Projektmanagement Vertiefung

Sommersemester 2017

Dr. Matthias Horn

7. Quality Management

8 Project Quality Management

includes activities that determine
- quality policies
- responsibilities
- objectives

implements quality management system
- so that the project will satisfy its quality objectives

processes
- Plan quality management
- Perform quality assurance
- Control quality

Project Quality Management

Must address both

- management of the project
  - applies to all projects
- the product of the project
  - measures and techniques are specific to the product

failure to meet quality requirements in either dimension can have serious negative consequences

Examples: _____

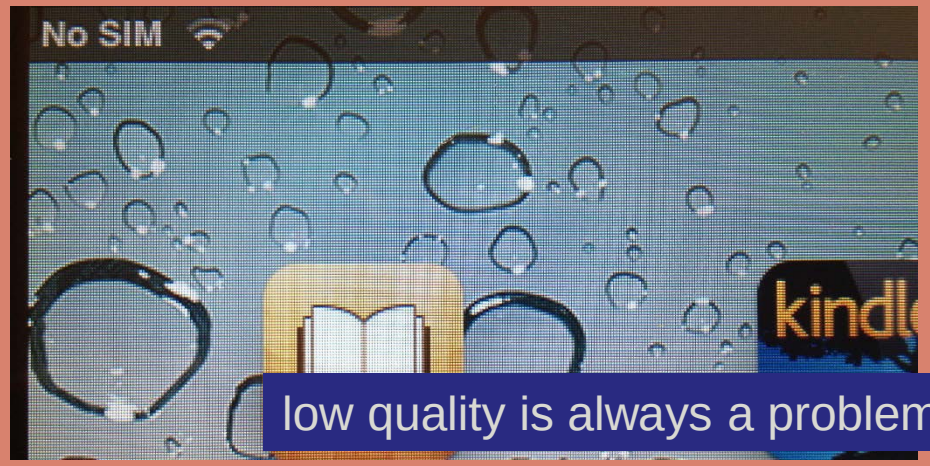
_____

Quality

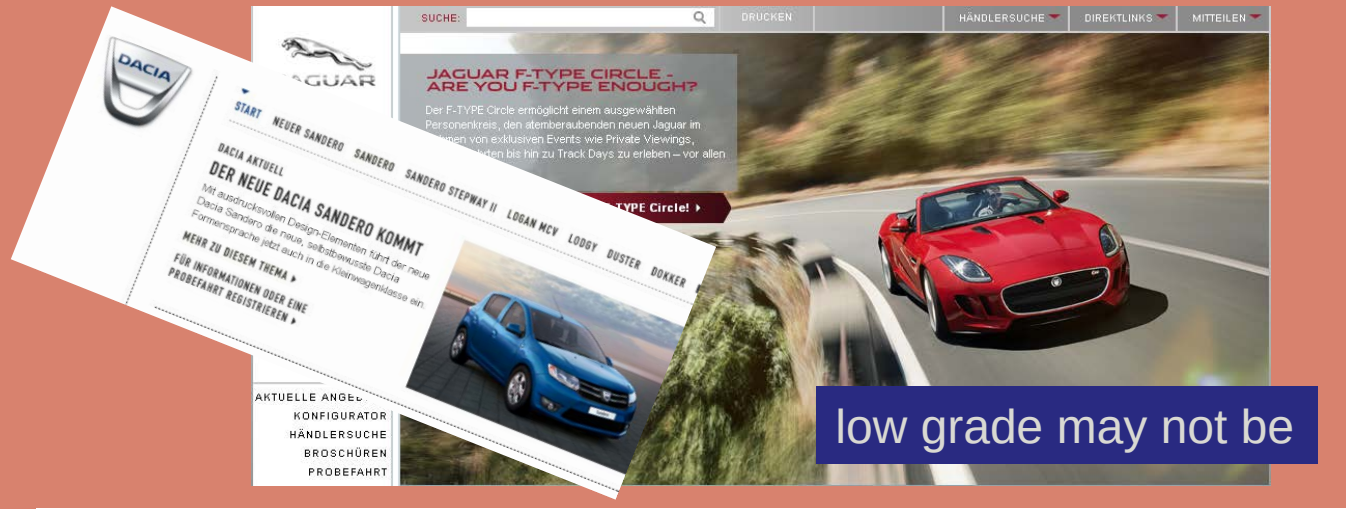
Quality is the degree to which a set of inherent characteristics fulfill requirements.

Quality vs. Grade

Quality is the degree to which a set of inherent characteristics fulfill requirements.



Grade is a category or rank given to entities having the same functional use but different requirements for quality.



