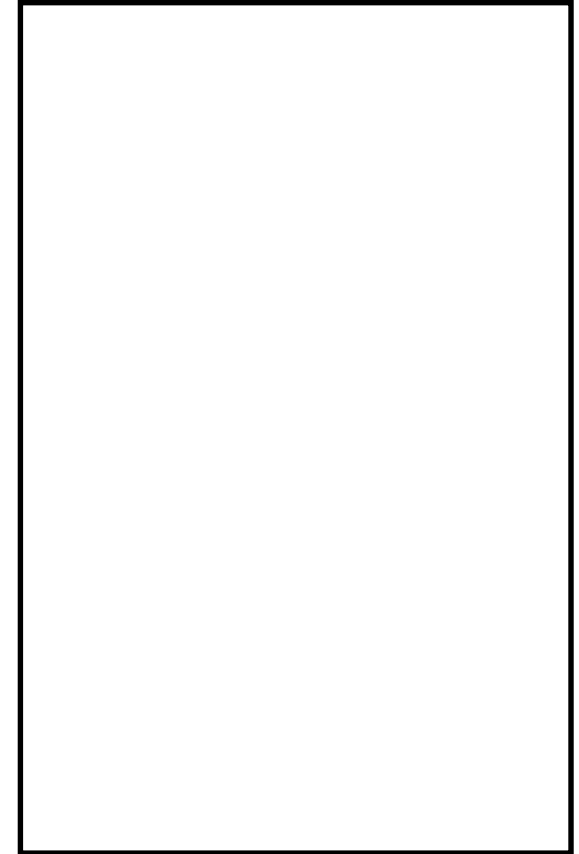


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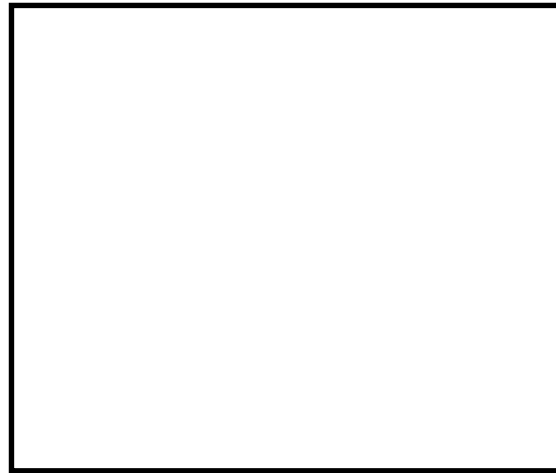
Roles



Work Products



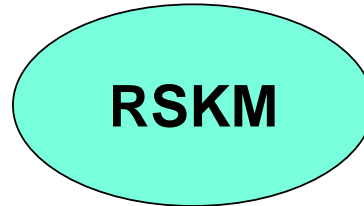
Activities



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Roles

- PL-DP
- Risk Manager
- PL-CP



Activities

Prepare for Risk Management

- Determine Risk Sources and Categories
- Define Risk Parameters
- Establish a Risk Management Strategy

