

BASICS OF PROJECT MANAGEMENT

2016.03.07.

BME/BUTE – Faculty of Architecture
Department of construction technology
and management

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Building Project Management

0

Subject codes

BMEEPEKT601: theory 2 credits OR

BMEEPEKK601: theory + practice 4 credits

BMEEPEKK602: practice 2 credits (only together with T601)

Lecturers

Adrienn Lepel PhD

István Vidovszky PhD

Guest lecturers

Requirements

Two mid-semester tests (30-30 min.) 16.03.2016 and 11.05.2016

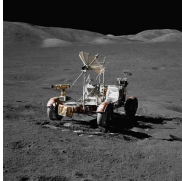
Exam

Semester Project (only for 2+2 or 4 credit courses)

semester information

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| table of contents | <ol style="list-style-type: none"> 1. definitions 2. history of project management 3. project management 4. tools of project management 5. construction management |
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| | | |
|--------------------|---|---|
| 2 | PROJECT | |
| definitions | <p><i>Single, complex, unique task, that is limited in costs and time, and has predefined goals, and assigned sources.</i></p> <p><i>E.g. research projects, military projects, etc.</i></p> |  |
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2 PROJECT

The work of organisations



operation **project**

performed by people

has limited resources

planned - executed - controlled

ongoing **unique**
repetative **temporary**

definitions

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2 PROJECT MANAGEMENT

Project management is the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations form a project.



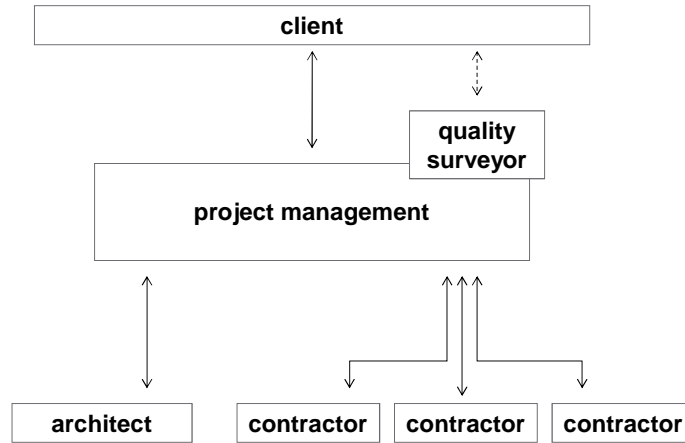
PROJECT MANAGEMENT

definitions

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2 PROJECT MANAGEMENT

definitions



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2 PROJECT MANAGEMENT

definitions



PMO = Project Management Office

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2 PROJECT MANAGEMENT

What is the role of a project manager ?

BOSS?

LEADER?

...COORDINATOR?

definitions

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3 BRIEF HISTORY OF PROJECT MANAGEMENT

1941 the first PM documentation: **Manhattan Engineering District Project**

1956 the first PM documentation and handbook: **C/SCSC (Cost/Schedule Control System Criteria) – US Air Force AFSCM375 (Air Force System Command Manual)**

1958 the first PM planning method: **US-Navy PERT (Program Evaluation and Review Technique) – part of the Polaris Missile Program**

1959 Paul Gaddis uses the expression „project manager” in the Harvard Business Review

history of project management

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BRIEF HISTORY OF PROJECT MANAGEMENT

1960-s civil building and oil industry began to use the PM methods of the US-Air Force, US-Navy and NASA PM



new independent discipline in universities and business schools

1965 formation of IPMA (International Project Management Association)

1981 APM (Association of Project Management) - publication of the „Body of Knowledge” PM system

1985 PMI - publication of the „Guide to the Project Management Body of Knowledge”

IPMA – publication of the „International Competence Baseline”

history of project management

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PROJECT MANAGEMENT SYSTEMS**Systems and standards for PM**

1. **PMBOK** Guide by PMI (Project Management Institute)
2. books of the **FIDIC** (Fédération internationale des ingénieurs-conseils = International Federation of Consulting Engineers)
3. **ISO** standards



project management

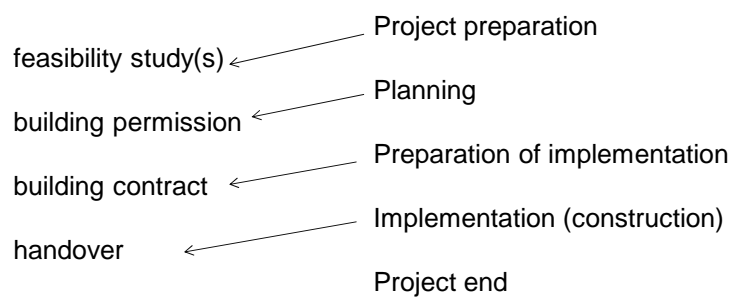
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4 PROJECT MANAGEMENT - PROJECT PHASES

project management

How to divide up the project into phases?

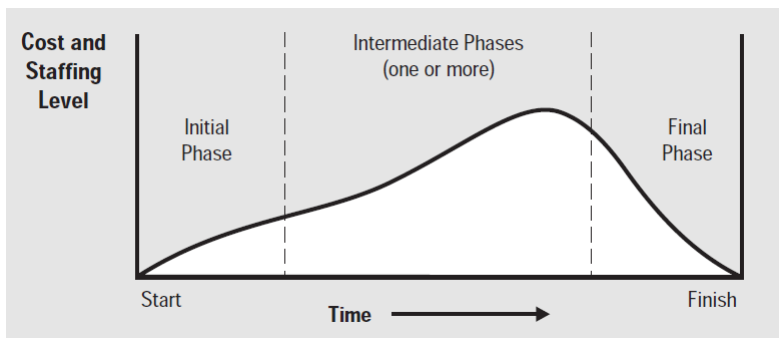
marking points – **milestones** - when an output (deliverable) is completed



4 PROJECT MANAGEMENT - PROJECT PHASES

project management

Life-cycle of the project



4 PROJECT MANAGEMENT - PROCESSES OF THE PROJECT

project management

Process is a series of actions bringing out a result.