Quality requirements in IT projects

Requirement				

Quality and project management
both recognize the importance of

- customer satisfaction
  - understanding, evaluating, defining, and managing the expectations
- prevention over inspection
  - quality is planned, designed and built in, not inspected in
- continuous improvement
  - plan-do-check-act as basis for quality improvement
  - process improvement models like OPM3® or CMMI®
- management responsibility
  - project and line management

Project Quality Management
Processes

Plan Quality Management
- identify quality standards
- how to satisfy them

Perform Quality Assurance
- applying the planned, systematic quality activities to
- ensure the project employs all processes needed to meet requirements

Control Quality
- monitoring specific project results to
- whether they comply with relevant quality standards
- identify ways to eliminate causes of unsatisfactory performance

8.3 Control Quality

monitoring specific project results to

whether they comply with relevant quality standards

- covers
  - Outputs of project processes
  - Project product

identify ways to eliminate causes of unsatisfactory performance

performed within the project or quality control department

can include corrective action

Examples of QC activities in IT projects

Project

- Feasibility study prior to project (phase)
- Document Review
- Collect metrics and compare to other projects

Product

- Testing within the project
- Acceptance test by customer
- Beta test
- Employ source code analysis tools
- Review code

8.3 Perform Quality Control
Knowledge and terms

prevention
: keeping errors out of the process

inspection
: keeping errors out of the hands of the customer

tolerances
: the result is acceptable if it falls within the range

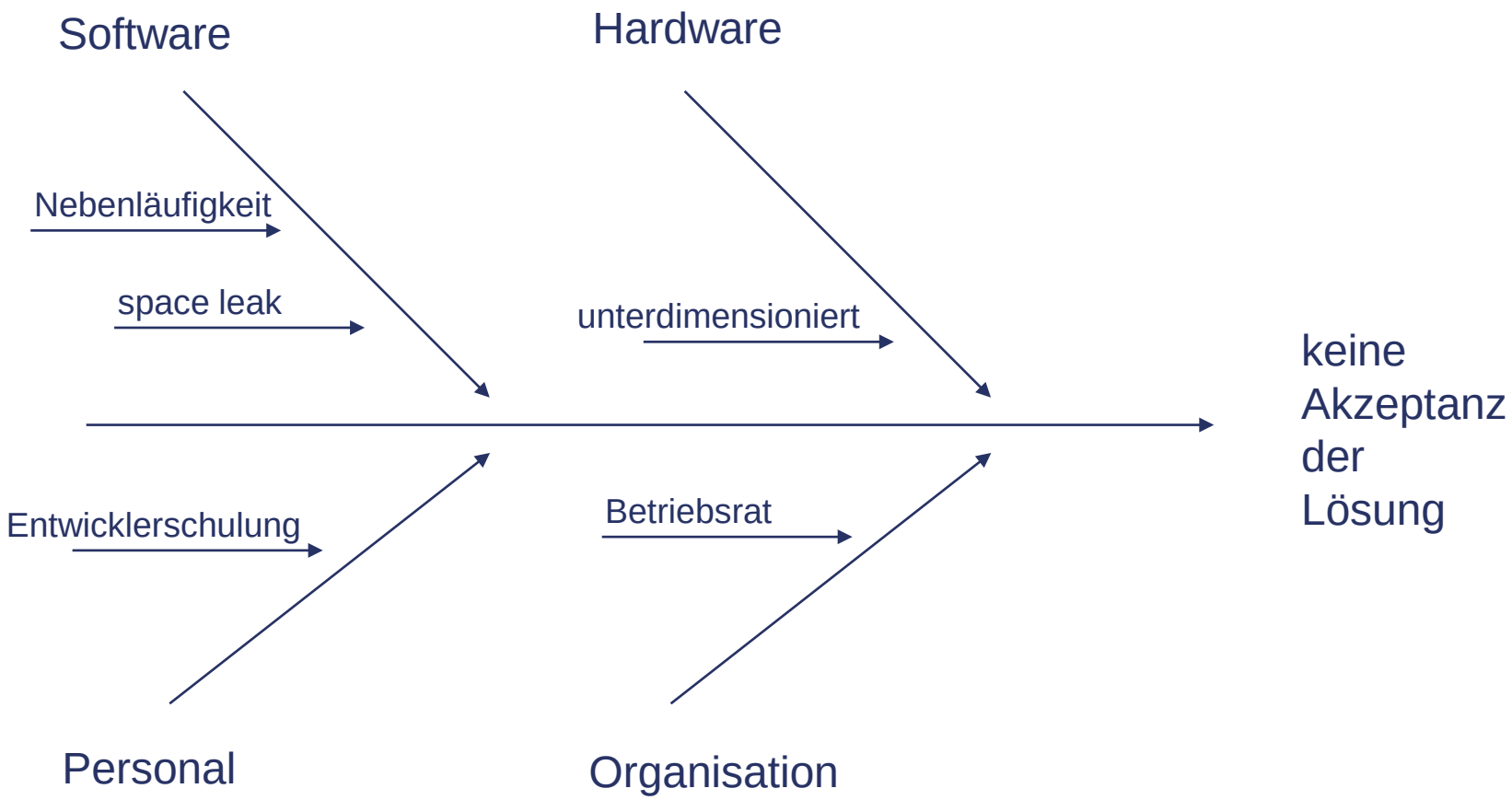
control limit
: the process is under control if the results falls within the limits

