



xin chao!

Lecture: Modern Project Management in ICT

Prof. Dr. Harald Wehnes



Agenda

1.1 The Lecture: Objectives and organisation

1.2 Team Building

1.3 Business plan

1.4 „Moonshot Thinking“ by Google

- Huge problems to solve

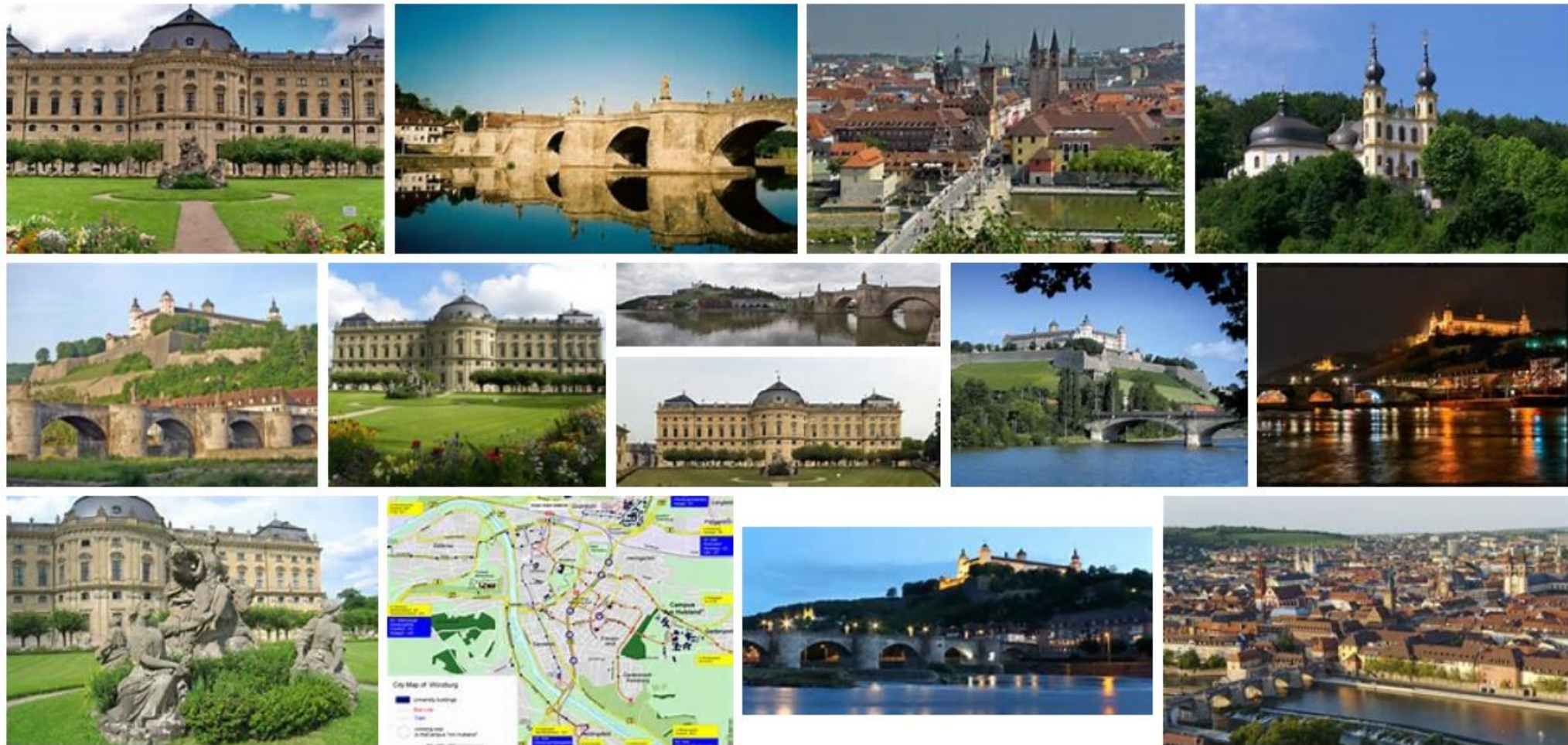
1.5 Creativity techniques

- Ideas for start-ups

Task 1: Three ideas for start-ups

1.1 THE LECTURE: OBJECTIVES AND ORGANISATION

Würzburg



University of Wurzburg



Main Building of the University of Wurzburg



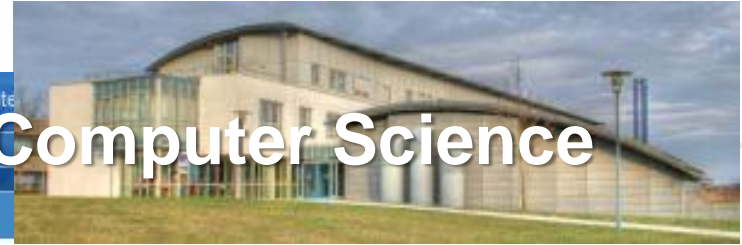
The roots of the Julius Maximilian University of Wurzburg reach back as far as 1402.

In that era, it was the sixth institution of higher education to be founded in the German-speaking regions of Europe, after the Universities of Prague, Vienna, Heidelberg, Cologne, and Erfurt.

Many eminent scholars and scientists, [14 Nobel Laureates](#) among them, have conducted research and taught in Wurzburg.

[Notable scientists](#) include [Wilhelm Conrad Röntgen](#), who discovered X-rays in Wurzburg in 1895, and Klaus von Klitzing, who discovered the Quantum-Hall Effect.

Today, Wurzburg's university comprises ten [faculties](#) with approximately 425 professors and 29,000 students.



Chairs and professorships at the Department of Computer Science

- « Faculty of Mathematics and Computer Science
- « Department of Computer Science
- News ▶
- Department ▶
- Chairs/Professorships ▼**
- Chair of Computer Science I ▶
- Lehrstuhl für Informatik II ▶
- Chair of Computer Science III ▶
- Chair of Computer Science V ▶
- Chair of Computer Science VI ▶
- Chair of Computer Science VII ▶
- Chair of Computer Science VIII ▶
- Chair of Computer Science IX ▶
- Professorship for Media and Computing
- Professorship for Computer Science Education
- Former professors
- Research ▶
- Studies ▶



Efficient Algorithms and Knowledge-Based Systems (Computer Science I)

Prof. Dr. Alexander Wolff
Prof. Dr. Dietmar Seipel
Prof. Dr. Christian Glaßer



Software Engineering (Computer Science II)

Prof. Dr.-Ing. Samuel Kounev
Prof. Dr. Jürgen Wolff von Gudenberg



Communication Networks (Computer Science III)

Prof. Dr.-Ing. Phuoc Tran-Gia



Computer Engineering (Computer Science V)

Prof. Dr. Reiner Kolla



Artificial Intelligence and Applied Computer Science (Computer Science VI)

Prof. Dr. Frank Puppe
Prof. Dr. Andreas Hotho



Robotics and Telematics (Computer Science VII)

Prof. Dr. Klaus Schilling
Prof. Dr. Andreas Nüchter



Aerospace Information Technology (Computer Science VIII)

Prof. Dr.-Ing. Sergio Montenegro
Prof. Dr.-Ing. Hakan Kayal



Human-Computer-Interaction (Computer Science IX)

Prof. Dr. Marc Erich Latoschik



Professorship for Media and Computing

Prof. Dr. Jörg Cassens



Professorship for Computer Science Education (at the chair for Mathematics Education)

