




Quality Management at Universities
Practical Aspects at a Departmental Level

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Agenda

- **Quality and Quality Management**
 - What does that mean ?
 - Why could this be relevant for a University ?
 - What possibilities for quality management do exist ?
- **Case Study:**
Department of Economics and Business Management
 - Description of the department
 - Development of a Quality Management System (QMS)
 - Presentation of several practical tools and methods
- **Conclusions**

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Quality & Quality Management

Basic Concepts

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Introduction

- **Main mission of a university**
 - research ⇒ knowledge creation
 - education ⇒ knowledge transfer
- **Actual challenges**
 - grown and changed requirements
 - more competition
 - less money
 - high internal potential for improvement
- **Need to act**
 - recognised by most of higher education institutions
 - but how to react ?
- **Possible concepts**
 - Quality assurance
 - Quality management

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What does quality mean ?

- **Quality is a complex construct**
 - dependent on who you ask (student, professor, employer, ministry, ...)
 - difficult to define "good" quality level
- **Definition by ISO 9000**
 - "degree to which a set of inherent characteristics fulfils requirements"
- **Quality = comparison between target and actual**
 - target: customer requirements
 - actual: measured characteristics
 - 2 important aspects:
 - determine customer requirements
 - measure product characteristics
- **Who defines requirements?**
 - first: customer
 - then: other stakeholder like employees, partner, society, ...

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Quality at different level

level	what does it mean ?
product	<ul style="list-style-type: none"> ▪ output of a process ⇒ output oriented ▪ value creation for customers, benefit ▪ satisfaction of customer (stakeholder) requirements
process	<ul style="list-style-type: none"> ▪ different working steps lead to output ▪ how these processes and activities are executed affects strongly the product quality ▪ consideration not only of process output, but also input and how activities interact
system (organisation)	<ul style="list-style-type: none"> ▪ potential to run processes and produce output ▪ people, organisational and infrastructural conditions ▪ affecting the quality of the process (and product)

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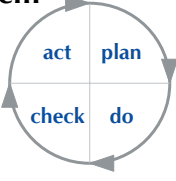
What does Quality Management mean ?



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- **Objective**
 - increase competitiveness through more effective and efficient value creation
- **Tasks of a quality management system**
 - define ...
 - plan ...
 - implement ...
 - measure ...
 - improve ... quality

⇒ in an effective and efficient way
- **Quality management system**
 - methods
 - processes
 - structure and responsibilities
 - culture



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Approaches for quality management



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- **Quality Assurance**
 - evaluation ⇒ identification of areas for improvement
 - accreditation ⇒ identification of areas for improvement
- **Quality Management**
 - ISO 9001 ⇒ process oriented management system
 - EFQM Excellence Model ⇒ holistic evaluation scheme
- **Tools and Methods**
 - benchmarking ⇒ comparison with others
 - Balanced Scorecard & Intellectual Capital Report ⇒ definition & deployment of strategies
 - Self Assessment, audit ⇒ performance measurement
 - performance indicators ⇒ identification of areas for improvement
 - ⇒ performance measurement

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And why Quality Management ?

- **To systematically fulfil stakeholder requirements**
 - higher level of expectations of customers
 - QM system required by law (Austria: UG 2002)
- **Define desired quality level for education & research**
 - through definition of stakeholders and their requirements
 - comparison: benchmarking, peer reviews and scientific discussion
- **React on changed environmental conditions**
 - adaptation to changed economic, political and social conditions
 - adapt organisational strategy, structure and processes
- **Establish a system for continuous improvement**
 - systematically improve products, processes and system
 - based on measured data
- **Standardise routine procedures**
 - minimize administrative time and effort
 - get more resources for key activities of a university (education & research)
 - increased transparency of processes and results
 - definition of clear responsibilities

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Case Study

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University of Leoben



Department of Economics and Business Management (WBW)

- **What is the WBW ?**
 - part of the Mining University of Leoben
 - offering business and managerial courses for technical oriented students
 - industry-oriented research activities
- **Human resources**
 - 1 professor
 - 12 scientific assistants
2 postdocs,
60% third-party funded
 - 4 non-scientific employees
in office and IT
 - 35 external lecturers
- **Main research areas**
 - Sustainability Management
 - Maintenance
 - Quality Management
 - Knowledge Management
 - Technology and Innovation
 - Public Management
- **Higher and further education**
 - approximately 70 collegiate courses
 - MBA programme:
Generic Management
 - courses for industrial partners



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Establishing our Quality Management

Developing the basis	1995 <ul style="list-style-type: none"> ■ Definition of key processes ■ Formulation mission statement and general principles ■ Introduction of yearly employee appraisals ■ First ISO 9001 certification in 1995
Further establishing	1996 <ul style="list-style-type: none"> ■ Periodical Strategy Meeting ■ Introduction of satisfaction surveys for industry partners and alumni
Dynamic	1997 <ul style="list-style-type: none"> ■ First self assessment according to EFQM 1998 <ul style="list-style-type: none"> ■ Introduction of a performance measurement system ■ Introduction of yearly employee satisfaction surveys ■ Development of a IT system supporting the management system ■ Winning the Austrian Quality Award AQA in 1999 1999 <ul style="list-style-type: none"> ■ Introduction of graduand satisfaction interview ■ Introduction of self assessment of projects and dissertations
Focussing	2000 <ul style="list-style-type: none"> ■ Publication of the first Intellectual Capital Report ■ Winning the Speyer Quality Award for administration in 2002 ■ FIBAA accreditation of MBA Generic Management in 2003




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Quality Management System
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University of Leoben