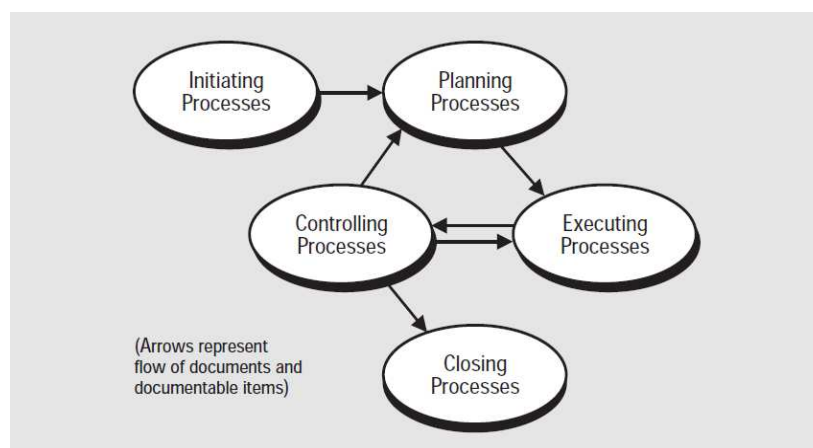
1. project management processes
 - initiating processes
 - planning processes
 - executing processes
 - controlling processes
 - closing processes
2. product-oriented processes

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4 PROJECT MANAGEMENT - PROJECT PROCESSES

project management

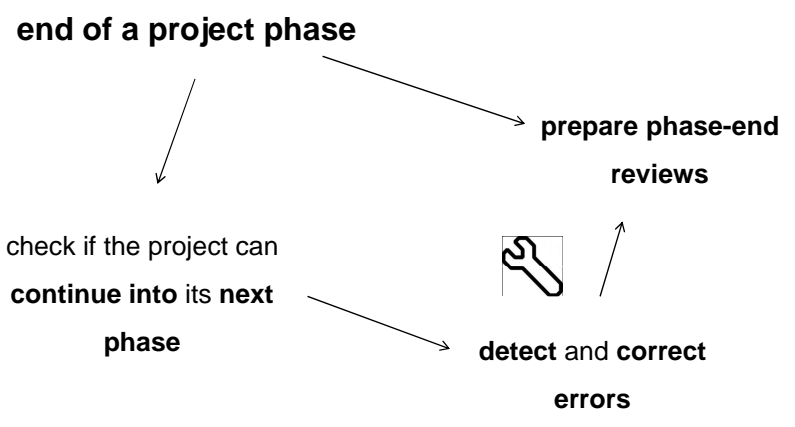
Links about process groups in a phase



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4 PROJECT MANAGEMENT - PROJECT PHASES

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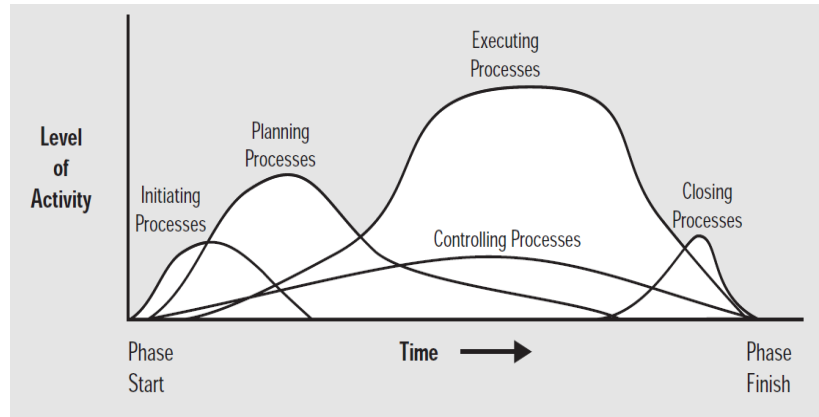


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4 PROJECT MANAGEMENT - PROJECT PROCESSES

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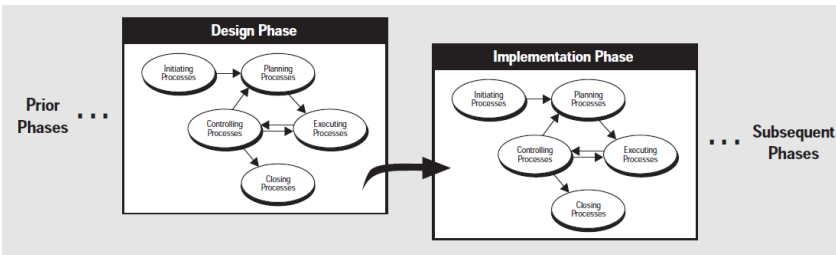
Overlap of process groups in phase



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4 PROJECT MANAGEMENT - PROJECT PROCESSES

Processes and phases - sequencing



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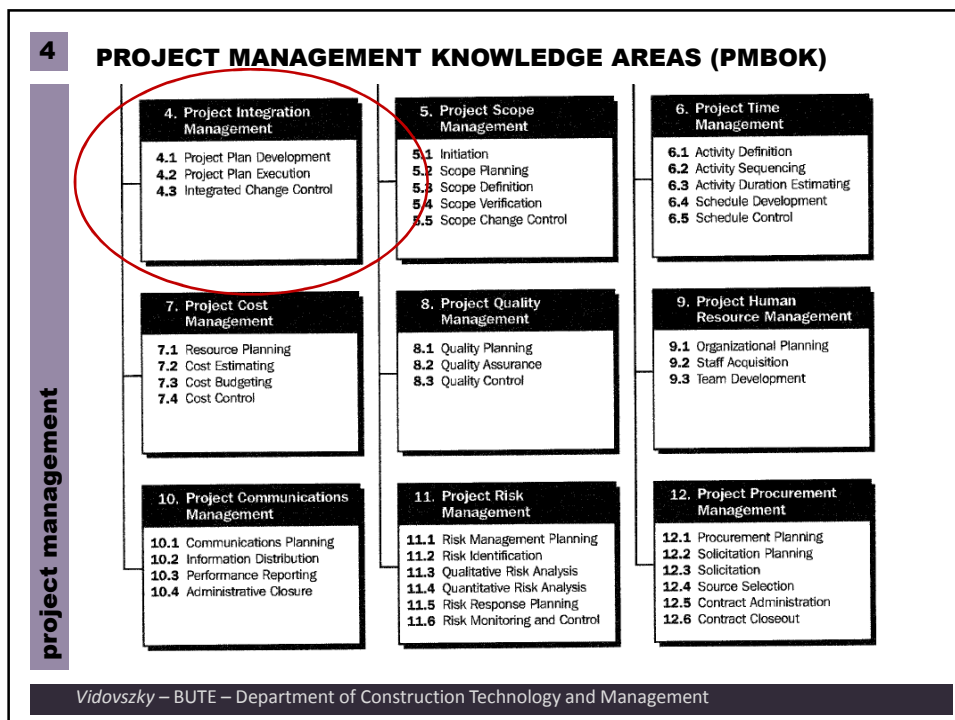
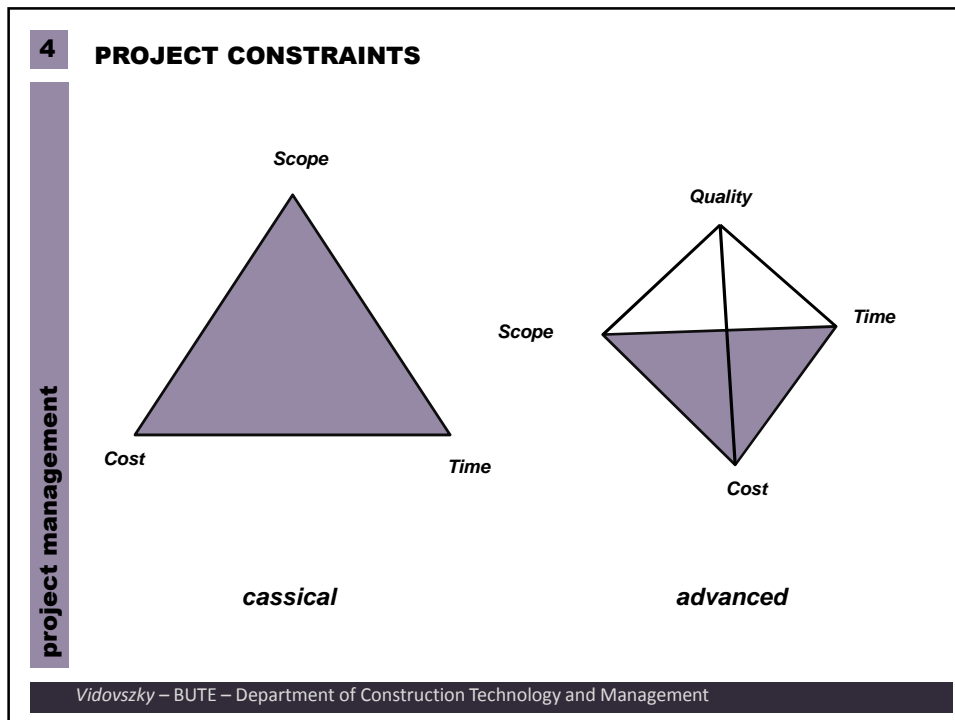
4 PROJECT MANAGEMENT - PROJECT STAKEHOLDERS