8.3 Perform Quality Control

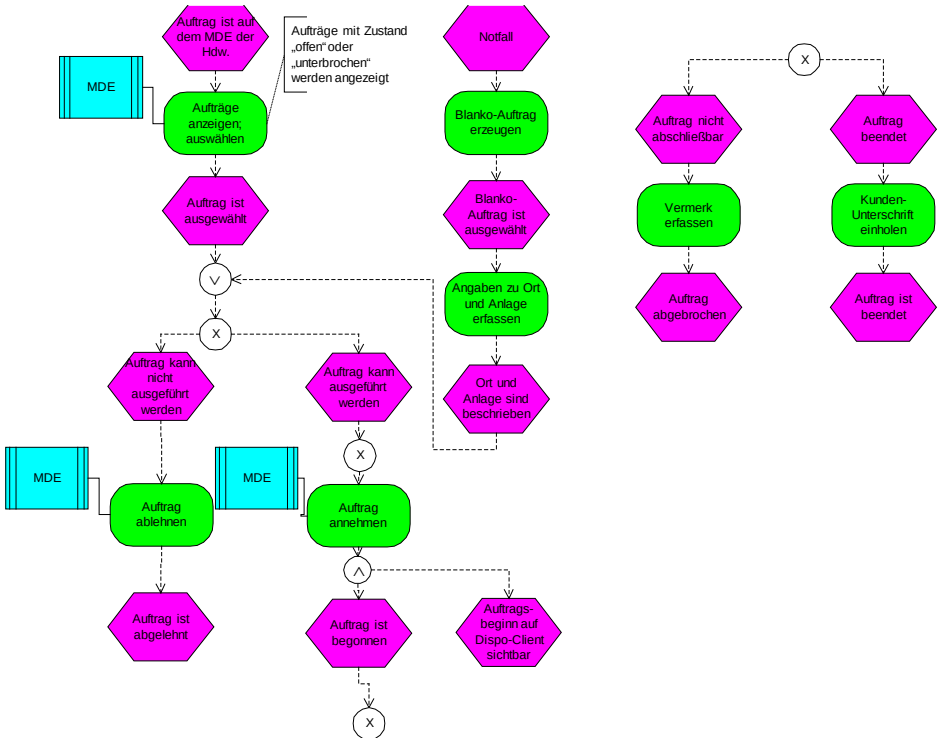
Tools & Techniques

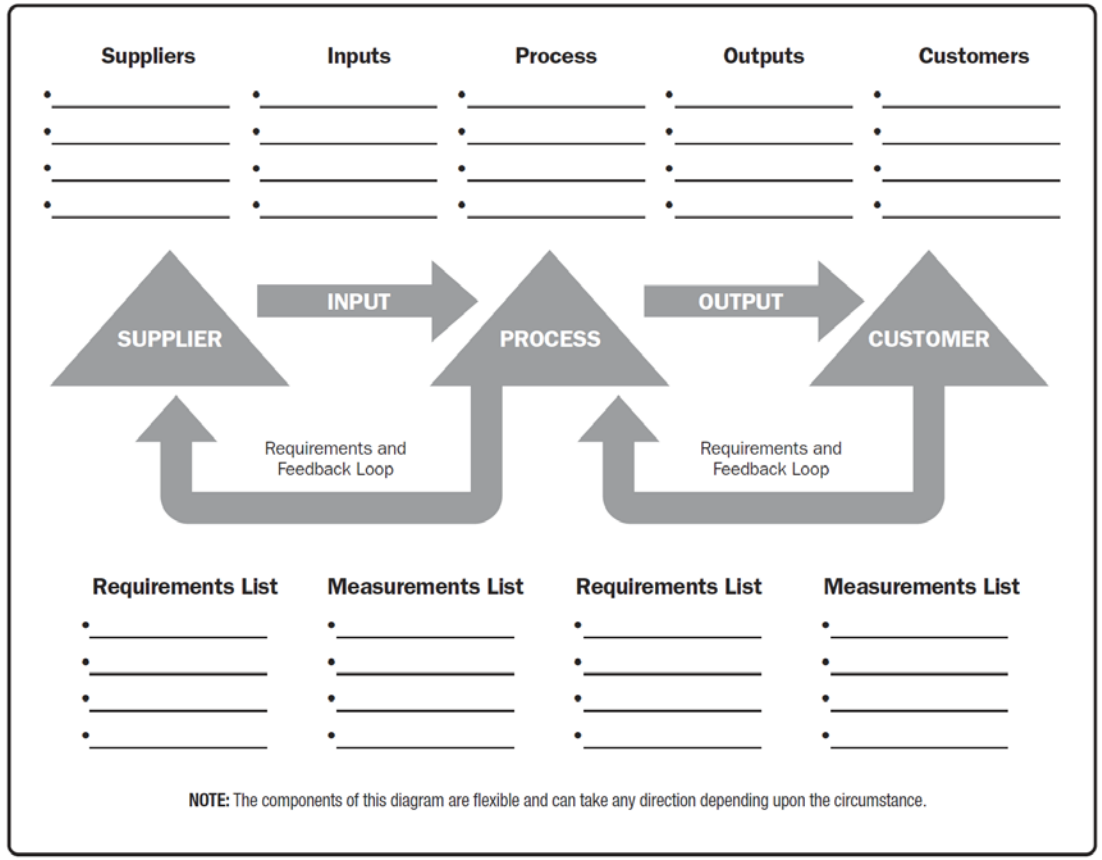
- Inspection
- Cause-and-effect diagrams
- Flowcharts
- Checksheets
- Histograms
- Pareto diagrams
- Control charts