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Steps towards our QMS

```
graph TD; A[mission statement & general principles] --> B[definition of key processes]; B --> C[identification and definition of stakeholders]; C --> D[development of our Quality Management System];
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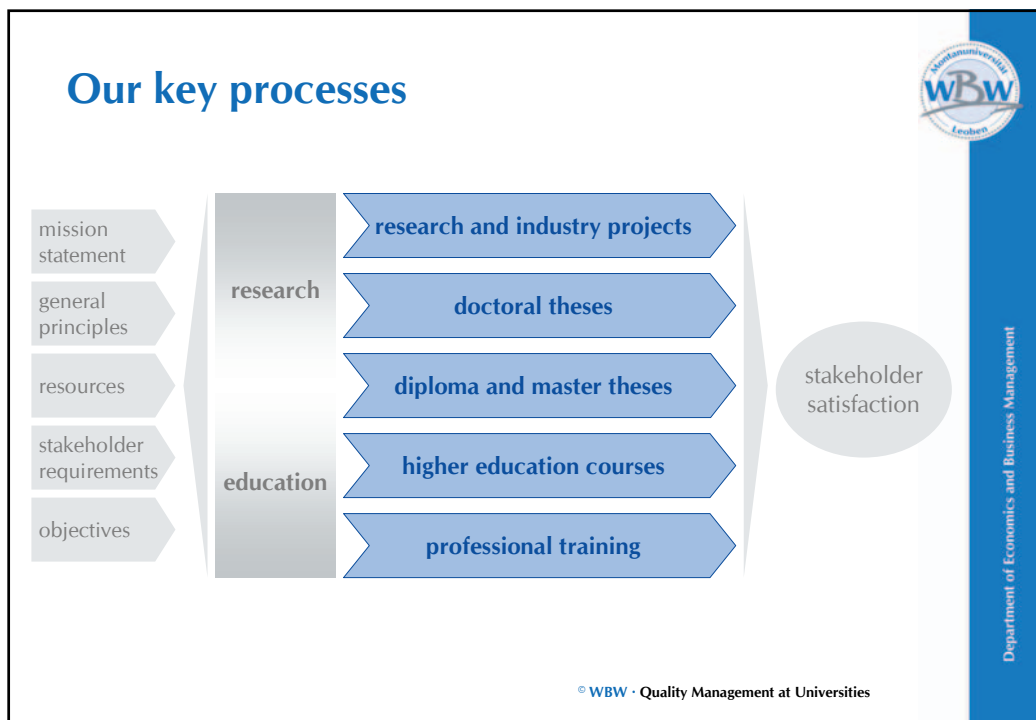
Mission statement & general principles



- **Mission statement**
 - praxis-relevant & science-driven higher and further education
 - teaching methodological and social competencies
 - creating benefit for scientific community and industry
 - orientation on quality and continuous improvement
- **General principles**
 - quality of capability: quality of people, organisational, and infrastructural conditions
 - quality of process : constitution and performance of education and research activities
 - quality of result: benefit for customers, value added
⇒ output and outcome

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Customers / stakeholders

■ Who are our customers ?

- definition of customers was a learning process
 - **double role of students: customer & "product" (providing knowledge)**
 - when concerning content of courses problematic
- Stakeholder approach
 - **service quality: students**
 - **"product quality": industry, alumni, ministry, society**

■ Steps we took

- identify and define stakeholders
- identify stakeholder requirements ⇒ surveys

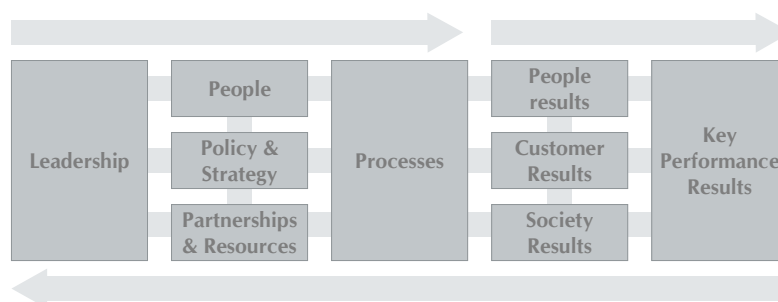
■ Stakeholder we identified

- students & alumni
- partners (industry & science)
- employees
- ministry
- society & scientific community

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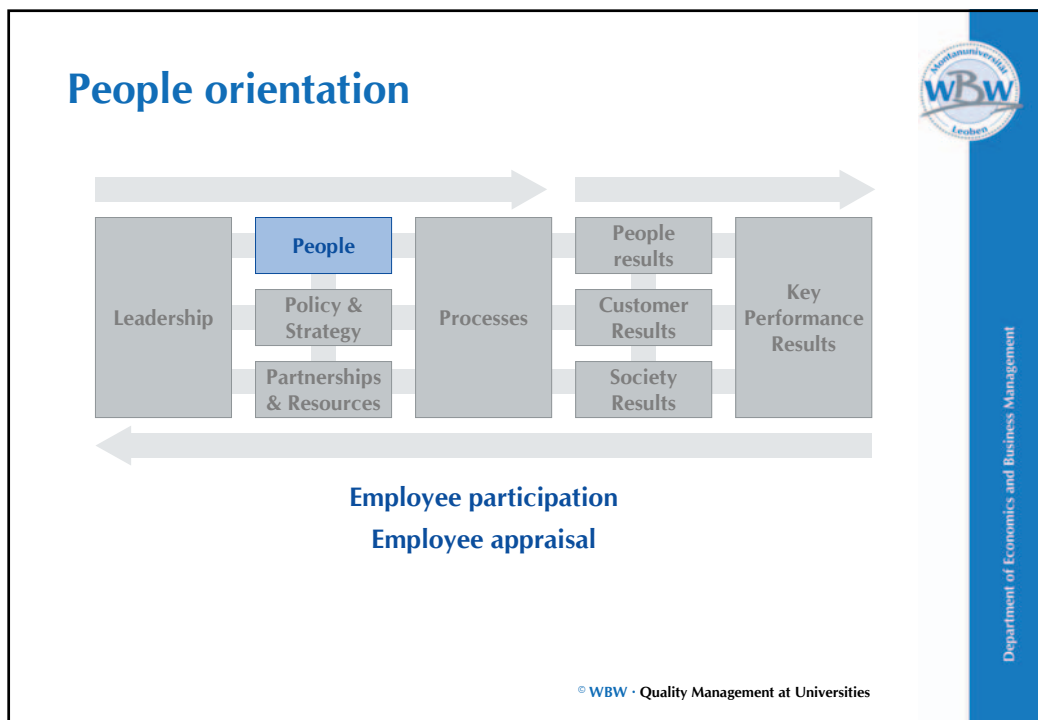
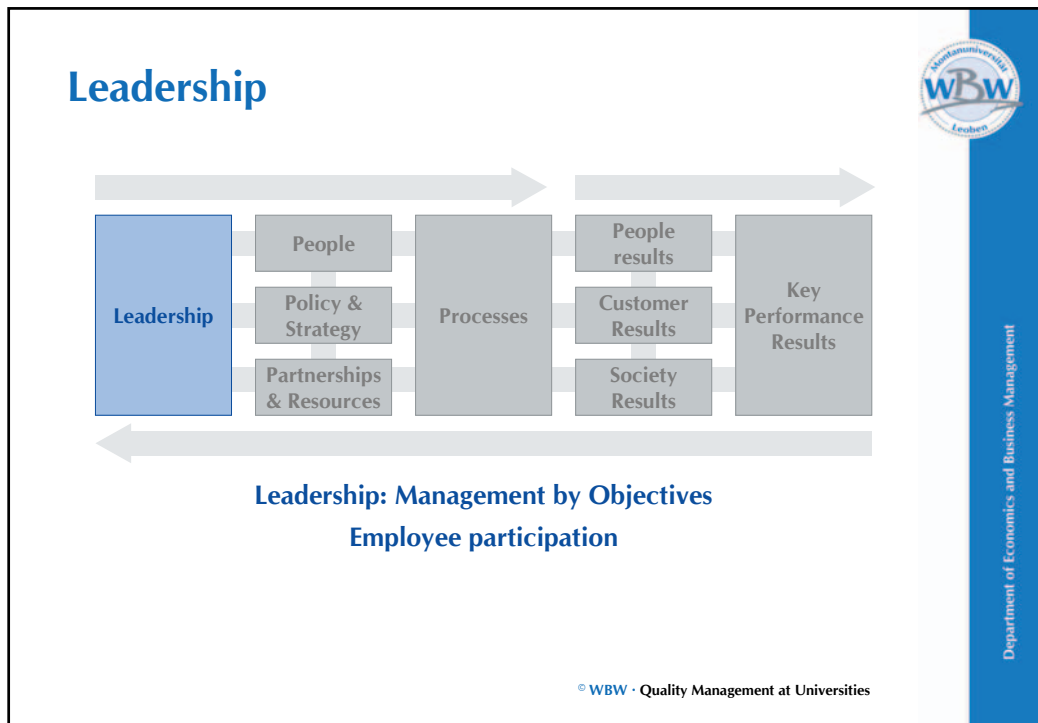


Our Quality Management System



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Communication & employee participation



■ Formal Communication