Individuals or organisations directly or indirectly involved in the project.

Key stakeholders:

- project manager
- customers/users
- sponsors, clients
- performing organizations

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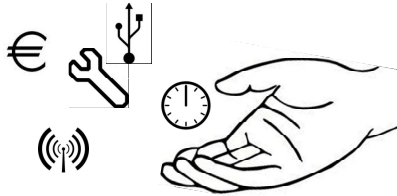


2 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

project management

1. Project integration management

- ensures the coordination of the various project elements
- consists of
 - project plan development
 - project plan execution
 - overall change control



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2 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

project management

Project integration management

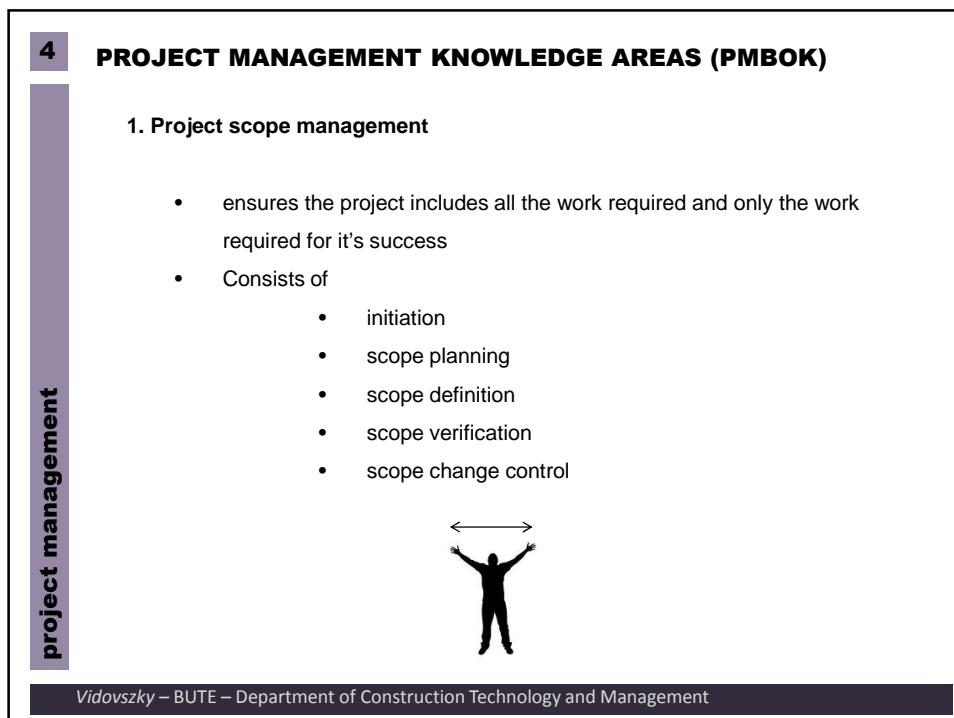
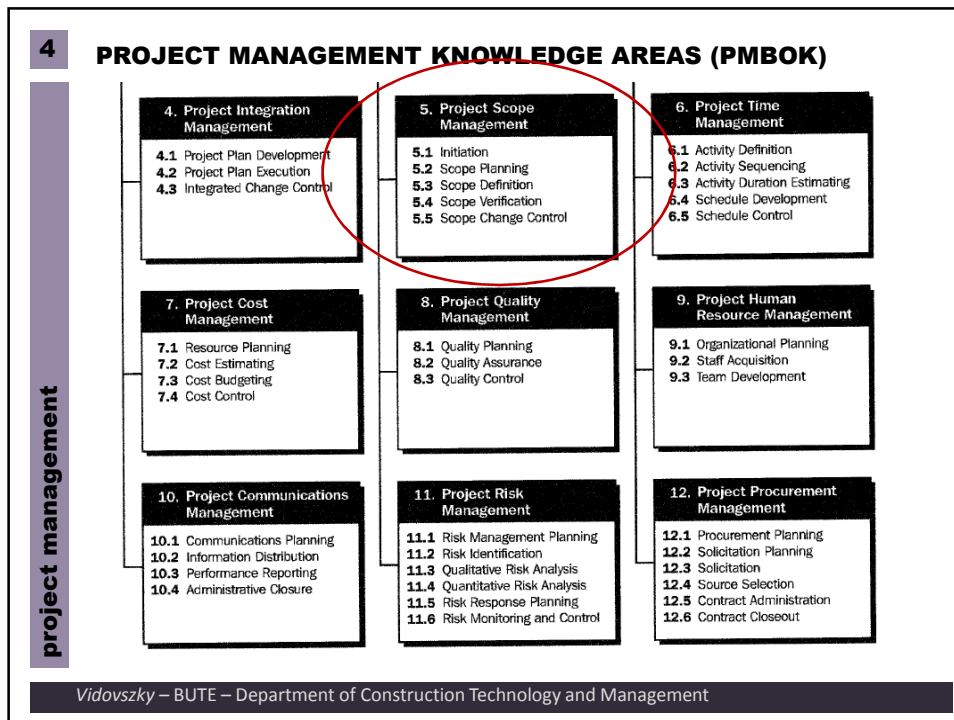
- product description
- strategic plan
- project selection criteria
- historic background

project selection
methods

 An arrow pointing from the 'project selection criteria' list to the 'project manager, constraints, and assumptions' list.