Cause-and-effect diagrams (Ishikawa / fishbone)



Basic quality tools
Flow charting





Basic quality tools

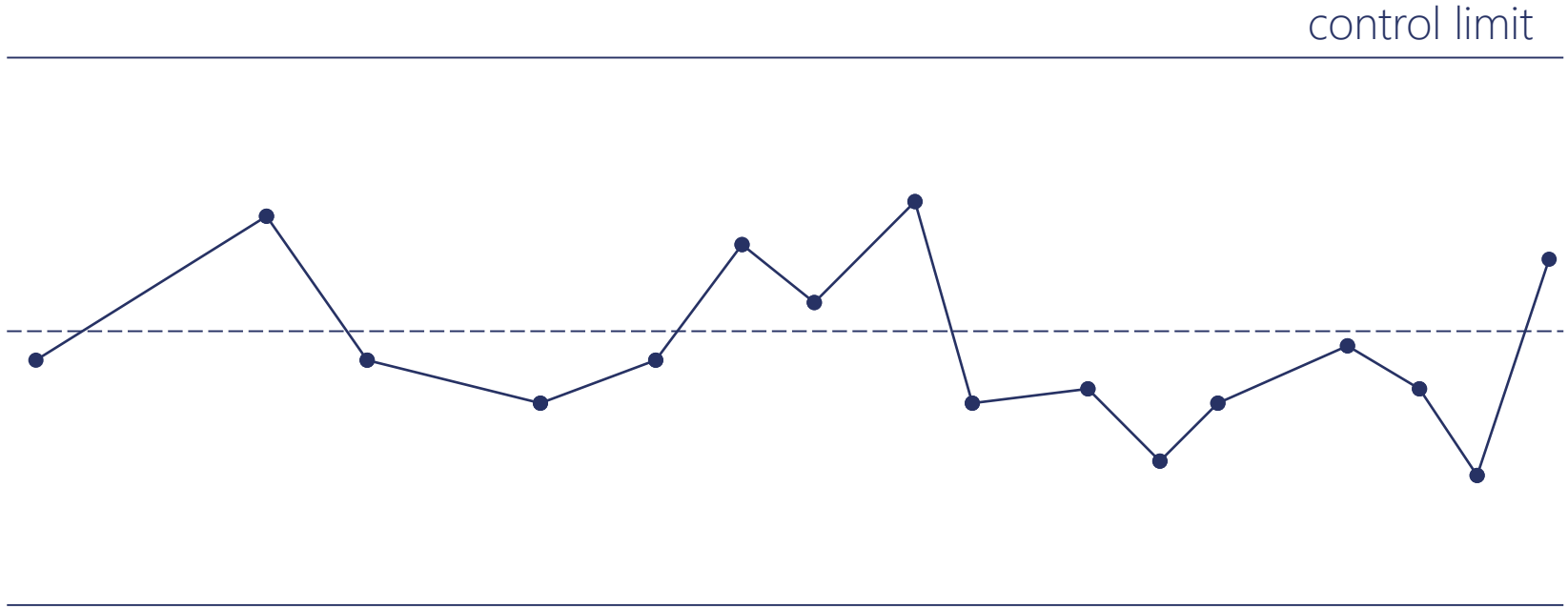
Check sheets

Production Readiness Checklist XXXX Cutover (YYYY)