- Jour fix daily, except on Monday
- Weekly Meeting weekly
- Department Meeting monthly
- Self assessment yearly
- Strategy Meeting yearly
- Dissertation Workshop every three months
- Science Workshop yearly, for every research area
- Employee appraisals yearly

■ Participation

- defining the strategy \Rightarrow where to focus in a research area
- system for continuous improvement

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Employee appraisal



■ What is it?

- Annual meeting between head of department and every employee

■ Concept

- Systematic and journalised discussion of personal ambitions and goals
- Feedback on behaviour and achievement of objectives
- Definition of targets for every employee
 - Management by Objectives
 - deduction from department targets

■ Benefits

- Communication between employer and employee
- Feedback in order to improve
- Both know where to go to and what to expect from each other

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Policy and Strategy

Mission statement & general principles
 Science Workshops
 Strategy Meeting
 Intellectual Capital Report

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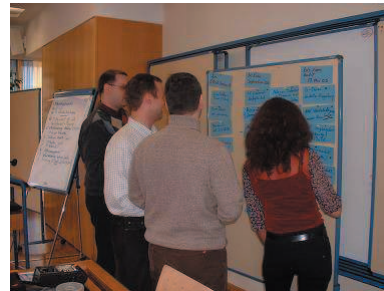
Science Workshops

- **What is it?**
 - Overview of state-of-the-art of science for every research area
 - Participation of all scientific staff
- **Structure of the presentations**
 - Quantitative analysis: quantitative development of several topics within a research area, ⇒ frequency of publications
 - Discussion of relevant sources of information
 - relevant journals and databases
 - importance of journals
 - Discussion of relevant and representative articles
 - Benchmarking: comparison with other research institutions
 - Problems or topics for future investigations
- **Benefit**
 - Systematic identification of topics for future investigations by identifying gaps in actual research