- project manager
- constraints
- assumptions

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4 PROJECT MANAGEMENT - START UP ASSUMPTIONS

project management

Start a project only if

- + anyone is interested
- + there is a necessity
- + it is worth to do
- + it is implementable / viable

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4 PROJECT MANAGEMENT - START UP ASSUMPTIONS

project management

Secondary questions:

- For whom?
- What?
- Where?
- What kind?
- With whom?
- How?

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4 PROJECT MANAGEMENT - START UP ASSUMPTIONS

project management

Tools and techniques:

- **product analyses**
- **cost/benefit analysis**
- **alternatives identification**

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4 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

project management

| | | |
|--|---|--|
| <p>4. Project Integration Management</p> <p>4.1 Project Plan Development 4.2 Project Plan Execution 4.3 Integrated Change Control</p> | <p>5. Project Scope Management</p> <p>5.1 Initiation 5.2 Scope Planning 5.3 Scope Definition 5.4 Scope Verification 5.5 Scope Change Control</p> | <p>6. Project Time Management</p> <p>6.1 Activity Definition 6.2 Activity Sequencing 6.3 Activity Duration Estimating 6.4 Schedule Development 6.5 Schedule Control</p> |
| <p>7. Project Cost Management</p> <p>7.1 Resource Planning 7.2 Cost Estimating 7.3 Cost Budgeting 7.4 Cost Control</p> | <p>8. Project Quality Management</p> <p>8.1 Quality Planning 8.2 Quality Assurance 8.3 Quality Control</p> | <p>9. Project Human Resource Management</p> <p>9.1 Organizational Planning 9.2 Staff Acquisition 9.3 Team Development</p> |
| <p>10. Project Communications Management</p> <p>10.1 Communications Planning 10.2 Information Distribution 10.3 Performance Reporting 10.4 Administrative Closure</p> | <p>11. Project Risk Management</p> <p>11.1 Risk Management Planning 11.2 Risk Identification 11.3 Qualitative Risk Analysis 11.4 Quantitative Risk Analysis 11.5 Risk Response Planning 11.6 Risk Monitoring and Control</p> | <p>12. Project Procurement Management</p> <p>12.1 Procurement Planning 12.2 Solicitation Planning 12.3 Solicitation 12.4 Source Selection 12.5 Contract Administration 12.6 Contract Closeout</p> |

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4 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

project management

1. Project time management

- ensures proper time management + finish until deadline
- consists of
 - activity definition
 - activity duration estimating
 - activity sequencing (time sequence)
 - schedule development
 - schedule control

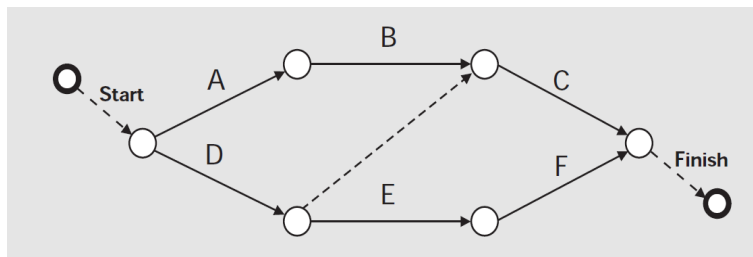


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4 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

project management

Project time management



CPM

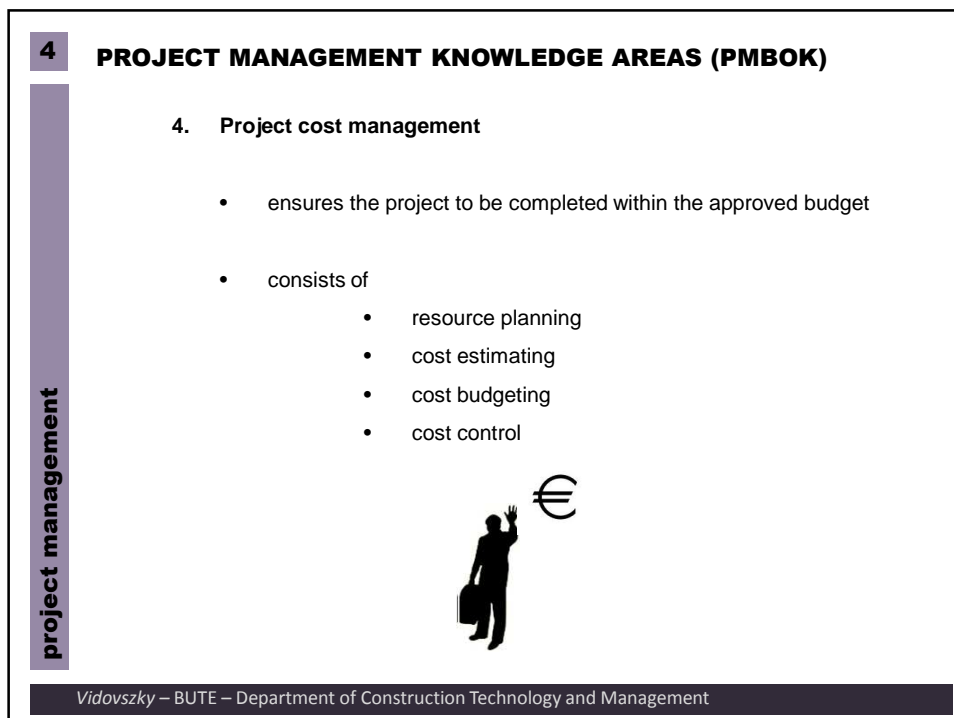
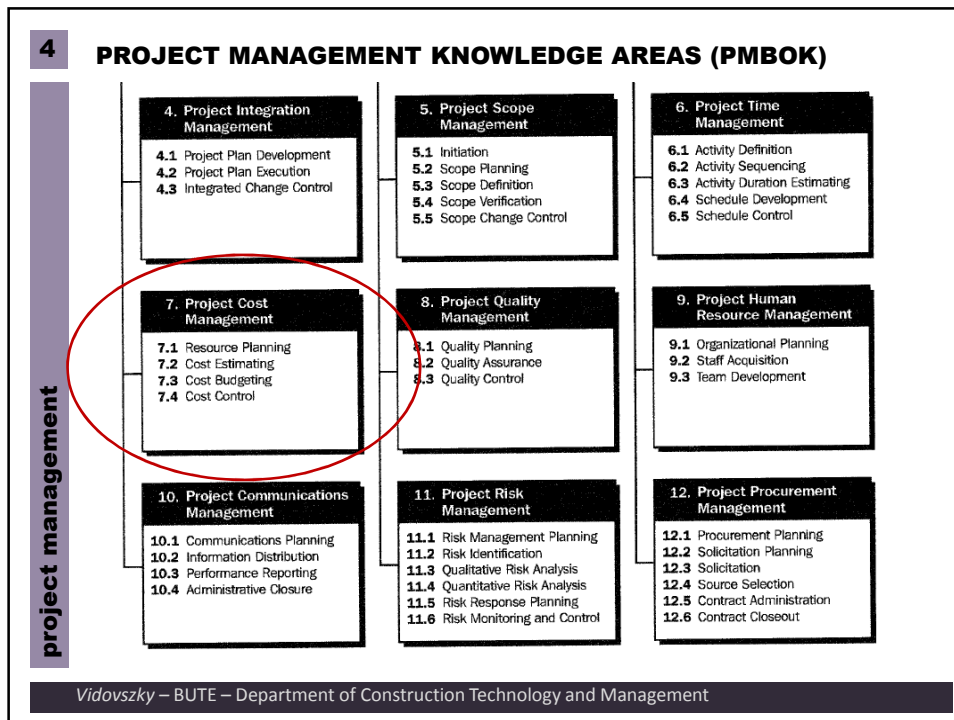
Gantt-chart