#	Title	Due Date	Responsible	AIR	Description	Status	Comment
0	Before Change						
0.01	Customer Operations Managers and deputies are appointed.		EAI		Customer Operations Manager of all involed LOT applications and systems (e.g. EAI) must be appointed to and be assigned to AC account. Deputy to this role must be available. List CDM names and contact details as counterparts for Ulrich, role description, availability. Communicate to M.Hermainski.	pending	
0.02	Project teams have confirmed post-cutover-support		EAI		Project teams have confirmed standby support to resolve post cut-over issues with project know how.	pending	
0.03	Operations teams (3rd level support) are ready for production		EAI		Final documentation for internal use (application team) and support teams must be ready (including trouble shooting guides, checklists etc.) reviewed and delivered. Needed training was done. Delivery must be acknowledged. Sufficiency statement from application teams required.	pending	
0.04	Operations documentation was provided to C3 operating (AOC, 2nd level support)		EAI		Final documentation (including trouble shooting guides, checklists, MOPW entries etc.) for C3 operating teams is ready reviewed and delivered. Delivery must be acknowledged. Sufficiency statement from C3 operating was received.	pending	
0.05	C3 operating (AOC, 2nd level support) was trained for the new functionality		EAI		Needed training for C3 Operating staff was done. Sufficiency statement from C3 operating was received.	pending	
0.06	Training on operational procedures, support tools, SLA terms, system documentation must be formally delivered in training course and acknowledged by team members.		EAI		Proof that introduction and training and documentation has been provided. Applies only to cot overs of applications.	pending	
0.07	Shift schedule for 8 weeks after cutover is ready		EAI		Shift schedule for initial 8 weeks of operation is prepared incl. travel arrangements etc. Applies only to cot overs of applications.	pending	
					Customer Operations Manager of all involed LOT applications		