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Strategy Meeting – Finding our strategy

- **Annual Strategy Meeting**
 - One week in a conference hotel
 - Participation: all administrative and scientific staff
- **Agenda of the meeting**
 - Definition of mission statement and general principles
 - **Self assessment**
 - **Benchmarking:** analysis of the situation compared with other research institutions
 - Discussion & analysis of customer and employee **satisfaction surveys**
 - **SWOT analysis**
 - Definition of **strategic goals** and deduction of **measures** for improvement
 - Definition of **targets** for key performance indicators



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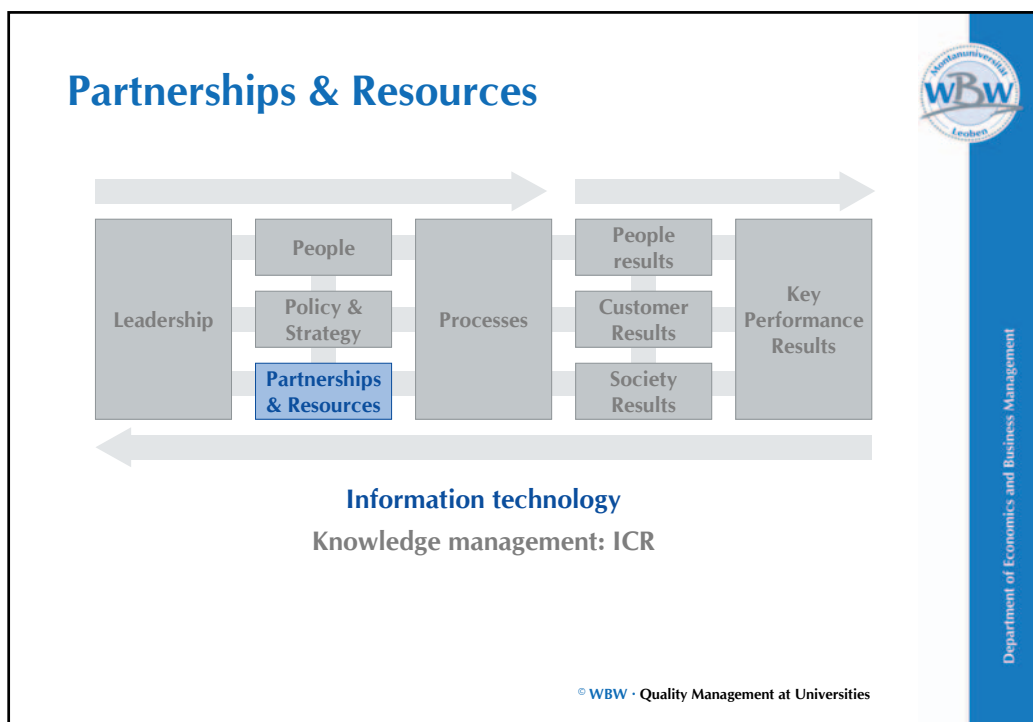
Intellectual Capital Report (ICR)

- **Intellectual Capital Report at WBW**
 - first report in 2001
 - first university department
 - measure IC by performance indicators
 - represent indicators, performance and impact on stakeholders
- **ICR: communication tool**
 - inward and outward-looking
 - transparency of knowledge creation and knowledge transfer
- **ICR: tool for controlling & strategy development**
 - support of QM by measuring performance indicators and showing trends
- **Benefits: Quality Management System – Intellectual Capital Report**
 - standardised routines help to build a structured process for ICR
 - ICR integrated in QMS
 - Discussion and analysis of ICR at Strategy Meeting
 - Discussion and analysis of key performance indicators at Department Meeting




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Our IT system

resources example: IT




management system

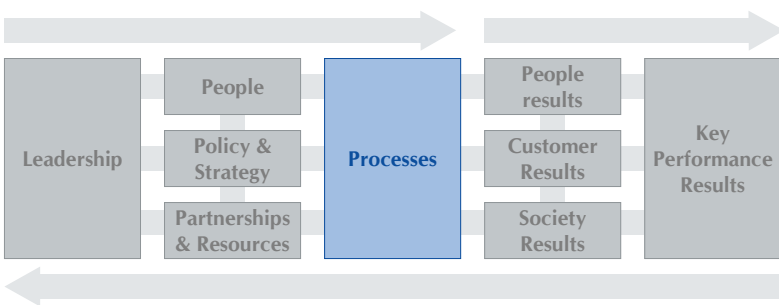
MDS <small>Lotus Notes</small>	research and industry projects	performance indicators	<ul style="list-style-type: none"> ▪ project documentation ▪ performance measures 	web page
DISS-DA <small>Lotus Notes</small>	doctoral theses		<ul style="list-style-type: none"> ▪ workflow management 	