Prof. Dr. Martin Hennecke



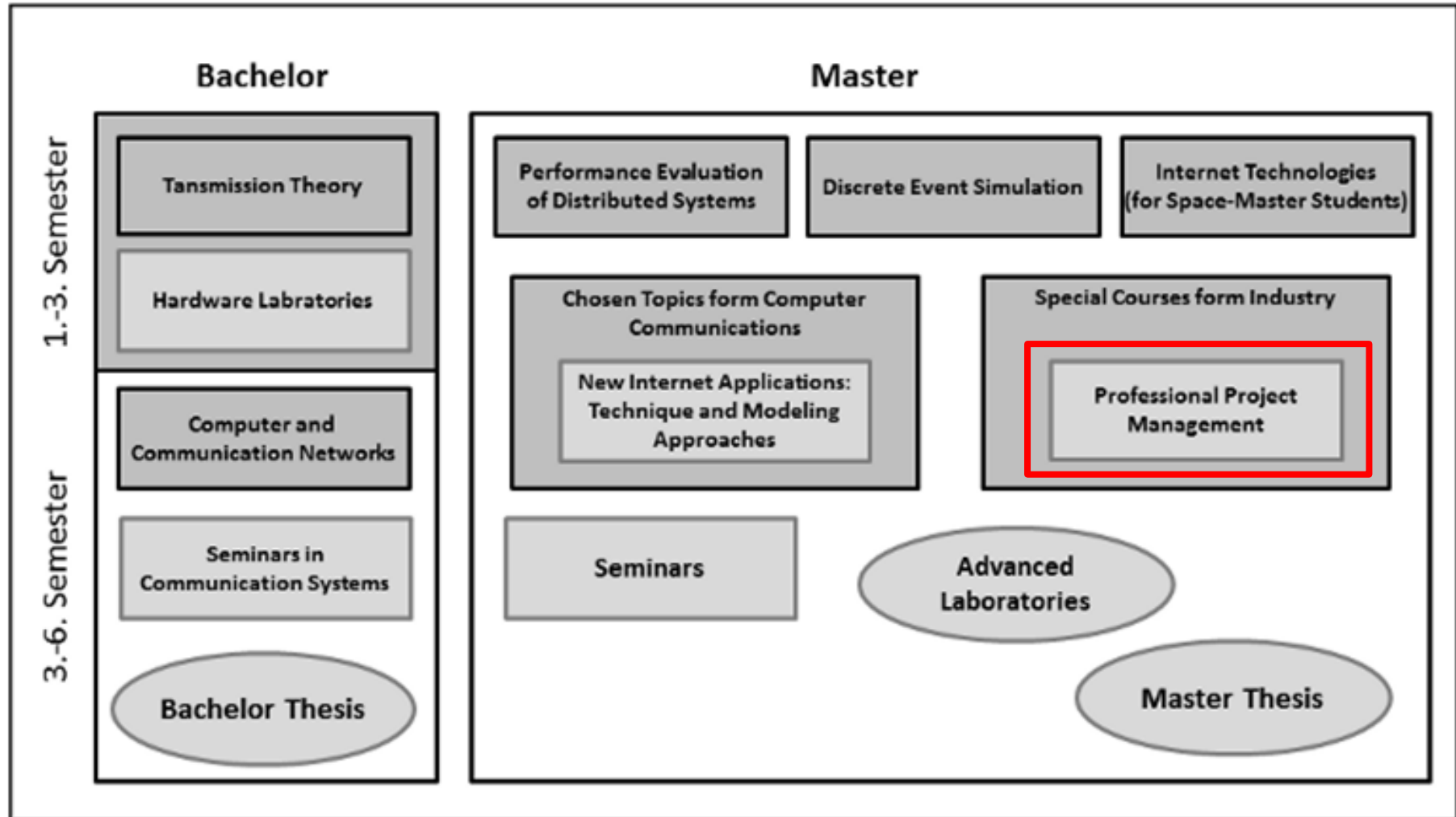
Honorary Professor

Prof. Dr. Harald Wehnes



Lecture Overview

Chair of Prof. Hoßfeld / Prof. Tran-Gia, University Würzburg



About the Lecturer



1978: Doctoral degree from University of Giessen in numerical maths

2011: Honorary professor, department of computer science,
University of Würzburg

Practical experiences

Business

management positions, project manager of big sized projects, project portfolio manager:

- University of Wuppertal
- Medis /GSF (German Research Centre for Environmental Health)
- Health Insurance, ICT
- 2008 price winner of the „German Project Excellence Award 2008“

Teaching & Research

- University of Wuppertal, University of Applied Sciences Munich: Structured Programming
- University of Würzburg, Chair of Communication Networks (Prof. Tran-Gia) “Professional Project Management in Practice” (since 2000)
- 2007: Certificate of "Competence of Excellence (CoE)"



Theory and methods

About the Lecturer: Actual activities



- ▶ Member of the Department of Computer Science, University of Würzburg: Teaching & Research
- ▶ Member of GPM (German Association of Project Management), a network of 8.000 PM experts; GPM is a member of IPMA (International Project Management Association)
 - Member of the Executive board: 2012 – 2015
 - Project management in education
 - PM at Universities
 - PM at Schools
 - PMOs (project management offices) at Universities
 - PM for research projects
 - PM Forum (biggest project management congress in Europe, 1.000 participants): manager of the program committee – since 2012
- ▶ Professor Wehnes Consulting: ICT & Project Management – since 2013

Highlight 2018: Exhibition stand with the team products and an excursion to CeBIT 2018



International Project Excellence Award (Video)

[Video Helsinki 2009](#)

International Project
Excellence Award

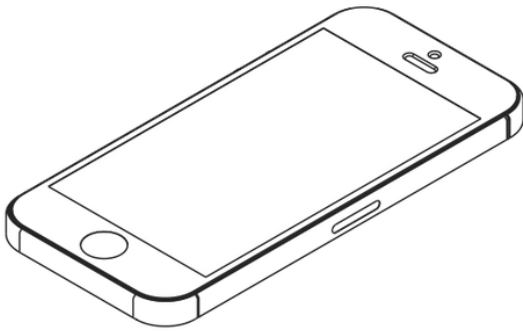


Munich (where the lecturer lives)



Mentimeter

Go to www.menti.com and use the code 14 91 93



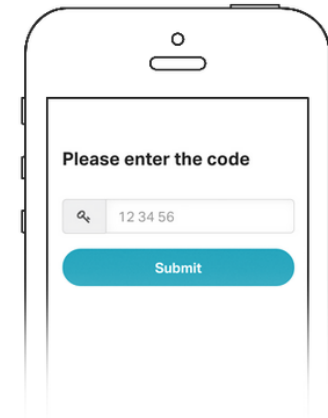
1

Grab your phone

www.menti.com

2

Go to www.menti.com



3

Enter the code 14 91 93 and vote!

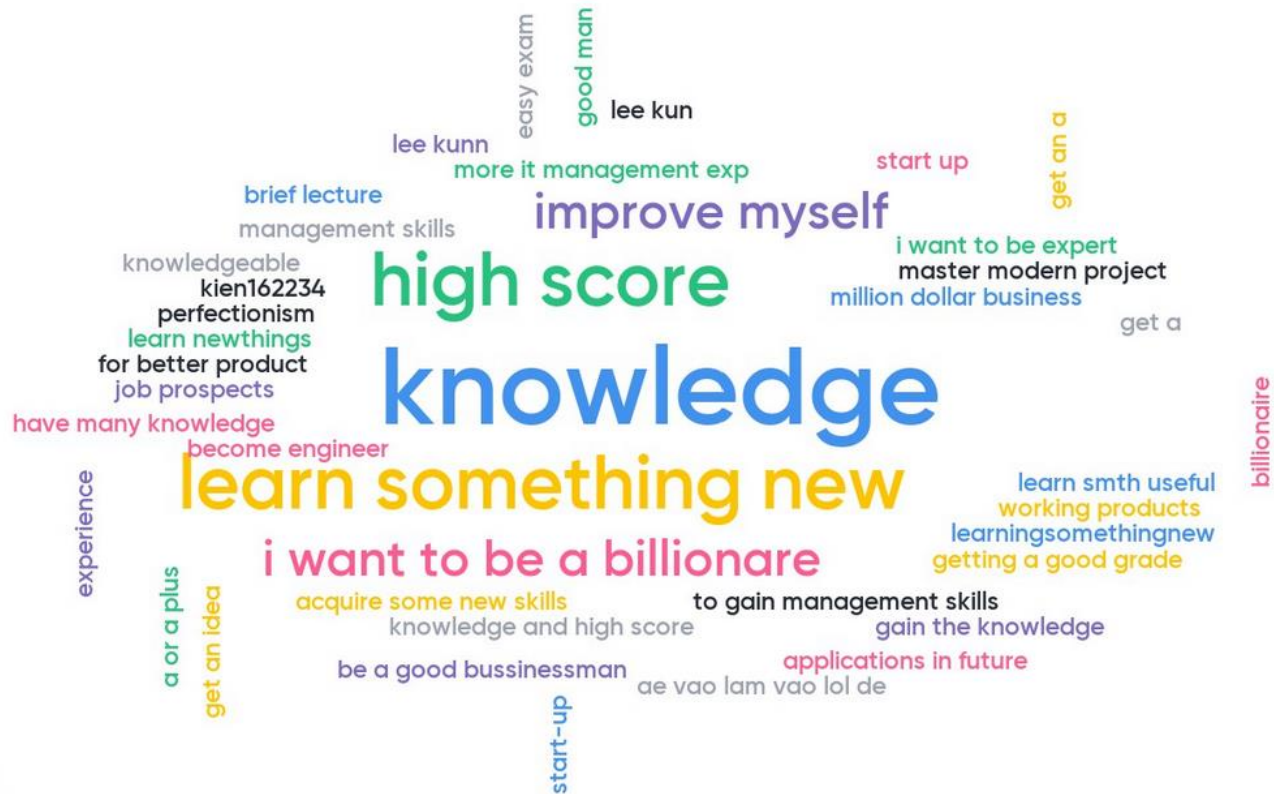
Motivation

Word Cloud



Expectations

Word Cloud



Your personal

Lecture "Modern Project


Platform for the documents and templates of the lecture and for the upl

 Project roadmap viet-engl

 Scrum Guide - English

 Scrum Guide - Vietnamese

09.03.2020

 Organisation and objectives of the lecture

 Questionnaire Expectations ...

 Upload: Expectations

 Brain Writing

 Upload: Task 1 Startup ideas

Name:	
# of the student list:	
Motivation for your participation	
Expectations	
Experience in project work	
1. As a project manager	1.
2. As a member of a project team	2.
3. Experience in pm software (e.g. MS Project)	3.
Experience	
1. Website programming	1.
2. App development	2.

Please upload the questionnaire today!

what: project manager

where: vietnam



Recent searches

project manager, vietnam

Sort by

Relevance

Date

Salary

Locations

Worldwide

Asia

Vietnam

Mekong Delta

North Central Coast

North East

North West

Red River Delta

South Central Coast

South East

Contract type

Any

Part-time

Full-time

Permanent

Contract

Temporary

Training

Voluntary

Project Manager jobs in Vietnam

All

New

Apply easily

1 to 20 of 2751 jobs

65 project manager jobs in Vietnam for you

Project Management Market is Booming!

Project Manager (Logistics, Supply Chain) New

Navigos Search

Hanoi

Navigos Search's client a very potential corporation in Vietnam to build up & operate digital platforms in different industries. "Our goal is to build up digital ecosystem in diver...