Identify and Analyze Risks

- Identify Risks
- Evaluate, Categorize, and Prioritize Risks

Mitigate Risks

- Develop the Risk Mitigation Plan
- Implement Risk Mitigation Plans

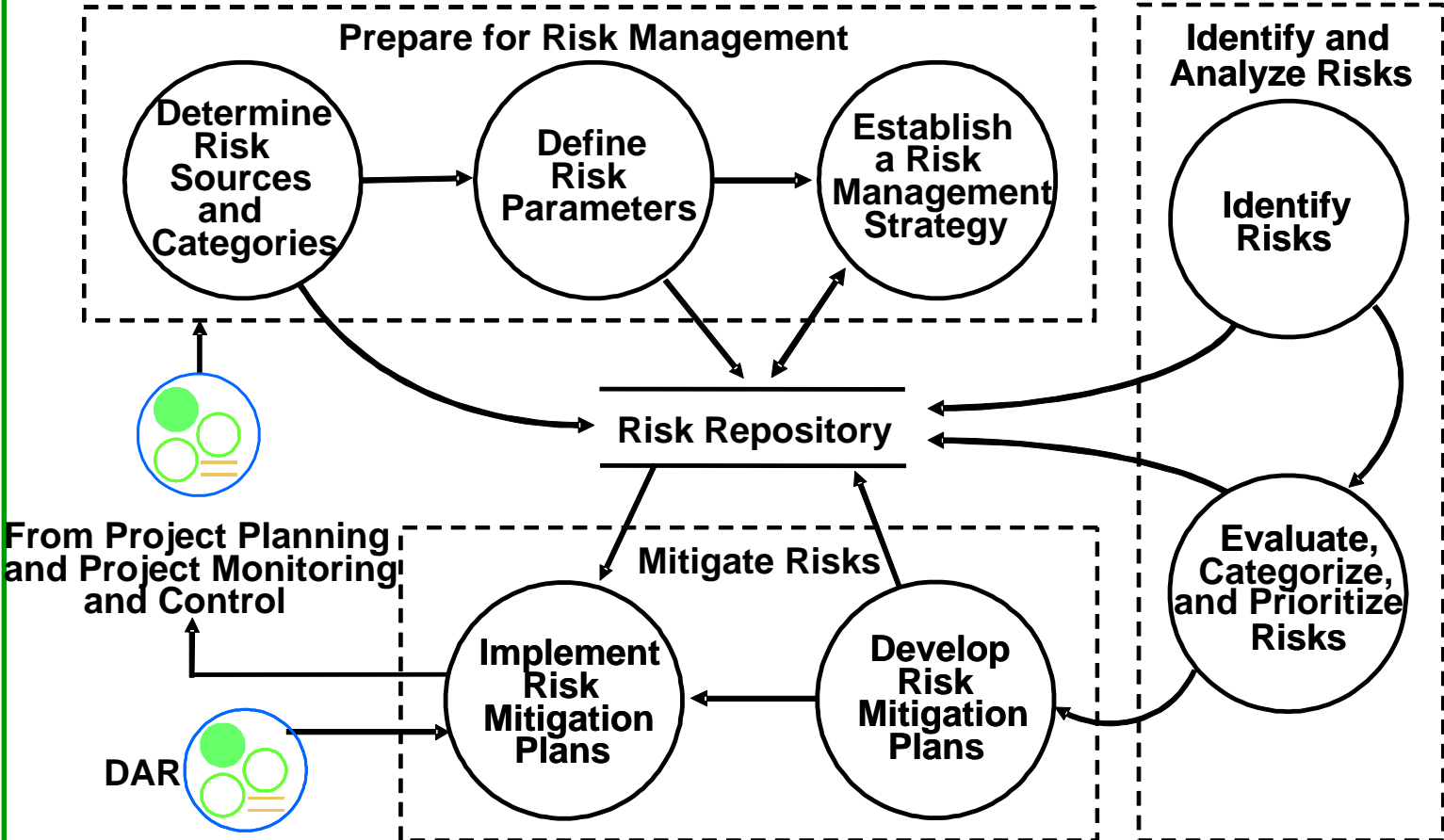
Work Products

- Ranked risk list incl. risk mitigation plan
- PIP project status report with main risks