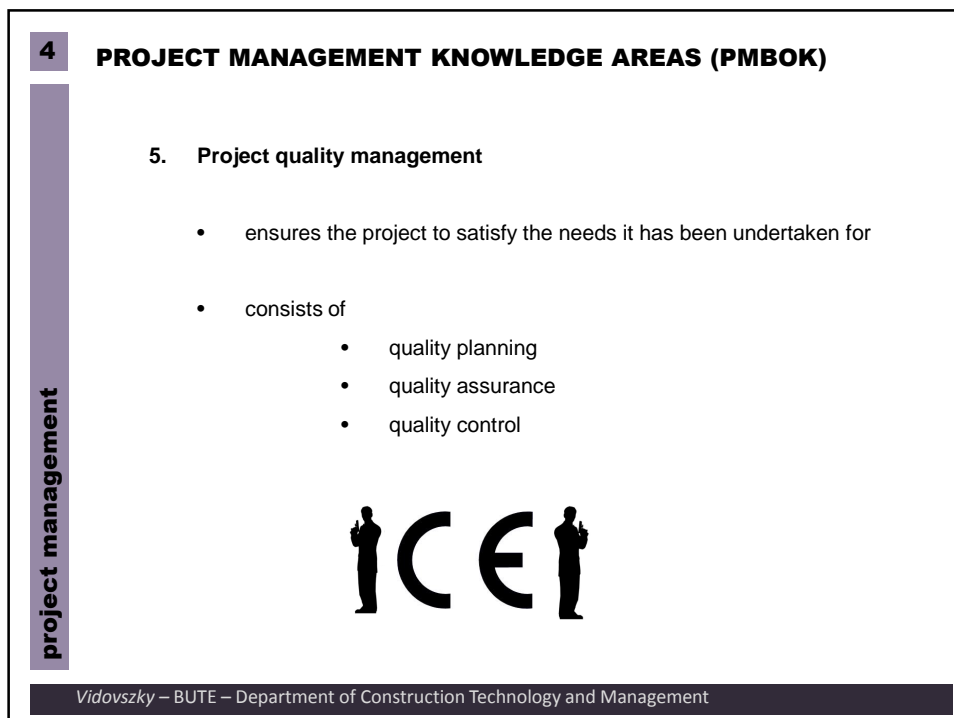
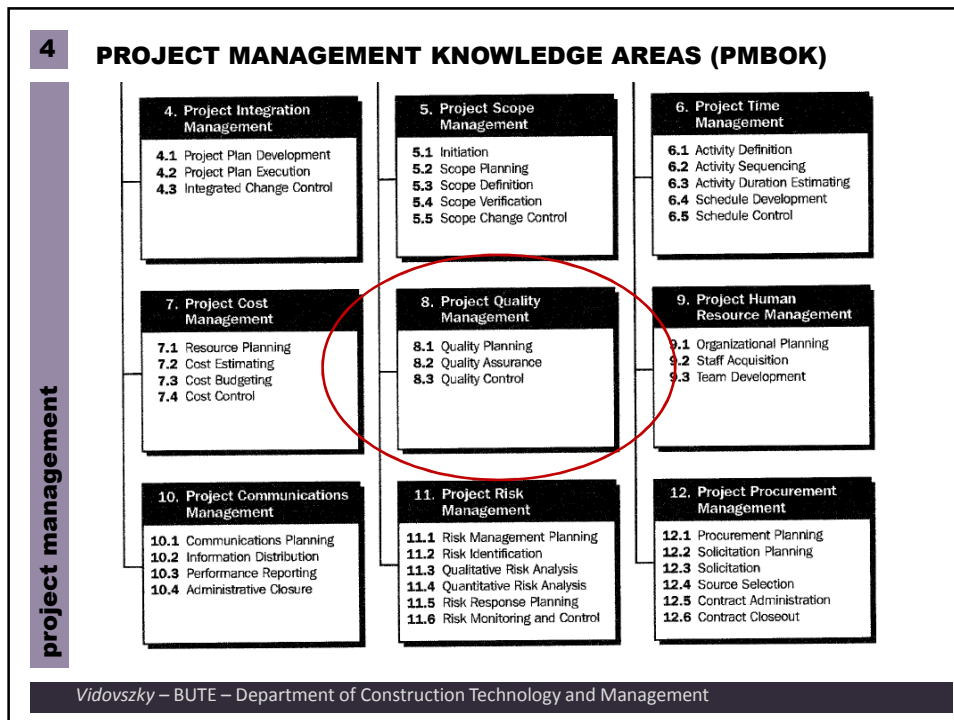
ProJack Director