March 8 - Save - Send to a friend

Apply easily

Project Manager (Logistics, Supply Chain) New

Navigos Search

Hanoi

Navigos Search's client a very potential corporation in Vietnam to build up & operate digital platforms in different industries. "Our goal is to build up digital ecosystem in diver...

March 8 - Save - Send to a friend

Apply easily

Project Manager New

RGF Executive Search

Ho Chi Minh City

Location: Vietnam - Ho Chi Minh City Salary: Attractive package Job Function: Project Manager Industry: Technology/Online Sub-Industry: Software Company Reference: JO-200306-...

Source: <http://www.careerjet.com/search/jobs?s=project+manager&l=vietnam> – Mar 08 2020

IT Project Manager New

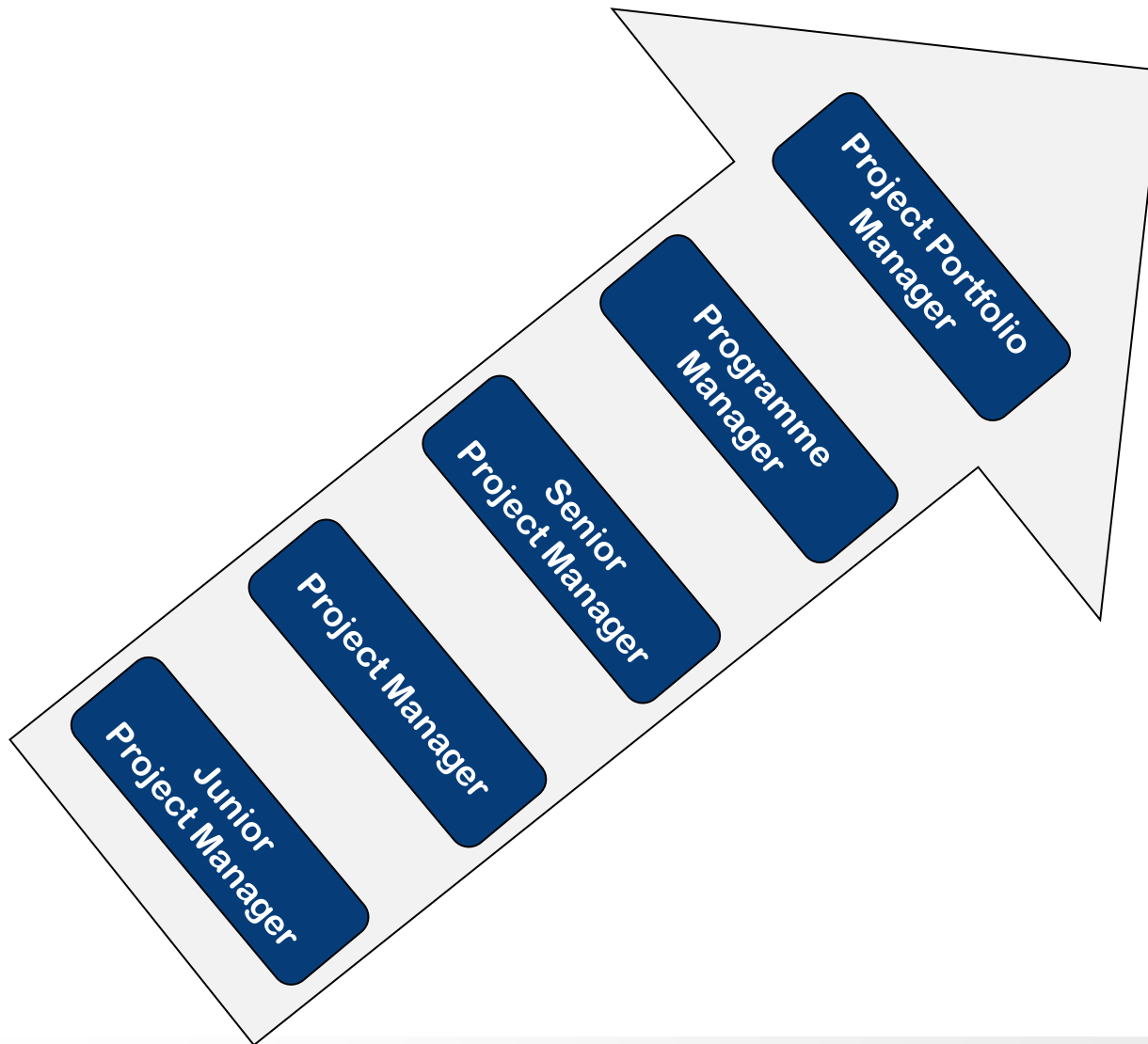
Tan Binh, Ho Chi Minh City

The Project Manager is responsible for organizing the Software Development team and managing the development process of multiple software projects. The Project Manager is reporting...

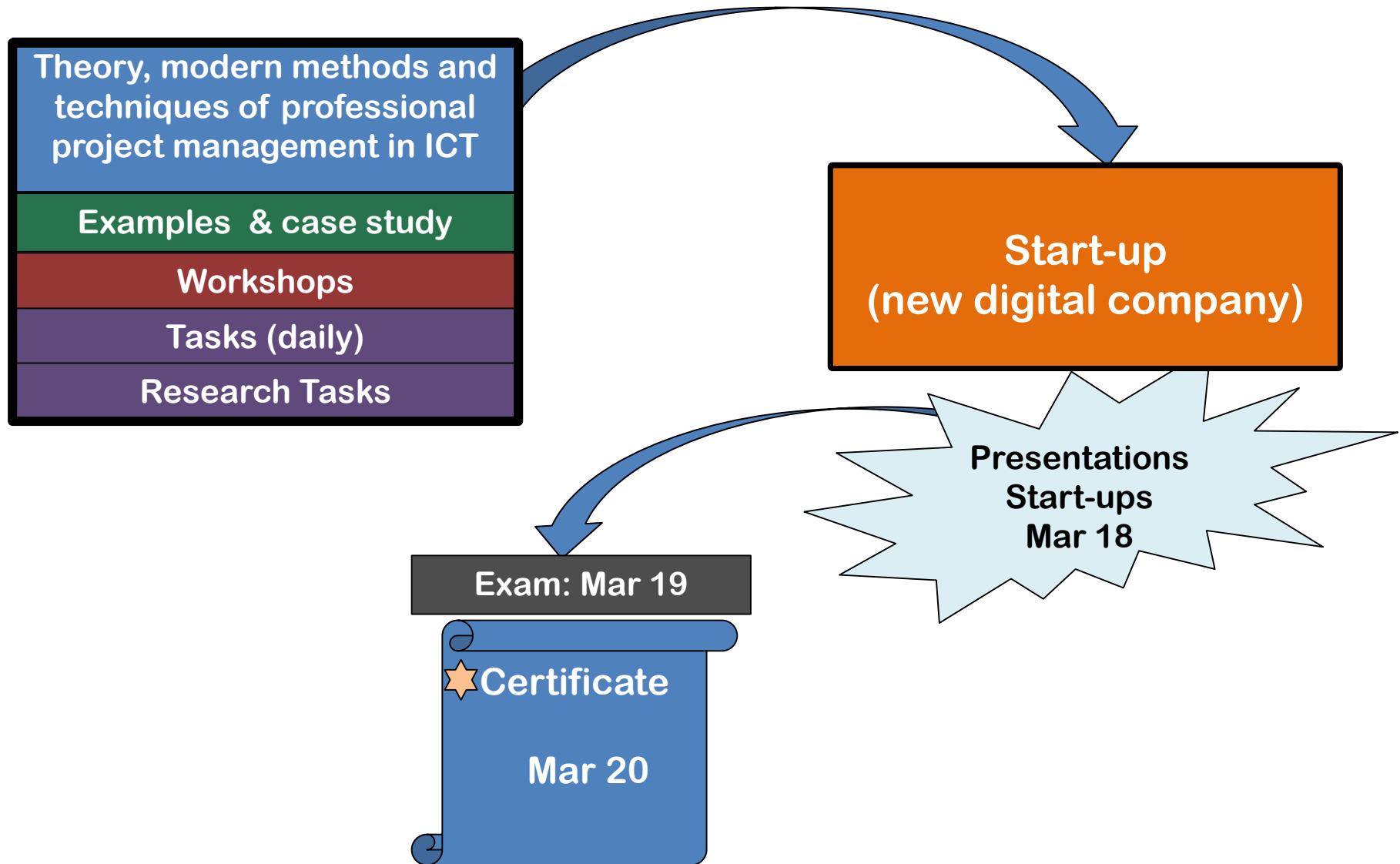
March 8 - Save - Send to a friend



Career Path of Project Managers



Design of our Lecture



Design of our Lecture

Theory, methods and techniques of professional project management in ICT:

Business Plan
Project Environment and Stakeholder Management
Project Design
Project Initialisation, Project planning, Project implementation, Project Close-out
Project Monitoring and Control
Agile Project Management:
 Scrum, Kanban, Lean Startup
Project Management Tools
Project Organization
Communication Management
Project Marketing
Risk Management

Start-up

(new internet company, app or IT service)

Business Plan
Project Environment and Stakeholder Management
Project Design
Project Initialisation, Project planning, Project implementation, Project Close-out
Project Monitoring and Control
Agile Project Management:
 Scrum, Kanban, Lean Startup
Project Management Tools
Project Organization
Communication Management
Project Marketing
Risk Management