RSKM Process with Practices

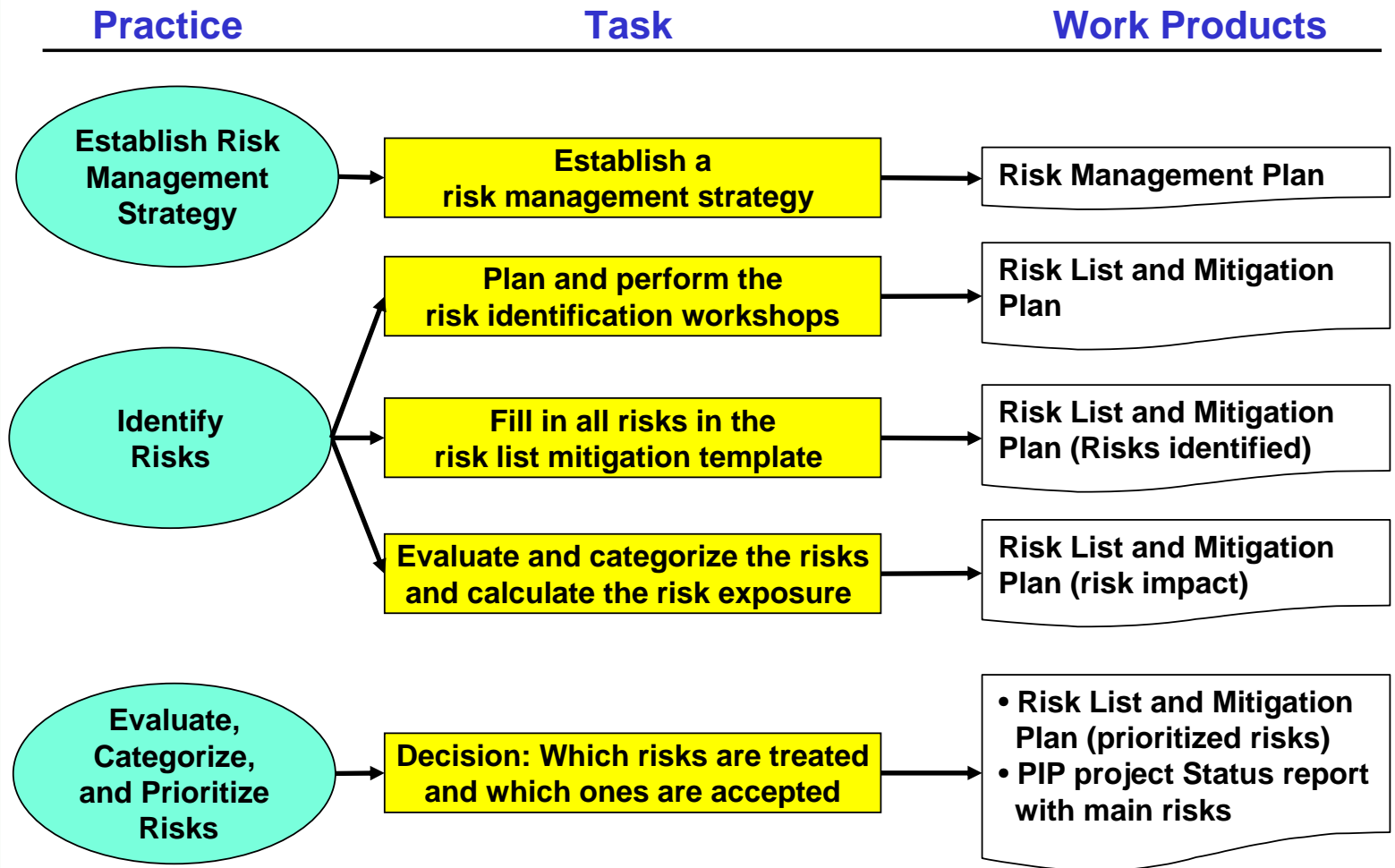


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OPF	Schedule/Site <ul style="list-style-type: none"> • Time frame • Geography • Location • Real Schedule vs. Bid Schedule 	Sub-Contractors <ul style="list-style-type: none"> • Statement of Work • Price • Terms & Condition • Resources/ Experiences • Subcontractor Management • Quality Control • Invoicing • Alternate Sources • Risk as Competitor 	Resources <ul style="list-style-type: none"> • Bid/Proposal Resources • Skills/Qualification/ Capabilities • Implementation Resources • Facilities (e.g. Space, Equipment) • Logistics • Unrealistic Schedule Estimates or Allocation • Cost or Funding Issues • No Risk Management available to coordinate MES Projects • Problems with previous versions (Task Forces, Bug Fixing)