	diploma and master theses		<ul style="list-style-type: none"> ▪ publication of theses themes ▪ workflow management ▪ grading 	
MU Online <small>online portal</small>	higher education courses	<ul style="list-style-type: none"> ▪ dates: course, exams ▪ exam results, grades ▪ course material 		
	professional training	<ul style="list-style-type: none"> ▪ dates: course, exams ▪ exam results, grades ▪ course material 		

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Processes & process management





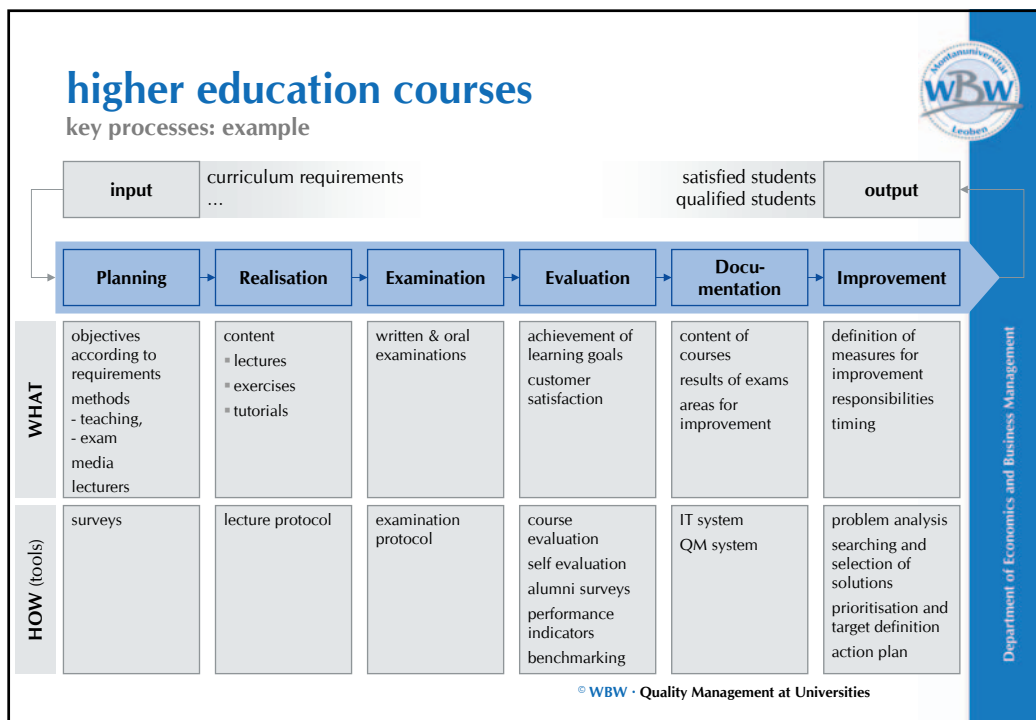
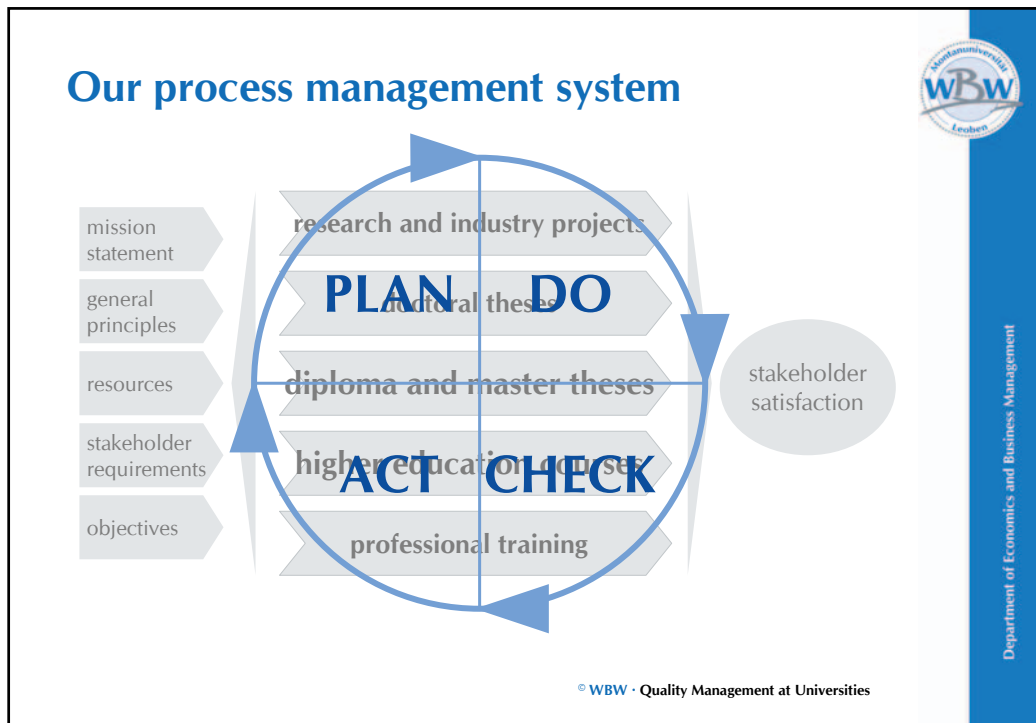
Key processes and process map

Process management & process documentation

Continuous improvement

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Continuous improvement



- **What does it mean ?**
 - systematic approach for
 - looking for potential for improvement
 - generate and realise improvements
 - integration of several instruments
- **Input information & instruments**
 - audits (ISO 9001) and self assessment (EFQM)
 - evaluation and accreditation
 - satisfaction surveys
 - evaluation of courses, theses, projects
 - benchmarking
 - Ideefix (suggestion system)
- **How do we proceed ?**
 - identify and analyse areas for improvement
 - search for solutions and realise them
 - define responsibilities
 - at departmental level: Department Meeting and Strategy Meeting
 - at teaching level: at the end of semester, definition of responsibilities at Department Meeting

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Ideefix: our suggestion system

continuous improvement tools: example 1




- **Suggestion input: two ways**
 - mailbox at the department
 - online via internet homepage
- **Further treatment**
 - responsible: Quality Manager
 - defined and IT supported workflow
 - mail of advice
 - status of suggestion / measures
 - discussion at Department Meeting
 - ⇒ fixed agenda item