Content of our Course

- ▶ Basics of Project Management
- ▶ Business Plan
- ▶ Agile Project Management: Scrum, Kanban, Lean Start-up
- ▶ Hybrid Project Management
- ▶ Project Environment and Stakeholder Management
- ▶ Project Objectives, Project Canvas, Project Charter
- ▶ Project Start-up, Project planning, Project implementation, Project Close-out
- ▶ Project Monitoring and Control
- ▶ Project Management Tools
- ▶ Communication Management, Project Marketing
- ▶ Project Organization
- ▶ Risk Management
- ▶ Quality Management

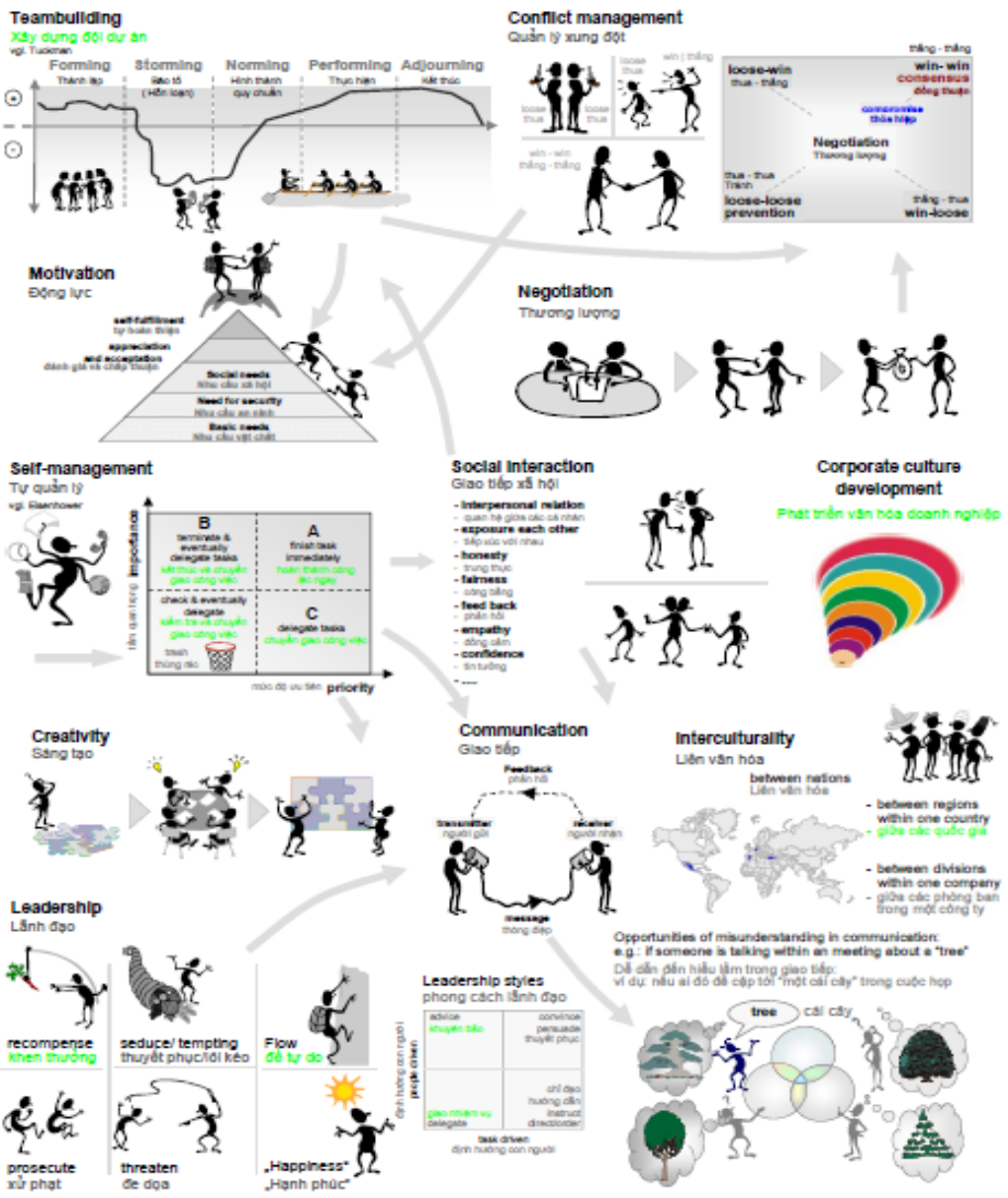
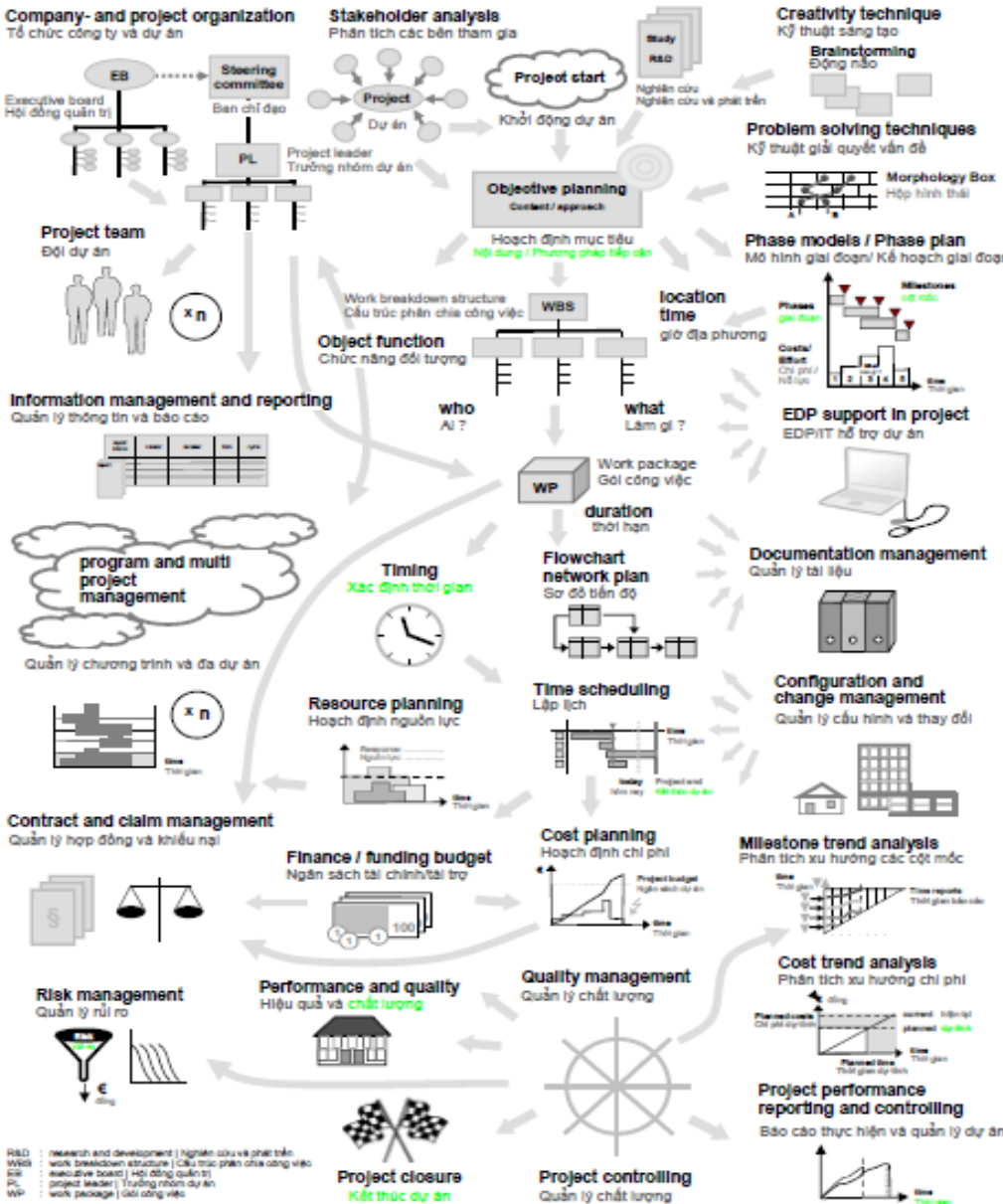
Project Roadmap

IPMA
International Project Management Association
Hard Facts
Kỹ năng cứng

Lộ trình dự án *Dành cho học viên*

Project Roadmap Practitioner

GPM
GPM Graduate Certificate for Project Management v. 1
Soft Facts
Kỹ năng mềm



Objectives of the Lecture



- ✓ You know the fundamentals (methods, techniques) of modern project management in ICT
- ✓ You know how to start, design, plan, execute, control, and close out projects
- ✓ You know the critical success factors of projects
- ✓ You know the importance of stakeholder and communication management
- ✓ You have first experiences with a modern project management tool (Trello)
- ✓ **You are motivated to get deeper into the field of project management (in ICT)**

Schedule

Online (Room D08 – 502)

09.03	10.03	11.03	12.03	13.03	16.03.	17.03	18.03	19.03	20.03
9:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Lecture	09:20-11:50 Final Presentations	09:20-10:50 Exams (2 x 45 minutes)	
13:20-15:20 Lecture	13:20-15:50 Lecture	13:20-15:20 Lecture	13:20-15:50 Lecture		13:20-15:20 Lecture	13:20-15:50 Lecture	13:20-15:20 Preparation for Exam		14:00? Ceremony
Project work in teams	Project work in teams	Project work in teams	Project work in teams	Project work in teams	Project work in teams	Project work in teams			

Final Presentation

Presentation by the team members

Total duration: < 15 minutes

Part 1: Presentation of the project management of your project

Part 2: Presentation of the project product (prototype)

- Demo of the product (ppt or other format)

Platform for the documents and information of the lecture

- ▶ Registration for **full** access to the platform



WueCampus2

Username

Password

Remember username

Log in

Forgotten your username or password?