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OT	Technical <ul style="list-style-type: none"> • Uncertain Requirements • Prototypes • Tools • Functionality • Technical Performance • Available and Future Technologies • New Technology: Effort Estimation -> no historical Estimates are available • Not feasible Design • Unavailable Technology • Architectures • Integration • Support Service • (Training, Rollout, Installation) • Baseline Management • Unproven Hardware • Capability for Maintenance 	Contract <ul style="list-style-type: none"> • Uncertain or inadequate Subcontractor Capability • Change Control Process • Terms & Condition/Payment Plan • Acceptance Criteria • Statement of Work/Deliverables 	Innovation Projects <ul style="list-style-type: none"> • Market Knowledge • Transformation Client Needs • Speed Idea => Product • Changes of Requirements • Team • Management Support/Commitment • Number of Projects in Parallel
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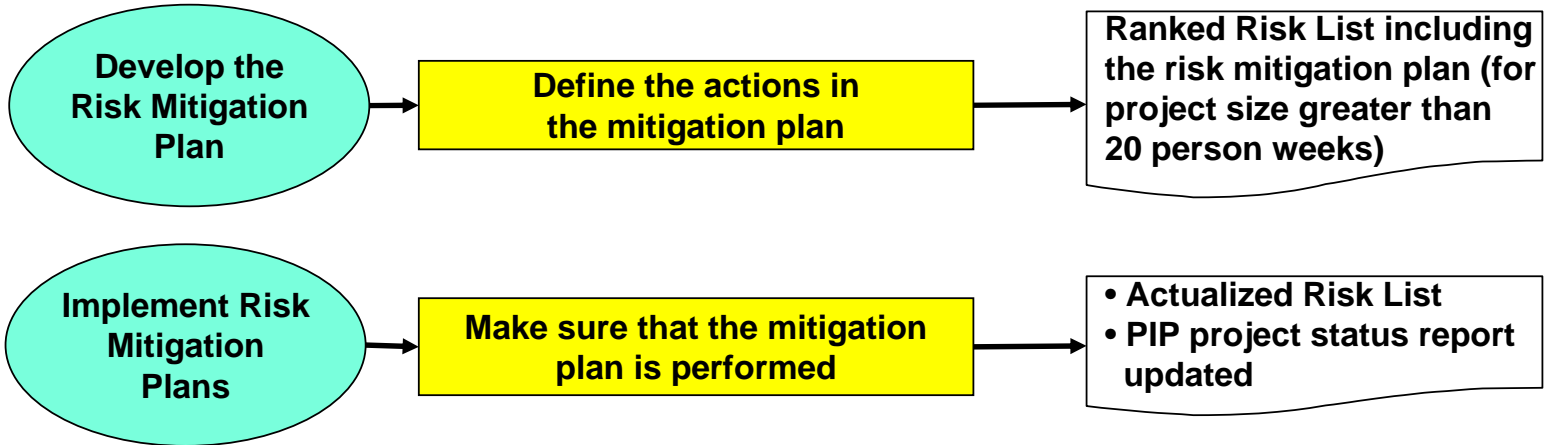