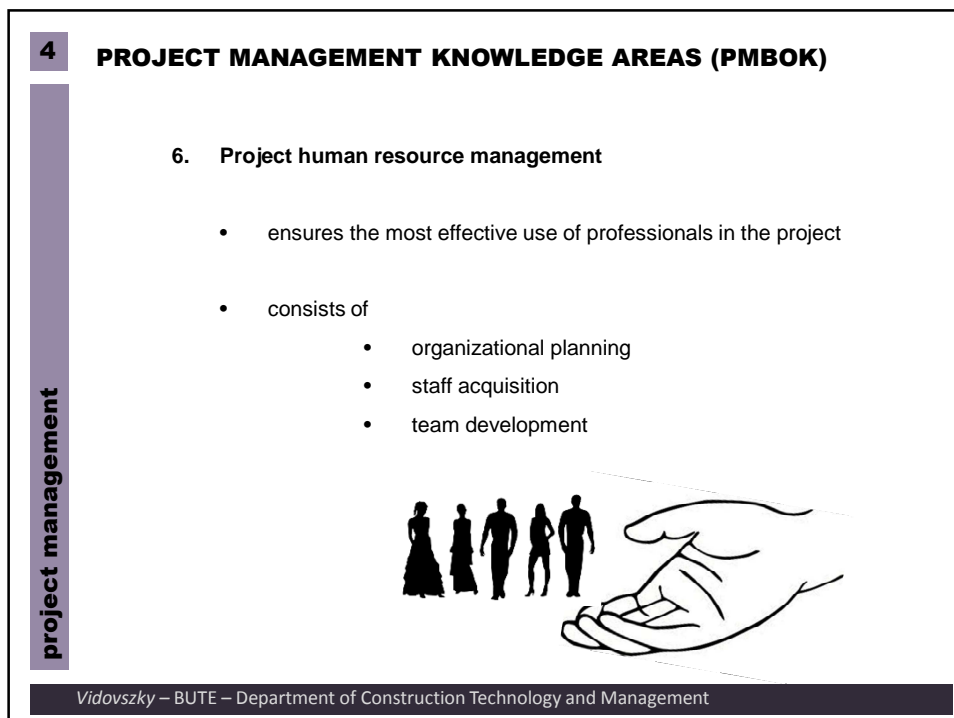
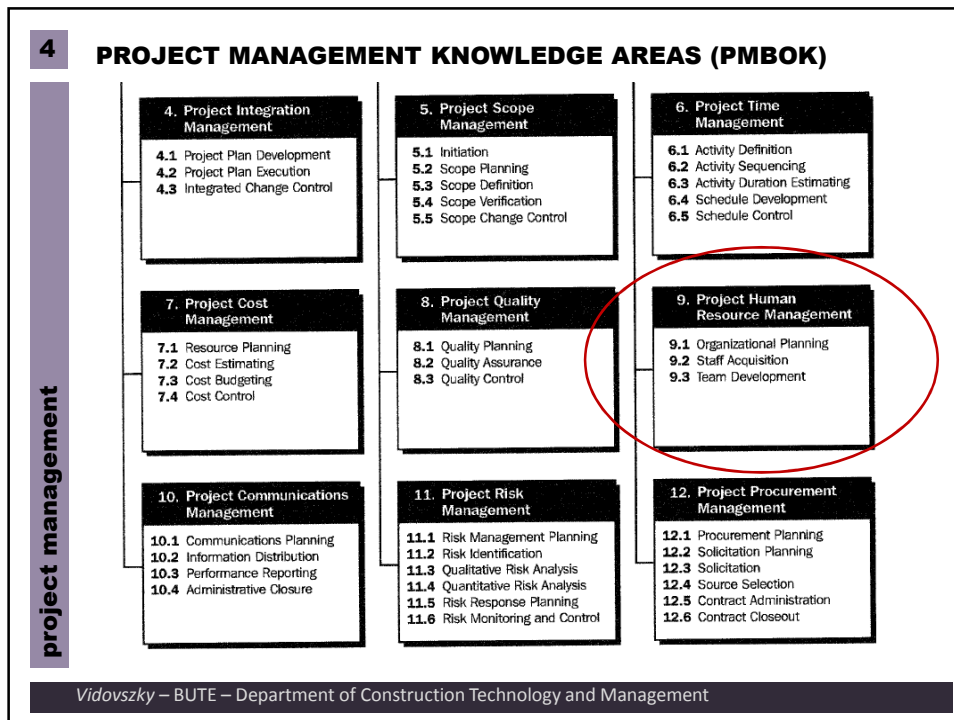
MPM

MS Project

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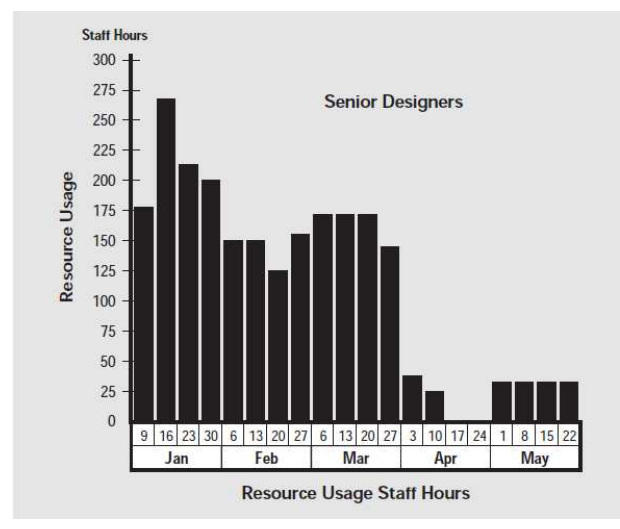




4 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

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Resource diagram



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4 PROJECT MANAGEMENT KNOWLEDGE AREAS (PMBOK)

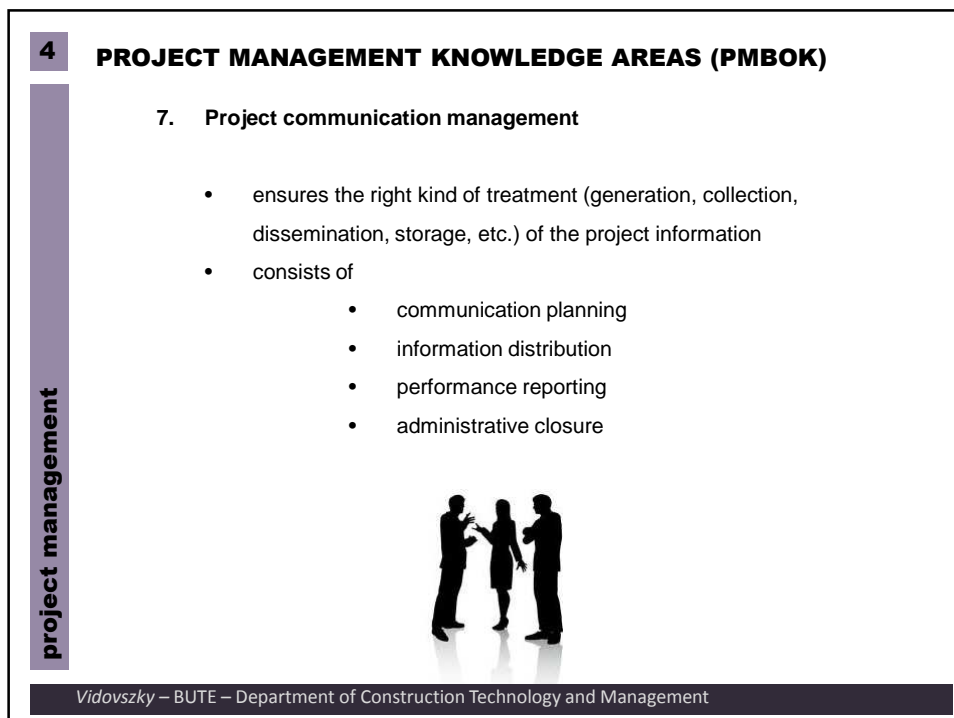
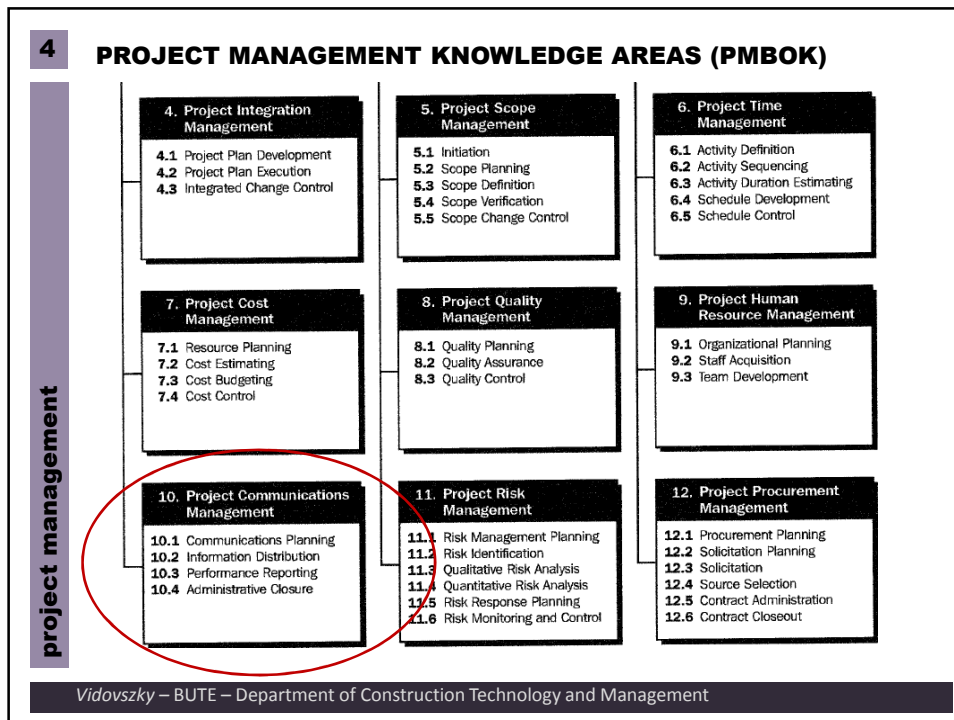
project management