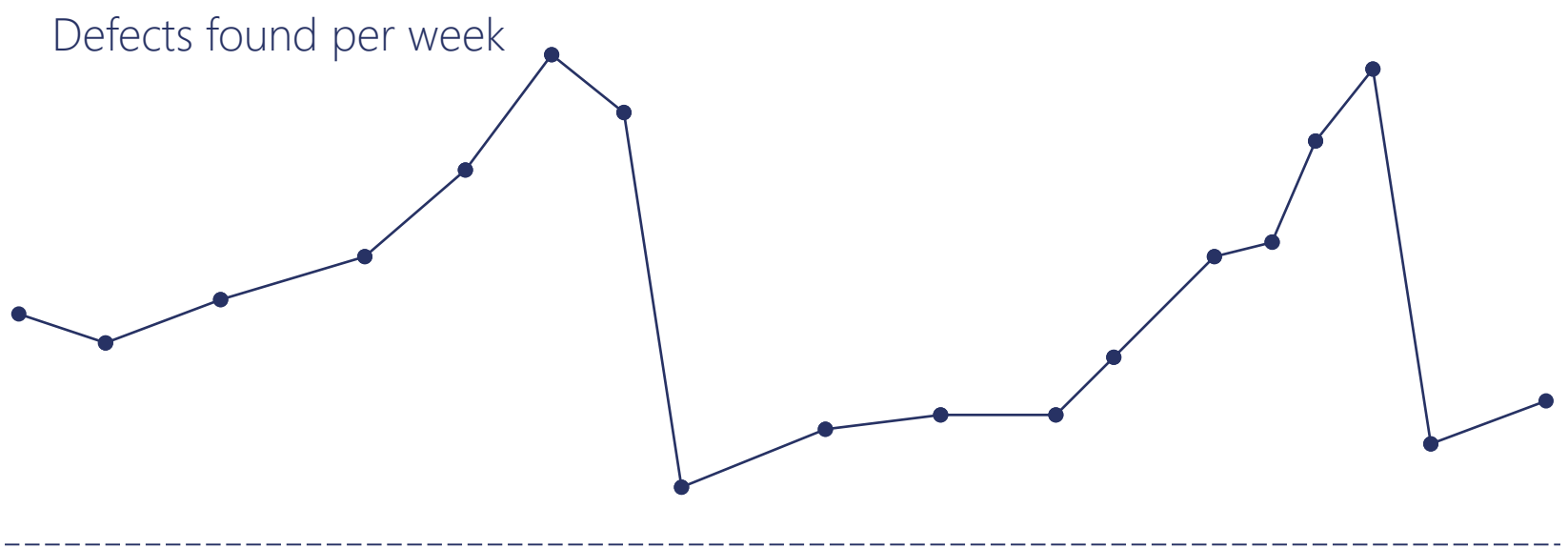
Basic quality tools

Control charts

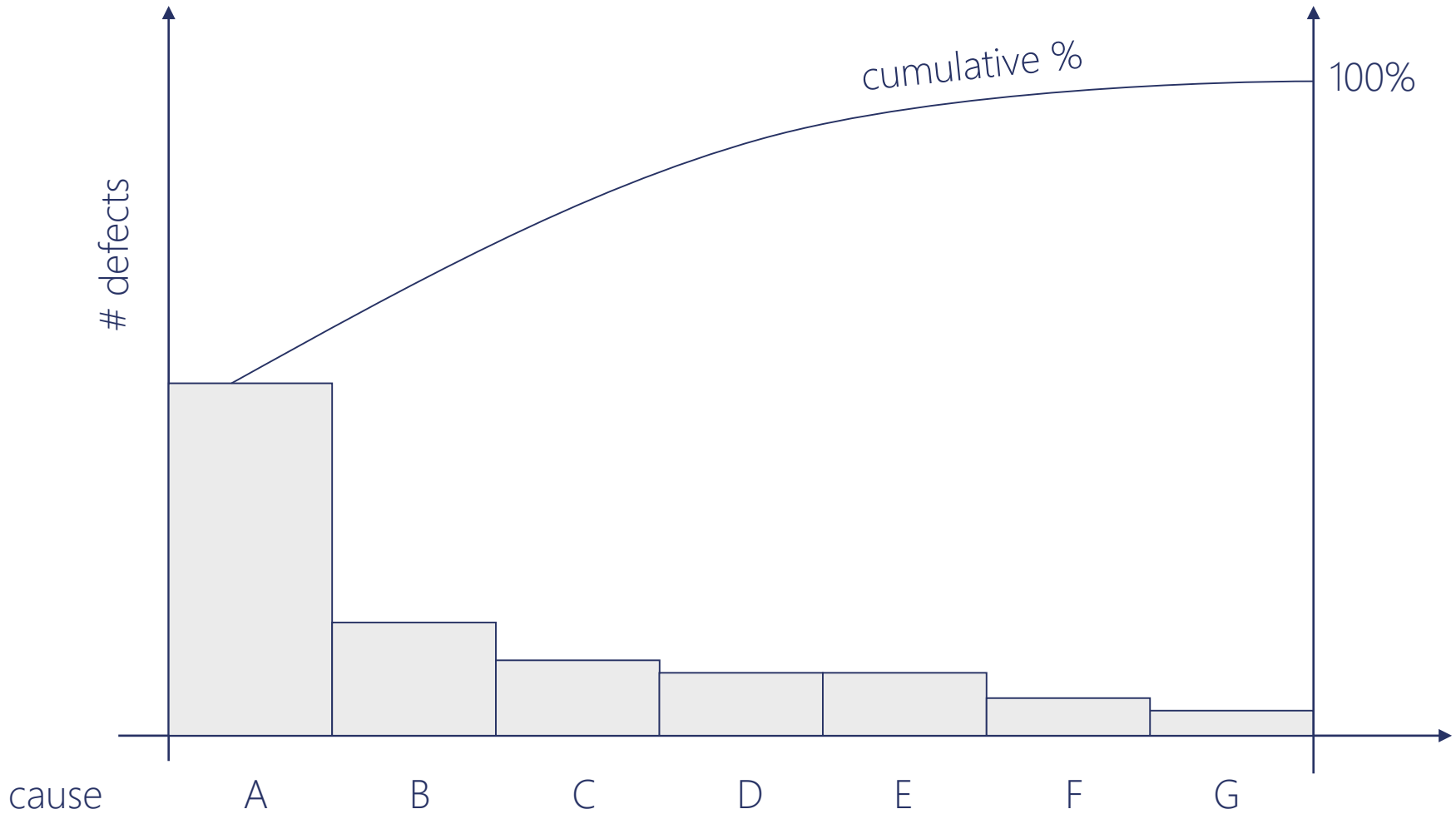


Basic quality tools

Control charts



Pareto Diagram



8.3 Perform Quality Control
Outputs

- Quality Control Measurements
- Validated changes
- Verified deliverables
- Work performance information
- Change requests
- Project management plan and document updates

Project Quality Management
Processes

Plan Quality Management
- identify quality standards
- how to satisfy them

Perform Quality Assurance
- applying the planned, systematic quality activities to
- ensure the project employs all processes needed to meet requirements

Control Quality
- monitoring specific project results to
- whether they comply with relevant quality standards
- identify ways to eliminate causes of unsatisfactory performance