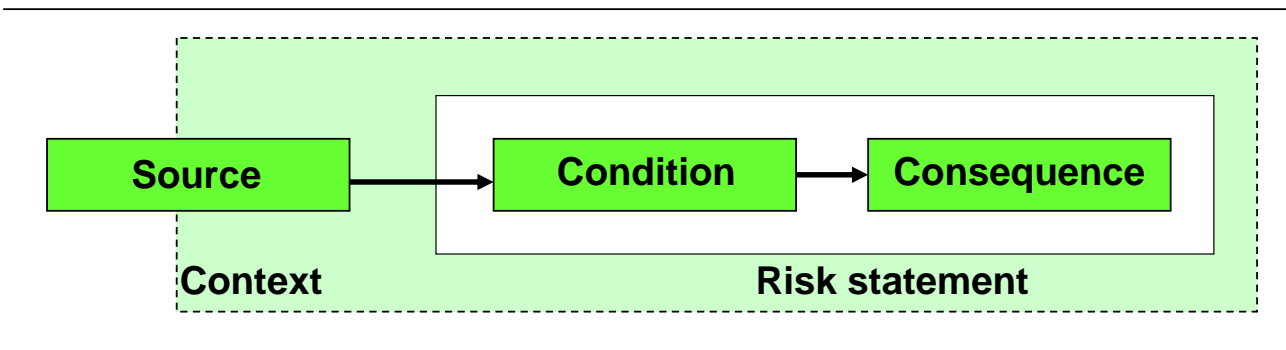
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Practice

Task

Work Products





For example:

***The commercial off-the-shelf (COTS) high-speed data link selected by the project team was never envisioned by the vendor to be used in a hardened environment;
it may not perform as needed, causing rework and integration slips.***

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■ Qualitative Method at AVL:

- Probability is an actual value between 1 (low) and 10 (high)
- Impact is an actual value between 1 (low) and 10 (high)



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- **Calculated based on:
(probability percentage) x (risk category impact)**
- **Sometimes the risk category Impact and/or Probability are not available as a quantitative figure -- in these cases a relative assessment may be used e.g.**
 - assign value for probability between 1 and 10
 - assign value for cost impact between 1 and 10
- **Quantitative values for the top risks must eventually be supplied**

Exercise: Evaluate Risks and Calculate Risk Exposure

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- **Method:** *Group work: Groups of 2 people*
- **Timing:** *20' group work, 15' discussion*
- **Form:** *Group elaboration*
- **Documents:** *Process Rule 14: RSKM
Template_RSKM_Risk_List_Mitigation_Plan.xlt*
- **Deliverable:** *Solution on paper (copy of template)*

- **Question:**
 - I. Please select a project that you know from your job situation*
 - II. Identify only 2-3 risks (brain writing)*
 - III. Evaluate the found risks (analyze probability and impact)*
 - IV. Calculate risk exposure and rank the risks*

Rule 14: Work Products and Templates



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WP Id	Type	Description	Task Id	Resp.	Link to Template
RSKM_W01	M	Ranked Risk List including the risk mitigation plan for project size greater than 20 person weeks	RSKM_T03 RSKM_T04 RSKM_T05 RSKM_T06	PL-DP or PL-CSE	Template_Risk_List_Mitigation_Plan.xlt
RSKM_W02	M	PIP project status report with main risks	RSKM_T04	PL-DP or PL-CSE	Project_Summary_Report_yyyy_mm.dot

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- **Method:** *Small groups*
- **Timing:** *10' group work, 10' discussion in plenum*
- **Form:** *Group elaboration*
- **Documents:** *none*
- **Deliverable:** *Group notes*

- **Question:**
Executing processes is based on people in charge of performing one or more roles in a process.
 - I. *Where do you define roles and responsibilities?*
 - II. *What is important when assigning roles and responsibilities in a process?*

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GP 2.4 ASSIGN RESPONSIBILITY

Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process.

Purpose:

Ensure that there is accountability for performing the process and achieving the specified results throughout the life of the process. The people assigned must have the appropriate authority to perform the assigned responsibilities.

Practice:

Responsibility can be assigned using detailed job descriptions or in living documents, such as the plan for performing the process. Dynamic assignment of responsibility is another legitimate way to perform this generic practice, as long as the assignment and acceptance of responsibility are ensured throughout the life of the process.

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*What was important for
you concerning this
Process Rule?*



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