Cookies must be enabled in your browser ⓘ

Some courses may allow guest access

Log in as a guest

Is this your first time here?

As a student you can use wehnes@informatik.uni-wuerzburg.de please log in with your account (eg. s123456 or sis16cn) and your password. If you have forgotten your username or password, please contact our IT-Support: 0931/31-85050 - it-support@uni-wuerzburg.de

You are a teacher/member of the University of Würzburg and you want to invite an external user?

Send New account form to the external user, and let him do the following steps:

External User:

1. Press the button -Create new account- and please follow the instructions.
2. An email will be immediately sent to your email address.
3. Read your email, and click on the web link to confirm the account.
4. Send an email to your Teacher/Member to let him know, that your account is now valid.

Teacher/Member:

1. select the course you want to participate in the external user.
2. enrol the external user manually.

- ▶ Student: send an email to wehnes@informatik.uni-wuerzburg.de
- ▶ Lecturer: enrolls you

Platform for the Documents and Information of the Lecture

← → ↻ 🏠 <https://wuecampus2.uni-wuerzburg.de/moodle/course/view.php?id=16293§ion=1> ⌵ 🔒 ⭐

Meistbesucht 🐛 Horde :: Anmelden 📧 Roundcube Webmail ... 📄 Online-Campus Hochs... 📰 News - Service - Shop... 🗂️ WueCampus2 📅 Bei Trello anmelden 🗣️ DeepL Übersetzer ⌚ Logout-Timeout 🏠 The Minimum Viable P...

wuecampus ⚙️ Meine Kurse ▾ Dieser Kurs ▾ Deutsch (de) ▾

🔔 🗨️ **Harald Wehnes**
Student

2020: Modern Project Management in ICT, HUST

Startseite > Meine Kurse > SS16_PPMP > Lecture "Modern Project Management in ICT", HUST, Hanoi, 2020

Allgemeines

🗨️ News

Lecture "Modern Project Management in ICT", HUST, Hanoi, 2020

Platform for the documents and templates of the lecture and for the uploads of the solutions of the tasks

- 📄 Project roadmap viet-engl
- 📄 Scrum Guide - English
- 📄 Scrum Guide - Vietnamese

09.03.2020

Suche in Foren

[Erweiterte Suche](#) ⓘ

Aktuelle Termine

- 📅 Upload: Expectations ist fällig.
Dienstag, 10. März, 00:00
- 📅 Upload: Task 1 Startup ideas ist fällig.
Dienstag, 10. März, 00:00

[Zum Kalender ...](#)

<https://wuecampus2.uni-wuerzburg.de/moodle/course/view.php?id=16293§ion=1>

Teams & Team projects

74 students – 12 teams

10 teams with 6 members

2 teams with 7 members

Every day: Change of the leadership: “Project manager of the day”

Team projects: Startup Projects

Team project „Start-up Company“

„Learning by doing“

- ▶ **Project manager (of the day):** role with tasks and responsibilities
 - Leadership and coordination of the team work
 - Controlling of the results of the tasks
 - Controlling the working progress
 - **If there are any problems or questions, please contact the lecturer and your class monitor immediately**
 - Presentation of results and experiences

- ▶ **Team member:** role with tasks and responsibilities
 - Working on WP schedule
 - **If there are any problems or questions, please contact the actual project manager of your team immediately**
 - Inform the project manager about your working results

Rules of our collaboration

- ▶ Ask questions!
- ▶ Be curious!

- ▶ Please
 - Be on time
 - Smartphones and other devices off
 - No eating during the lecture
 - No sleeping during the lecture

Make me happy by asking a lot of questions

Research Tasks: Project Management in Vietnam

1. Large-size **historical projects in Hanoi** (result, duration, costs)
2. Large-size **actual projects in Hanoi** (result, duration, costs)
3. Large-size **historical projects in VN** (result, duration, costs)
4. Large-size **actual projects in VN** (result, duration, costs)
5. **Industry sectors** where project management is applied in VN
6. VN **portals** with job offers for project managers
7. VN **universities** that offer **project management (degree) courses for students**
8. **Books** about project management in Vietnamese
9. **Skills** of project managers (analyze some pm job offers)
10. **PM organizations and groups** in VN
11. **Tools for project work**
12. **Tools for virtual communication**

Presentation of the results by the team members: 16 Mar 2020

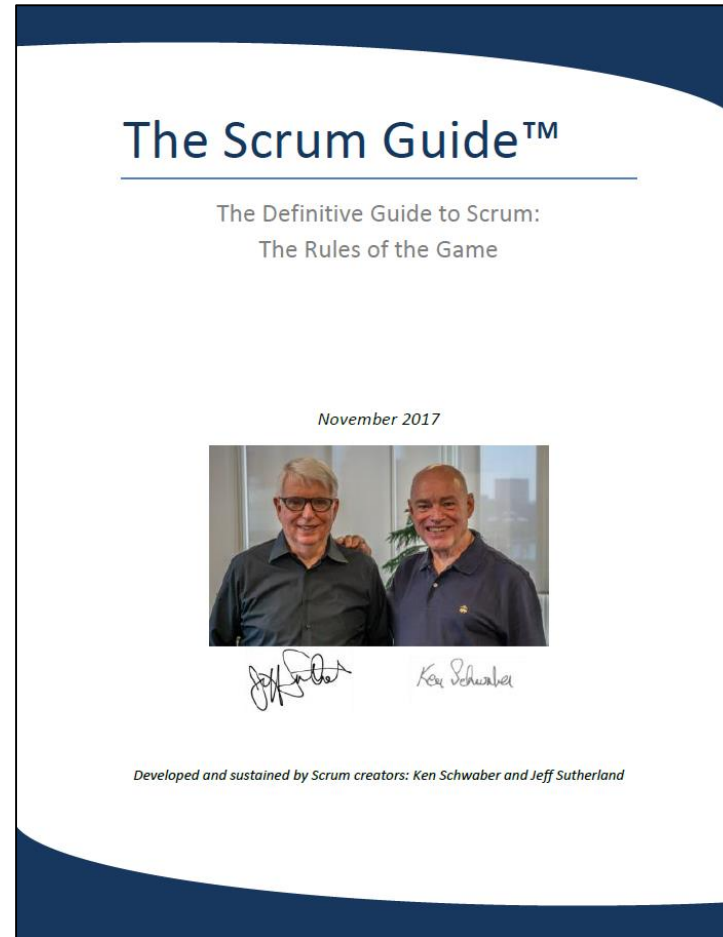
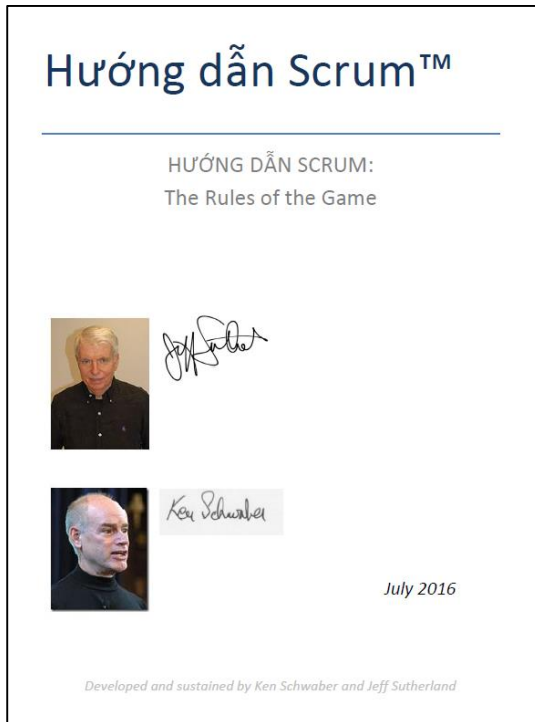
Literature and Links