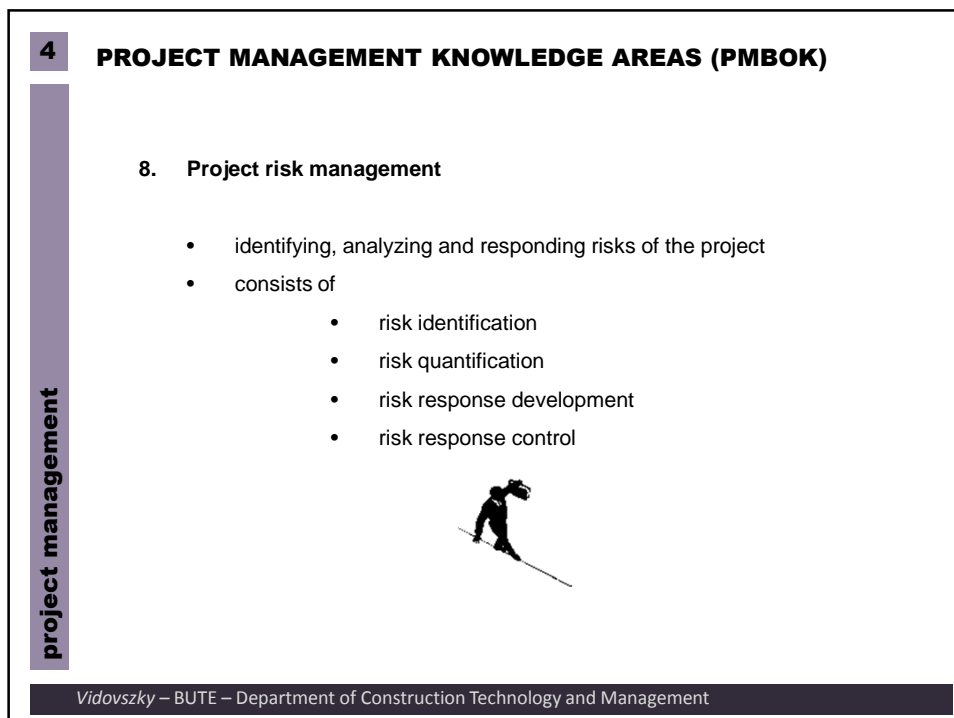
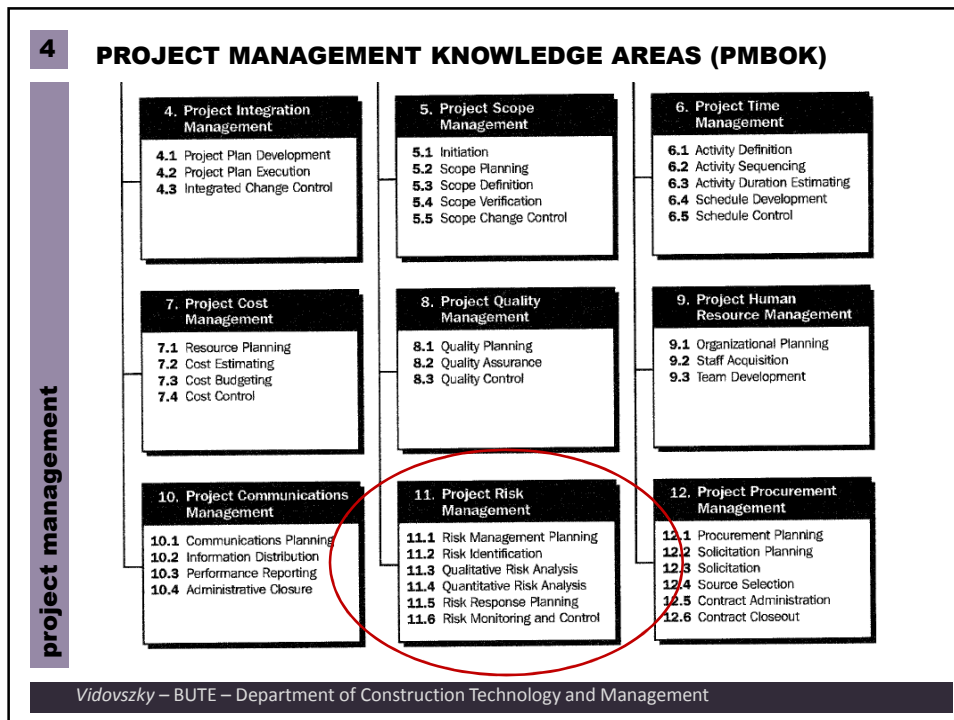
Responsibility/assignment matrix