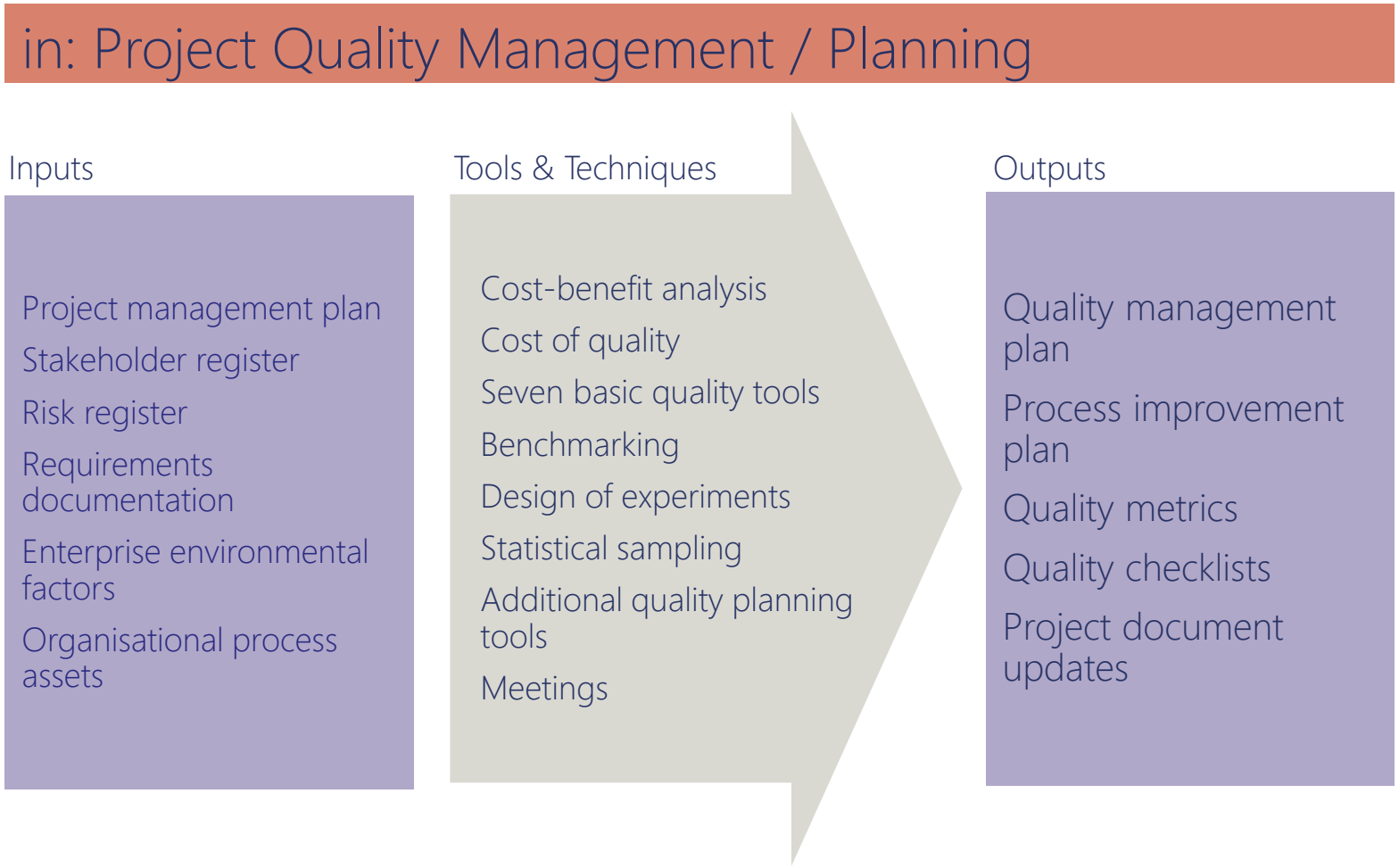
8.1 Plan Quality Management

identifying quality standards relevant to the project

determine how to satisfy them

key process in planning process group
- performed in parallel with other planning processes
- may require changes
  - product
  - schedule
  - cost
- may require risk analysis

8.1 Plan Quality Management



8.1 Plan Quality Management

Tools & Techniques — Cost of Quality

Cost of measures

Prevention costs
- training
- document processes
- equipment
- time to do it right

Appraisal costs
- testing
- destructive testing loss
- inspections

cost spent to avoid failure

Cost of Nonconformance

Internal failure costs
- rework
- scrap

External failure costs
- liabilities
- warranty work
- lost business

cost because of failure

8.1 Plan Quality Management

Tools & Techniques Cost-Benefit Analysis

tradeoff between

- benefit
  - less rework, higher productivity, lower costs, increased stakeholder satisfaction
- cost
  - expense associated with quality management

Phil Crosby: "Quality is free" 1979

1995

Cost of Quality = Cost of measures + Cost of nonconformance

8.1 Plan Quality Management

Tools & Techniques

- Inspection
- Cause-and-effect diagrams
- Flowcharts
- Checksheets
- Histograms
- Pareto diagrams
- Control charts

8.1 Plan Quality
Outputs

- Quality Management Plan
- Quality Metrics
  - failure rate, availability, reliability, etc.
- Quality Checklists
  - Example “cutover checklist”
- Process improvement plan details steps to
  - analyze processes
  - identify activities to improve them

Example „Test Management Plan“

Lufthansa Systems

IOCC@Transaero Test Concept

Project Quality Management
Processes

Plan Quality Management

identify quality standards

how to satisfy them

Perform Quality Assurance

applying the planned, systematic quality activities to

ensure the project employs all processes needed to meet requirements

Control Quality

monitoring specific project results to

whether they comply with relevant quality standards

identify ways to eliminate causes of unsatisfactory performance

8.2 Perform Quality Assurance (QA)

applying the planned, systematic quality activities to ensure the project employs all processes needed to meet requirements

usually provided to the project

- not actively involved in the project
- provides help for quality related activities
- responsible for continuous improvement

8.2 Perform Quality Assurance
Inputs

- Quality Management Plan
- Process improvement plan
- Quality Metrics
- Quality Control Measurements
  - fed back into QA processes
  - for use in re-evaluating and analyzing quality standards
- Project documents