[1] Project roadmap: <http://www.project-roadmap.com>

[2] The Scrum Guide™

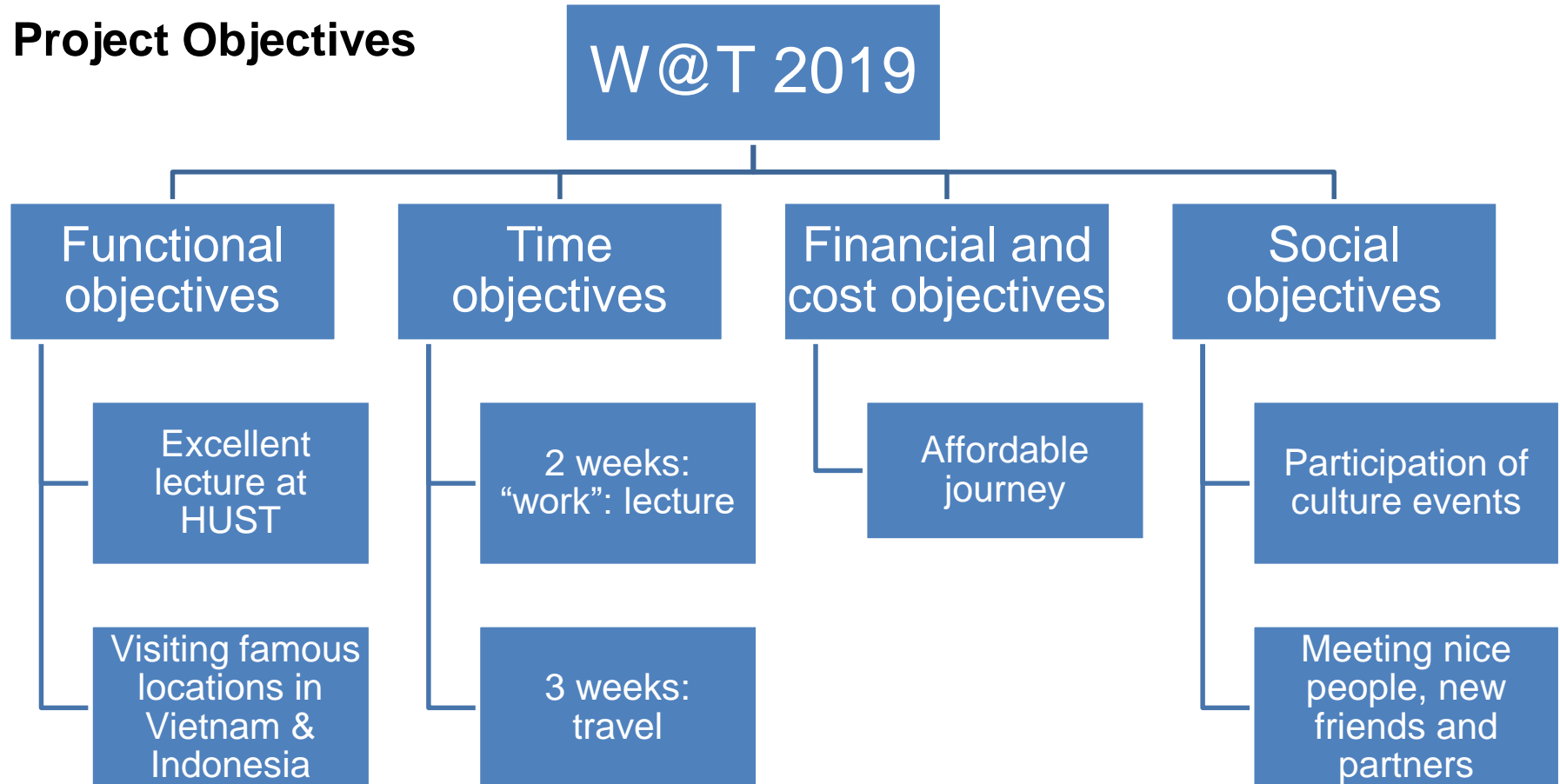
Free download:

<http://www.scrumguides.org/download.html>

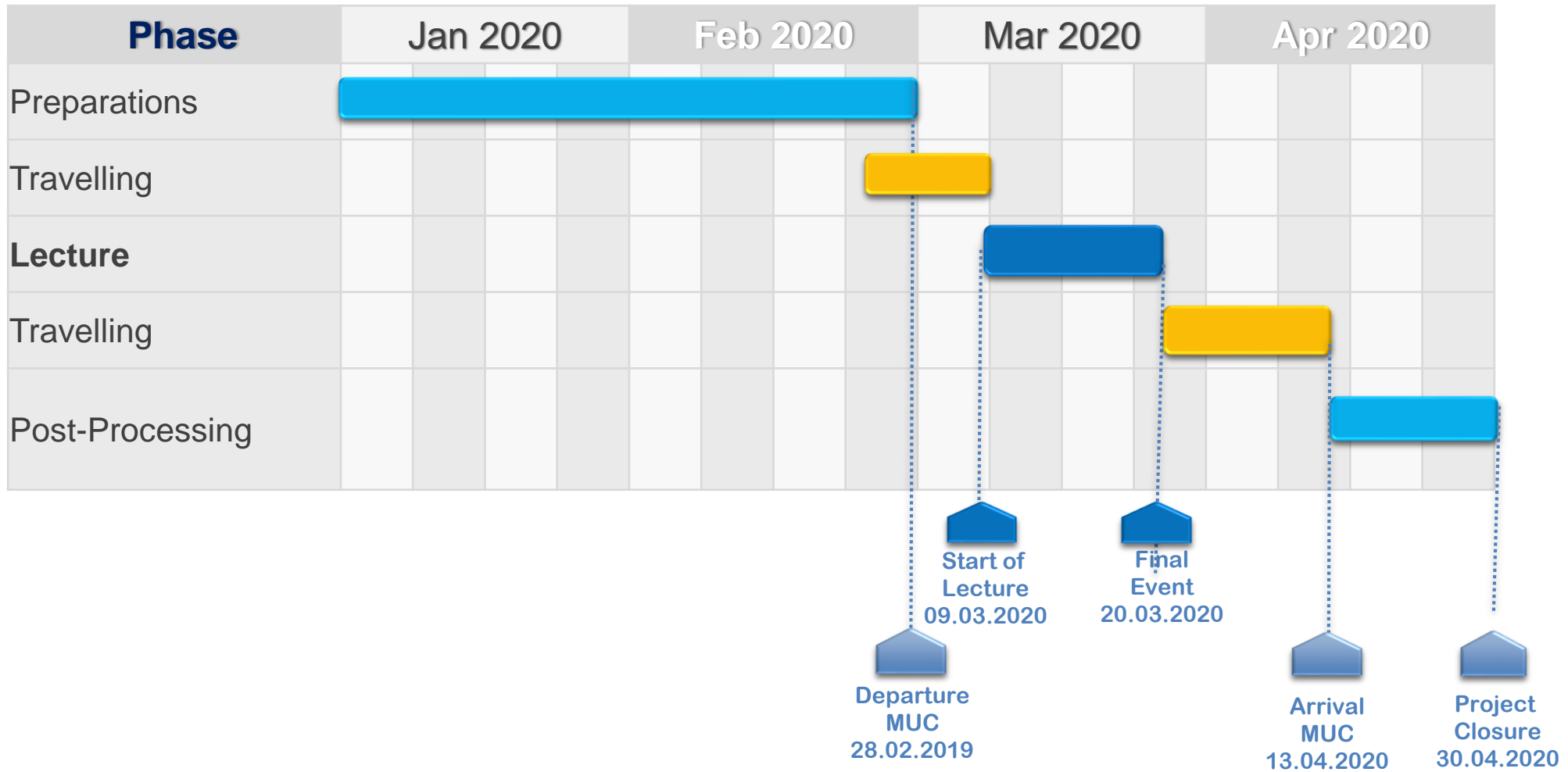


My personal Project „W@T (Work & Travel) 2020“

Project Objectives



Project phases and milestones W@T



Break (up to 10:30)

Project managers of the day communicate with their teams to find a solution for team communication

Next steps

1. 10:30 Project managers of team 1 – 12 tell their solutions
 2. We try to find the “best” solution for the teams
- ▶ Face book messenger: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
 - ▶ Trello: 8
 - ▶ <https://hangouts.google.com/> (Video call): 8

1.3 BUSINESS PLAN

*) The following slides are from a presentation of Dr. Christian Andersen, IGZ Wurzburg, 07.04.2014, University Wurzburg

Business plan must give the answer to three key questions

What is the content of the business?

- Description of the product and the **customer benefits**

How is the business positioned?

- Market environment and competition
- Strategy for marketing and sales

How is the implementation?

- Business model, organization
- Management and personal
- Realization schedule
- Opportunities and risks
- Funding

Why a business plan?

Top 5 Success factors of business Start-ups

- 1 Secured funding
- 2 Preparation and concept of establishment
- 3 Specialist knowledge and expertise
- 4 Self-confidence
- 5 Personal engagement

Top 5 Failing factors of business Start-ups

- 1 Financial problems
- 2 Errors in planning and in the concept
- 3 Not enough qualifications
- 4 over-estimation of one's abilities
- 5 Missing engagement

Quelle: Maisberger et al. 1998

The Business plan has 9 + 1 components

Executive Summary

Product or service

Market environment and competition

Marketing and sales

Business model, organization

Management and personal

Realization schedule

Opportunities and risks

Funding

attachment

about 30 pages

Objective

- Awake interest of the potential sponsor
- Communication of all key aspects of the company

Invest enough time in the formulation!