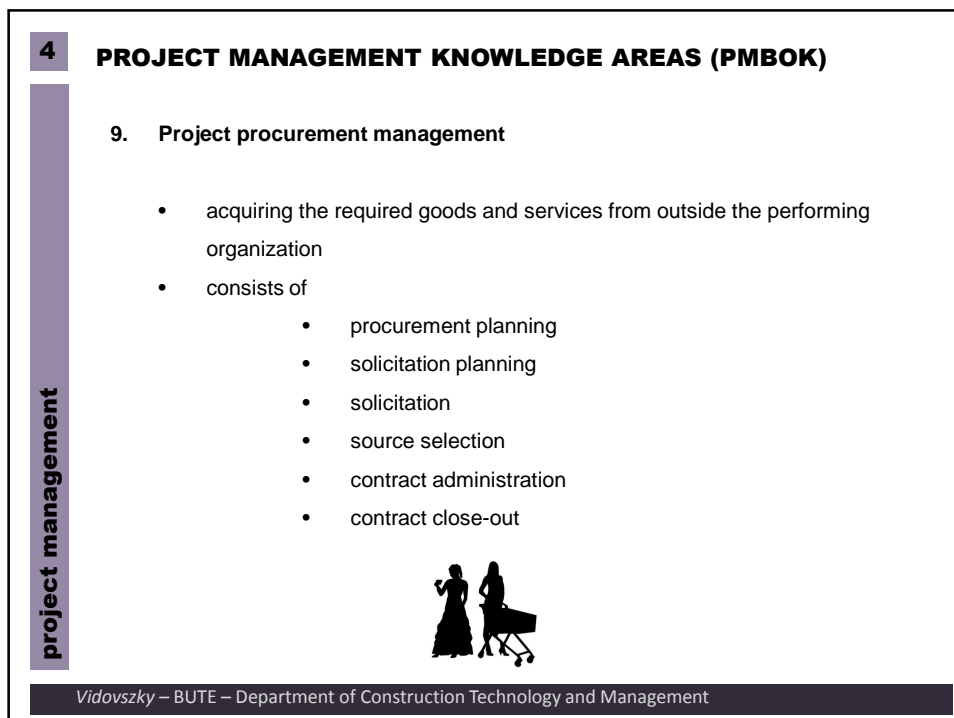
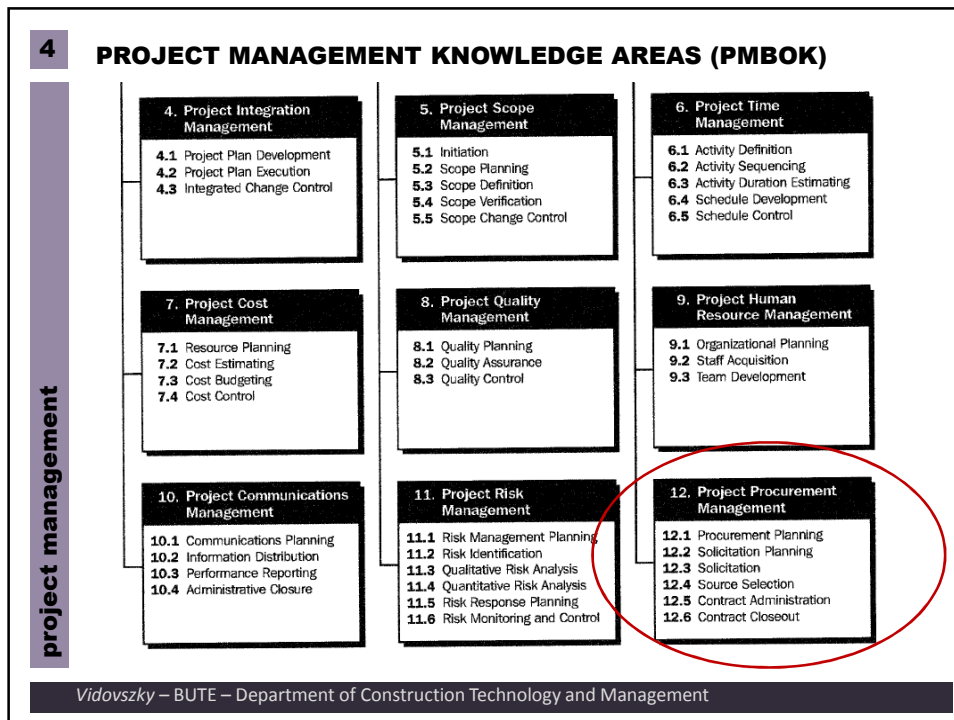
| PERSON \ PHASE | PERSON | | | | | | |
|----------------|--------|---|---|---|---|---|-----|
| | A | B | C | D | E | F | ... |
| Requirements | S | R | A | P | P | | |
| Functional | S | | A | P | | P | |
| Design | S | | R | A | I | | P |
| Development | | R | S | A | | P | P |
| Testing | | | S | P | I | A | P |

P = Participant A = Accountable R = Review required
 I = Input required S = Sign-off required

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4 PROJECT MANAGEMENT ISO STANDARDS

project management

General standards

- | | |
|----------------------------|--|
| ISO 9001:2000 | - Quality management systems - requirements |
| ISO 14001:2004 Requirement | - Environmental management systems. with guidance for use |
| OHSAS 18001:2007 systems. | - Occupational health and safety management - requirements |
| ISO/IEC 27001:2005 – Code | - Information Technology – security techniques of practice for information security system |

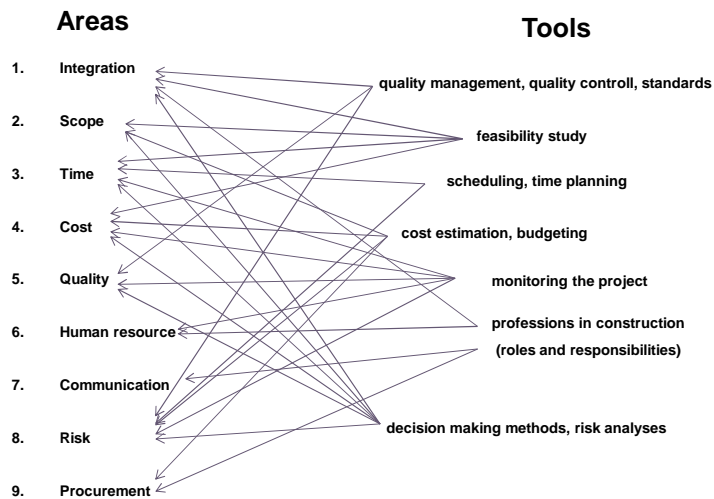
Functional standards

- | | |
|------------------------|---|
| ISO 10006:2003 quality | - Quality management systems - guidelines for management in projects |
| ISO 10015:1999 | - Quality management - guidelines for training |
| ISO 19011:2002 | - Guidelines for quality and/or environmental management systems auditing |

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5 PROJECT MANAGEMENT KNOWLEDGE AREAS AND TOOLS

tools of project management



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6 CONSTRUCTION PROJECT

construction project

- most cases single, unique, **project**-like investment
- relative high investment **costs** – from altering financial sources
- high demands on **professionals**
- predefined **quality**
- directly (e.g. cultural segment) or indirectly (e.g. industry, agriculture) satisfies social **claims**
- aiming a well functioning building with low operation cost

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S REFERENCES

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- Duncan, W. R.: A Guide to the Project Management Body of Knowledge (PMBOK Guide).* PMI, Sylva-NC, 1996.
- Rostás Z.: *Beruházástervezés és menedzsment - Építési projekt menedzsment (presentation)*
- Horváth Gy.: *Az építési beruházások projektmenedzsmentje (presentation)*
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- Sources of figures:
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