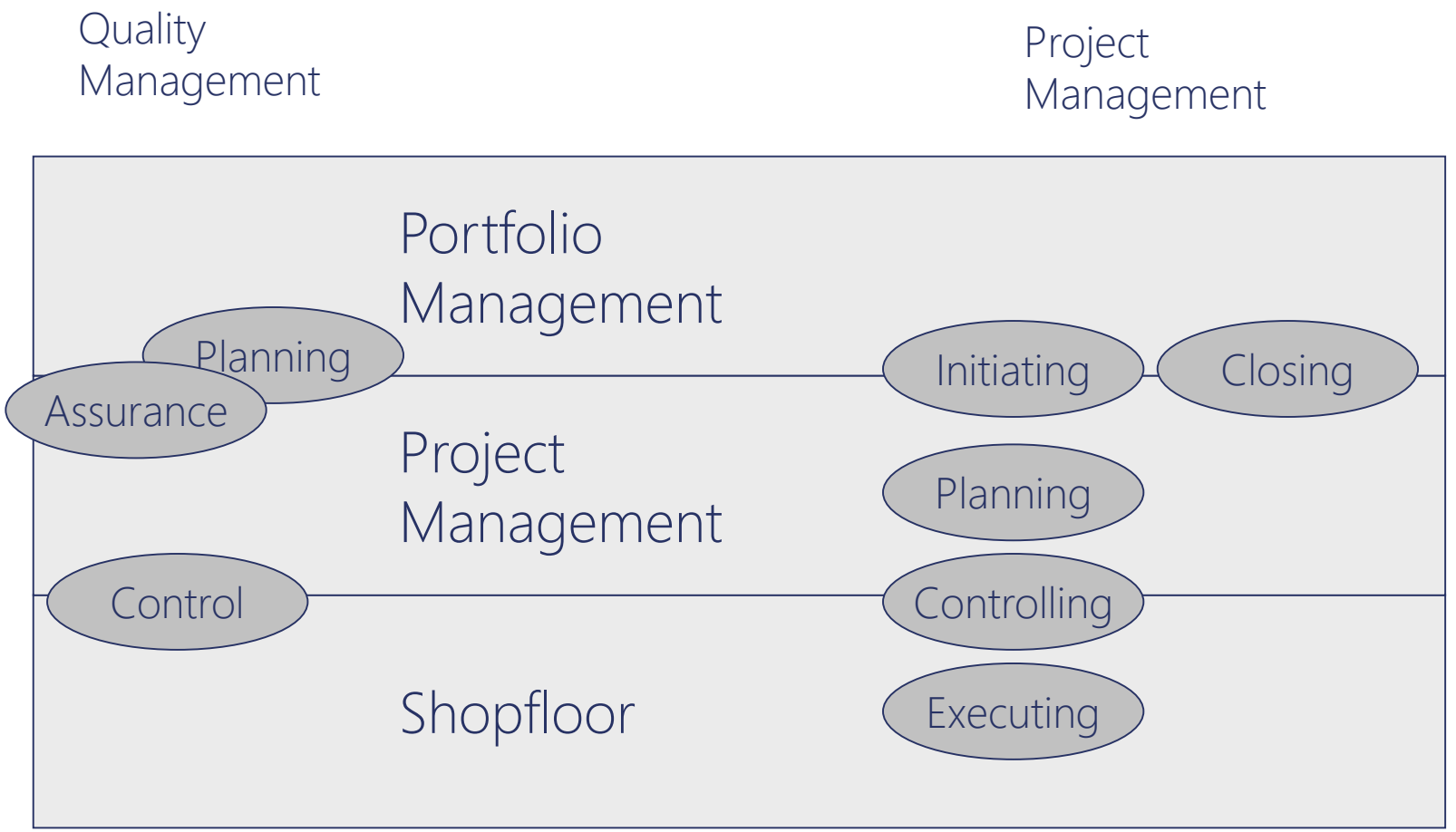
8.2 Perform Quality Assurance
Tools & Techniques

- Tools & Techniques mentioned in process “Plan Quality Management”
- Quality Audits
  - structured, independent review
    - whether project activities comply with organizational & project policies, processes, and procedures
    - identify inefficient & ineffective p., p. and p.
    - by in-house auditors or third parties
- Process analysis as defined in the process improvement plan

8.2 Perform Quality Assurance
Outputs

- Change Requests
- Project management plan and document updates
  - Recommended Corrective Action
- Organizational Process Assets updates

Organisational Levels
Quality vs. Project Management



Aufgabe 9

Identifizieren Sie für Ihr Projekt
5 Maßnahmen zur Qualitätssicherung.

Beschreiben Sie u jeder Maßnahme – -
- Inhalt der Maßnahme
- Verantwortung und Vorgehen
- Input- und Output

Für mindestens eine Maßnahme erstellen Sie bitte eine kurze Cost/Benefit-Analyse.