 - definition of measures for improvement



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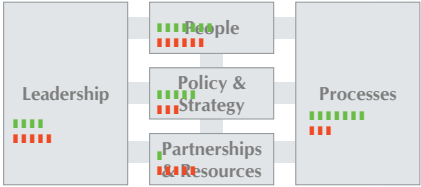
Self assessment

continuous improvement tools: example 2



- **Enablers**
 - Self assessment at our yearly Strategy Meeting
 - Every employee fills out a form with min. 3 strengths & 3 weaknesses
 - SWOT analysis

- **Results**
 - Assessment of performance indicators for
 - employee satisfaction & semantic test
 - customer satisfaction
 - intellectual capital: human, structural, relational
 - Assessment interval
 - every three months at the Department Meeting
 - annually in the Intellectual Capital Report, discussion at Strategy Meeting




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QM documentation

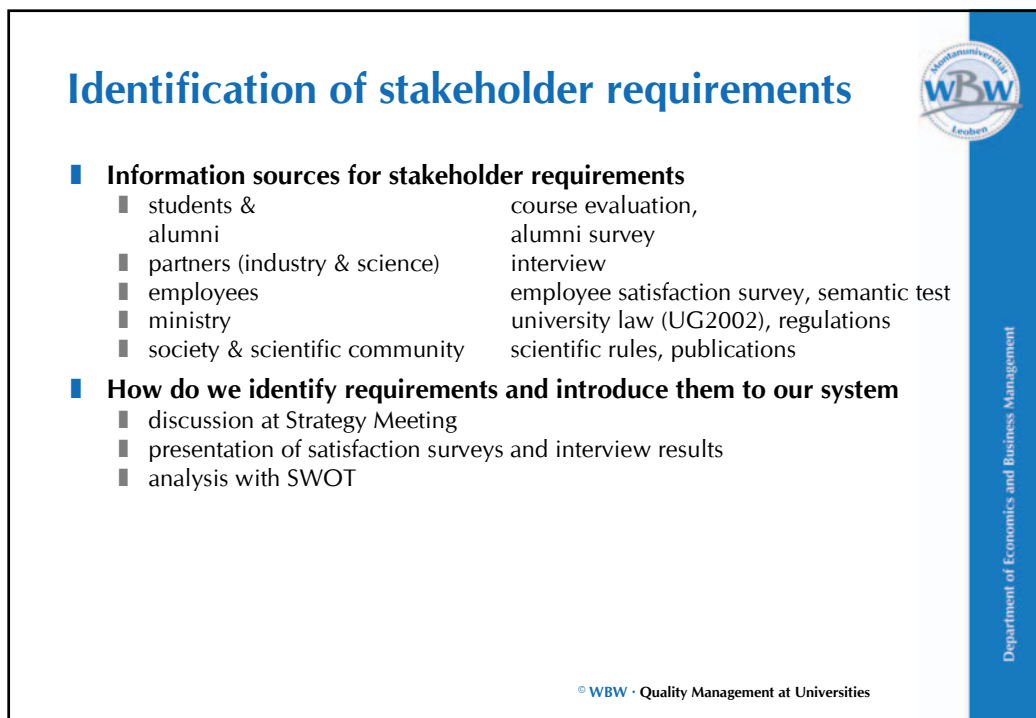
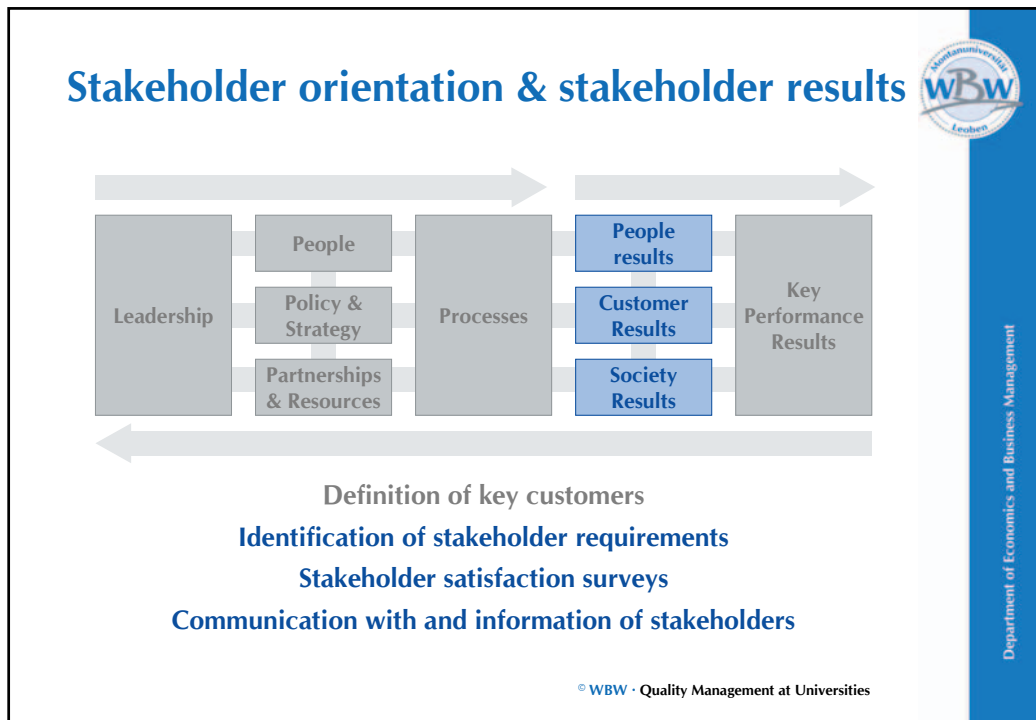
integration of process documentation into QM documentation

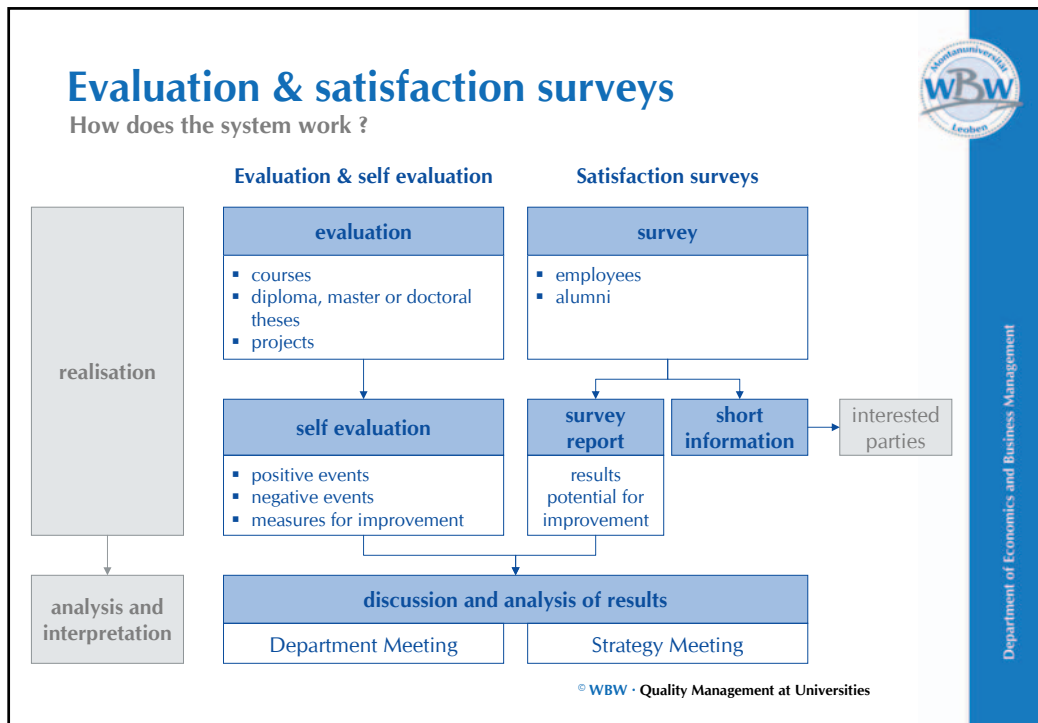


mission statement general principles	<ul style="list-style-type: none"> ▪ mission of the department ▪ values
management handbook	<ul style="list-style-type: none"> ▪ description of the management system ▪ responsibilities ▪ stakeholder and information sources ▪ performance indicators
process instructions	for every key process <ul style="list-style-type: none"> ▪ diploma theses, doctoral theses ▪ projects ▪ higher education and further education/training courses
work instructions guidelines	<ul style="list-style-type: none"> ▪ for administrative activities ▪ documentation of performance indicators ▪ activities related with IT ▪ guidelines for diploma theses and scientific papers
forms	<ul style="list-style-type: none"> ▪ audits ▪ evaluations ▪ administrative forms like: travel expense accounting etc. ▪ format templates

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Employee satisfaction

satisfaction surveys: examples 1 & 2 (employees)

- **Semantics test**