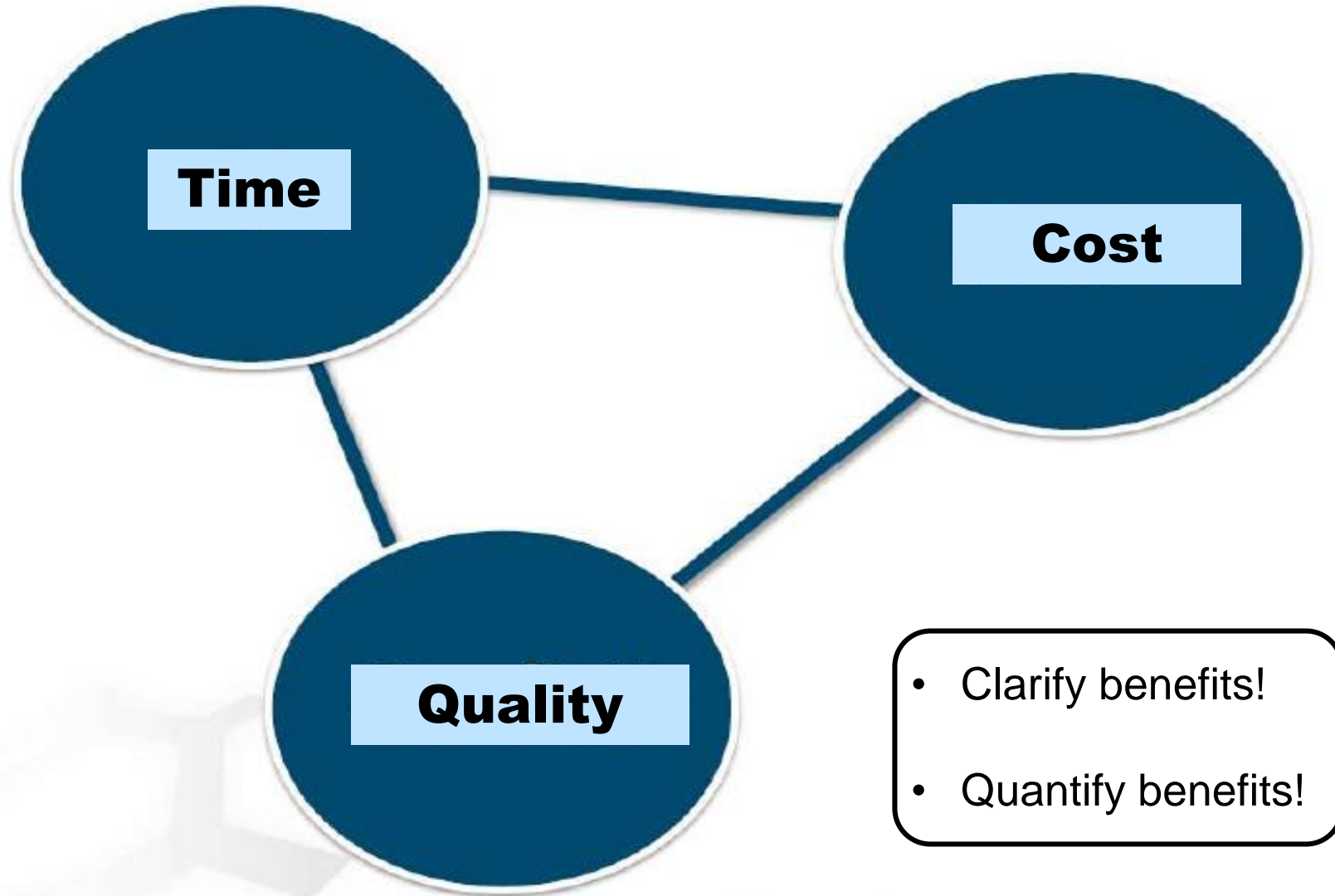
The business plan is the business card of your company

Content

- Brief summary of all the important aspects of the business plan
 - Product / service
 - Customer benefits
 - Relevant markets
 - Management competences
 - Development of the company
 - Funding

- **Product** idea:
 - Development of a material or immaterial product
 - The product brings new benefits
 - **Service** idea:
 - Development of a service
 - The service provides new benefits
- The idea becomes a business idea,
if someone is willing to pay money for this

The user benefit has 3 dimensions



Unique characteristics or Unique selling propositions (USP)

Unique characteristic:

My product is different from all others



Unique selling propositions (USP)

My product / my services offers a unique incentive to buy for my target group



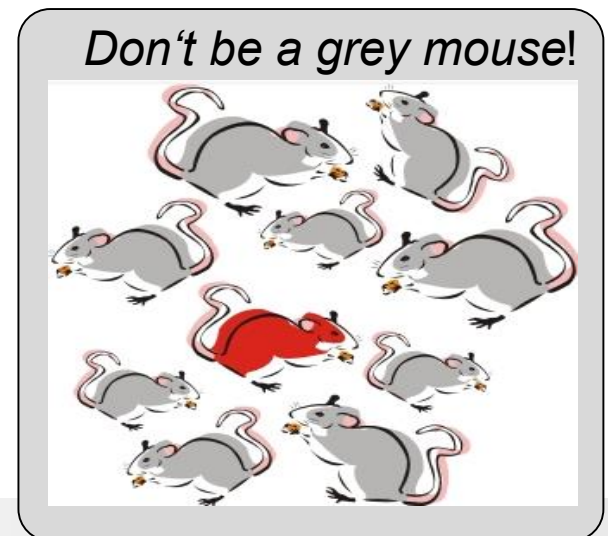
- A "unique selling point", that can be used for advertising
- USP describes an outstanding feature of a product
- The addressed target group should thereby develop preferences for the advertised product.
- USP is a prerequisite for successful positioning of products

The uniqueness can be caused by ...

- Technological
- Design
- Price
- ease of use
- quality / durability
- terms of time saving
- reachability (sales channel/location)
- the service
- the image
- ...

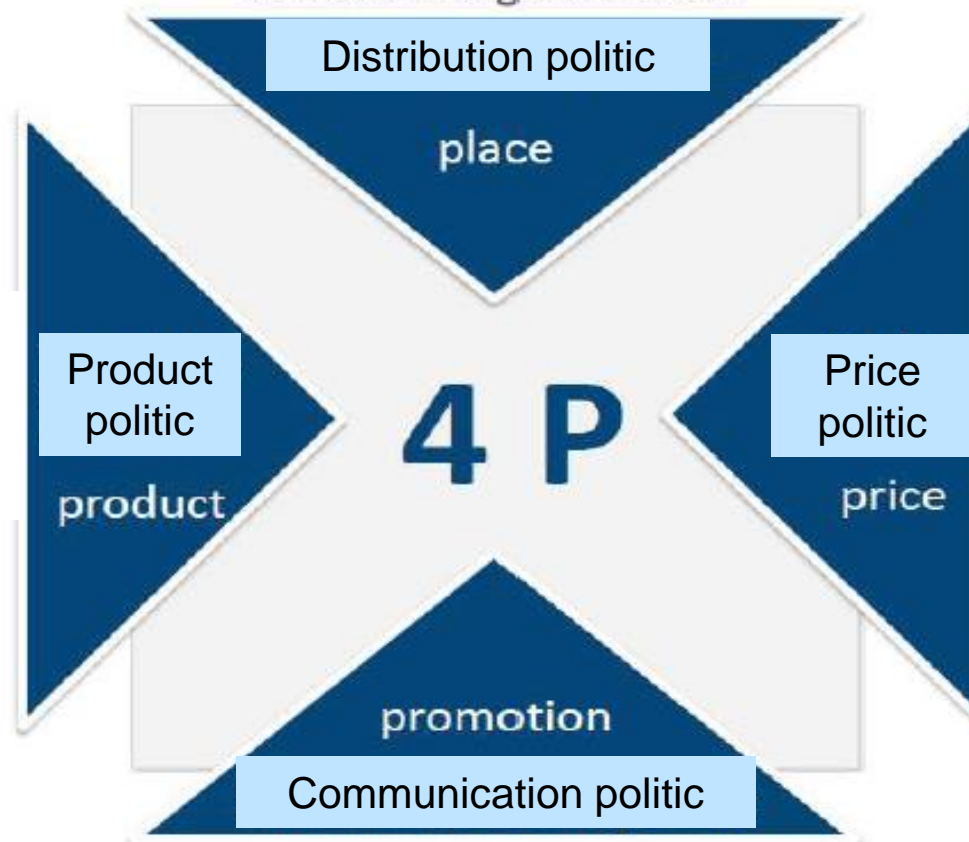
USP Examples

- ▶ Apple: “1000 songs in your bag”
- ▶ Service: 24 h – 7 days a week – all year round
- ▶ Special features of the product that similar products of other producers don’t have (these features are decisive to buy your product)
- ▶ IT Security: Google-Drive is a good tool; but a lot of people don’t like their private data stored on US-server → national solutions with the same features
- ▶ Price: Best price guarantee
- ▶ References from famous customers
- ▶ Studies: “*Based on scientific evidence ...*”
- ▶ Awards



The Marketing Mix

What is the best distribution for the product / service?



What properties must the product / service have?

What price are my customers willing to pay for the product / service?

How do I communicate with my customers?

Use social media ...