 - How do you evaluate the working atmosphere?
 - Evaluation on a multidimensional antonym scale
 - Characterisation of working atmosphere by reference points like effort, fear, holidays ...
- **Employee satisfaction survey**
 - Infrastructure
 - Social environment
 - Communication & information
 - Leadership of superior
 - Personal development & formation
- **Both methods allow anonymous measurement of employee satisfaction**
- **Discussion and reflection of results at Strategy Meeting**

14 Profile ausgewertet Nächster Referenzpunkt: Spaß

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Wirtschaftsuniversität
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Alumni survey

satisfaction surveys: examples 3 (alumni)

- **What is it ?**
 - every 2 years
 - alumni who have graduated 2-5 years ago
 - aim: more objective evaluation of course lastingness and relevance for practice
- **Focus of the survey**
 - practical usefulness of content of courses
 - satisfaction with offered courses
 - suggestions for improvements
- **Benefits: information about ...**
 - satisfaction of courses
 - quality level of courses
 - practical suggestions for improvements
 - input for course development and improvement

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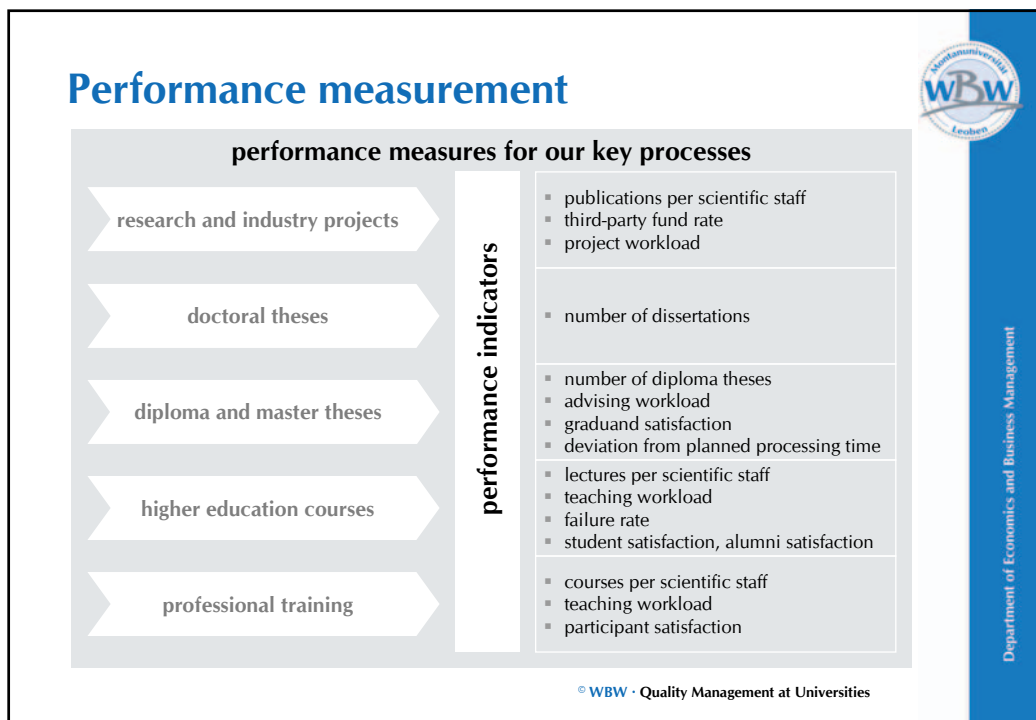
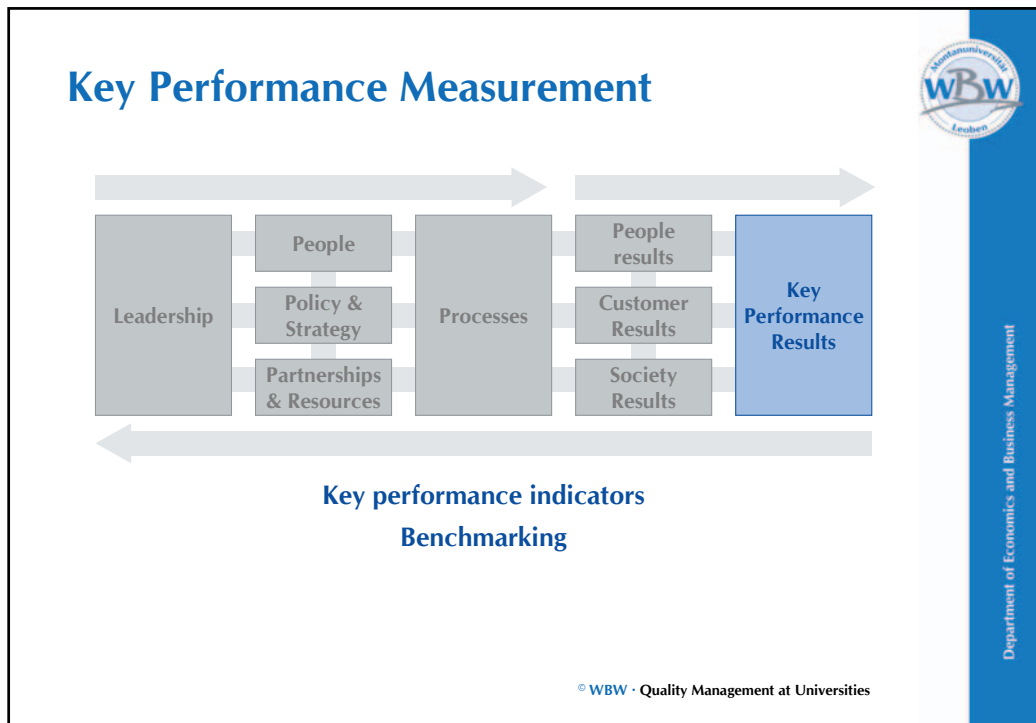
Communication and Information

communication with our stakeholders

- **External communication**
 - Homepage
 - **WBW-Inform** ⇒ interested parties (partner, alumni, ...)
 - information about our actual activities in teaching and research
 - short project reports
 - twice a year
 - **Conferences** ⇒ industry and science
 - Total Productive Maintenance (since 20 years)
 - Sustainability Management for Industries (first in 2004)
 - **Publications** ⇒ scientific community
 - articles in national and international journals
 - books
 - **Intellectual Capital Report** ⇒ ministry, interested parties

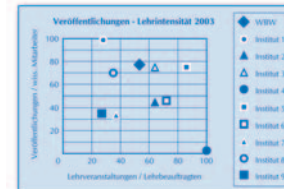
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Benchmarking (BM)

- **Benchmarking study**
 - yearly study, made by the BM responsible
 - method: data selection via internet homepages
 - Strategy Meeting
 - presentation of BM report
 - discussion of results and deduction of measures
 - since 2001 ⇒ trends available
- **Benchmarking objects: performance indicators**
 - publication per scientific staff
 - diploma theses per scientific staff
 - teaching hours per scientific staff
 - projects per scientific staff
 - doctoral theses
- **Benchmarking partner**
 - 9 similar structured university institutes or chairs for business management in Austria, Germany and Switzerland
- **Benefit**
 - comparison of performance: identification of position and potential for improvement
 - information about main research areas:
 - trends
 - gaps: potential research areas for us

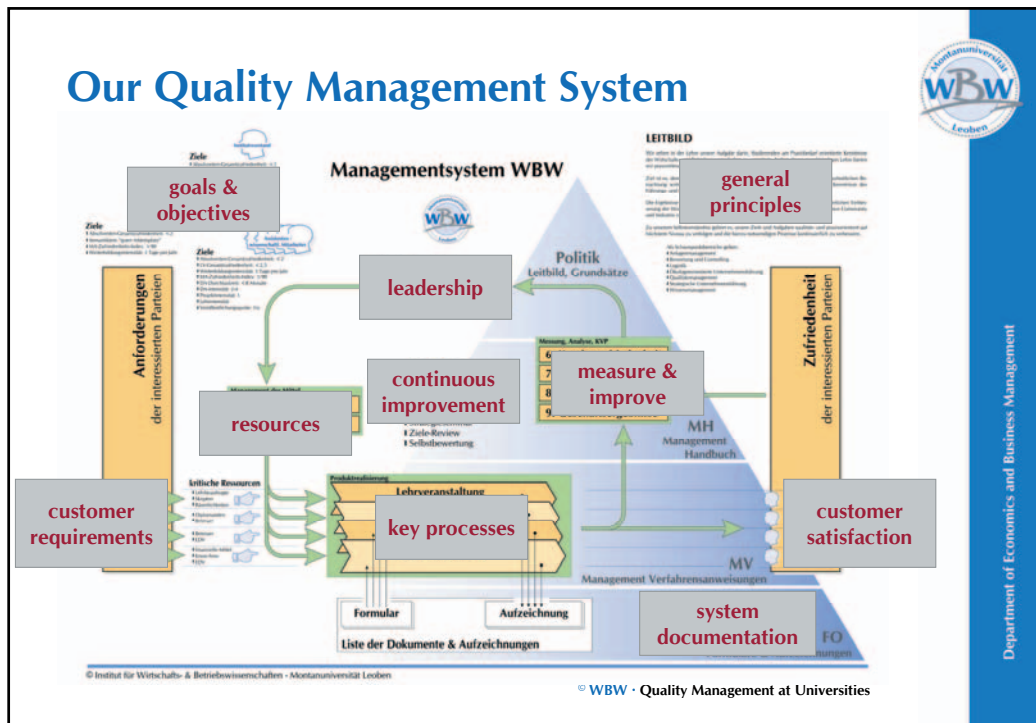


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Conclusions





- ## Conclusions
- **Doesn't that look like plenty of work ?**
 - establishment of the QMS took time and effort
 - through process documentation and standardisation we could reduce a lot of daily work
 - coordination
 - looking for a responsible
 - thinking about how to do a job
 - more effective and more efficient
 - **Benefits from our QMS**
 - systematic integration of stakeholder requirements
 - process documentation
 - easy and fast initial training of new employees
 - consistent manner of realisation of processes like educational courses
 - management with performance indicators
 - high transparency for employees and stakeholders
 - achievement of targets gets measurable
 - external audits and evaluations
 - help to look at the QMS from another point of view
 - forces to really implement measures for improvement
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