You Tube

twitter

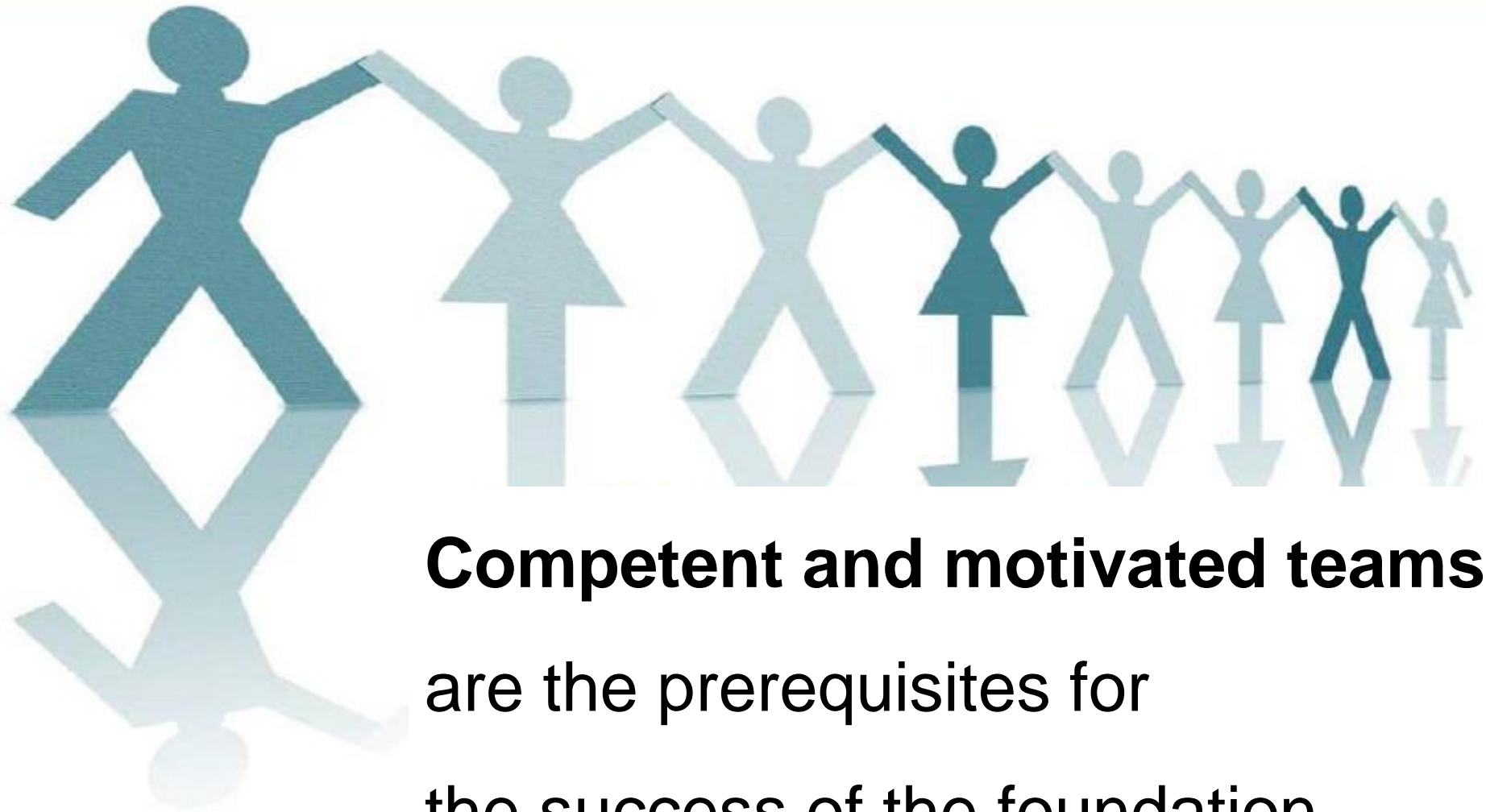
flickr

Blog

facebook

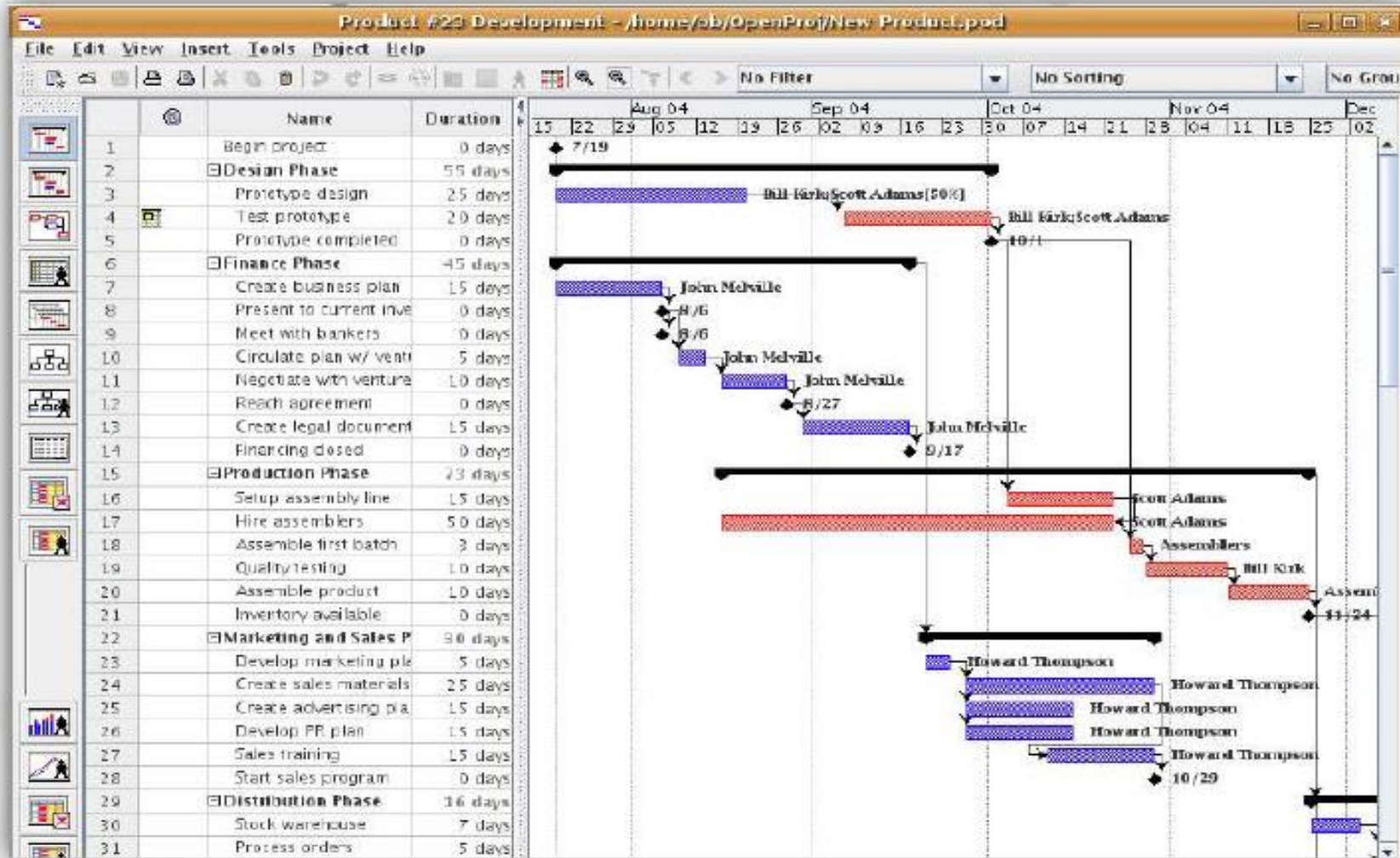
Business model market-specific perspective

... How do
I earn my
money?



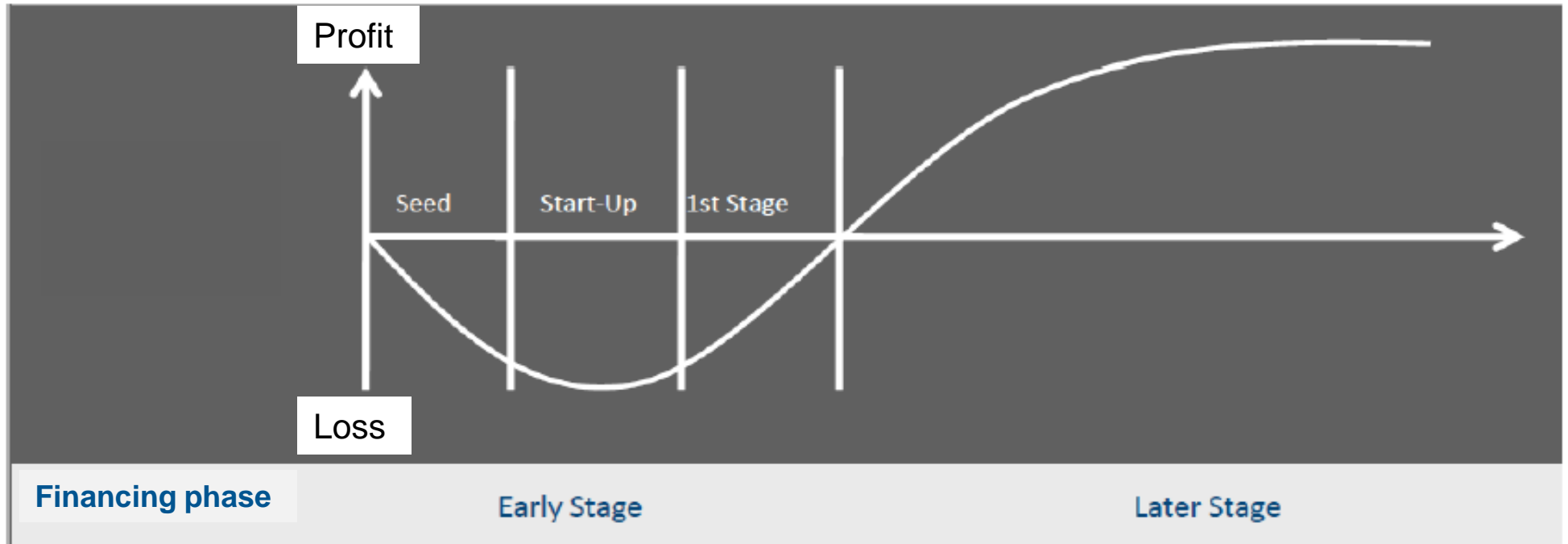
Competent and motivated teams
are the prerequisites for
the success of the foundation

Example of a realization plan

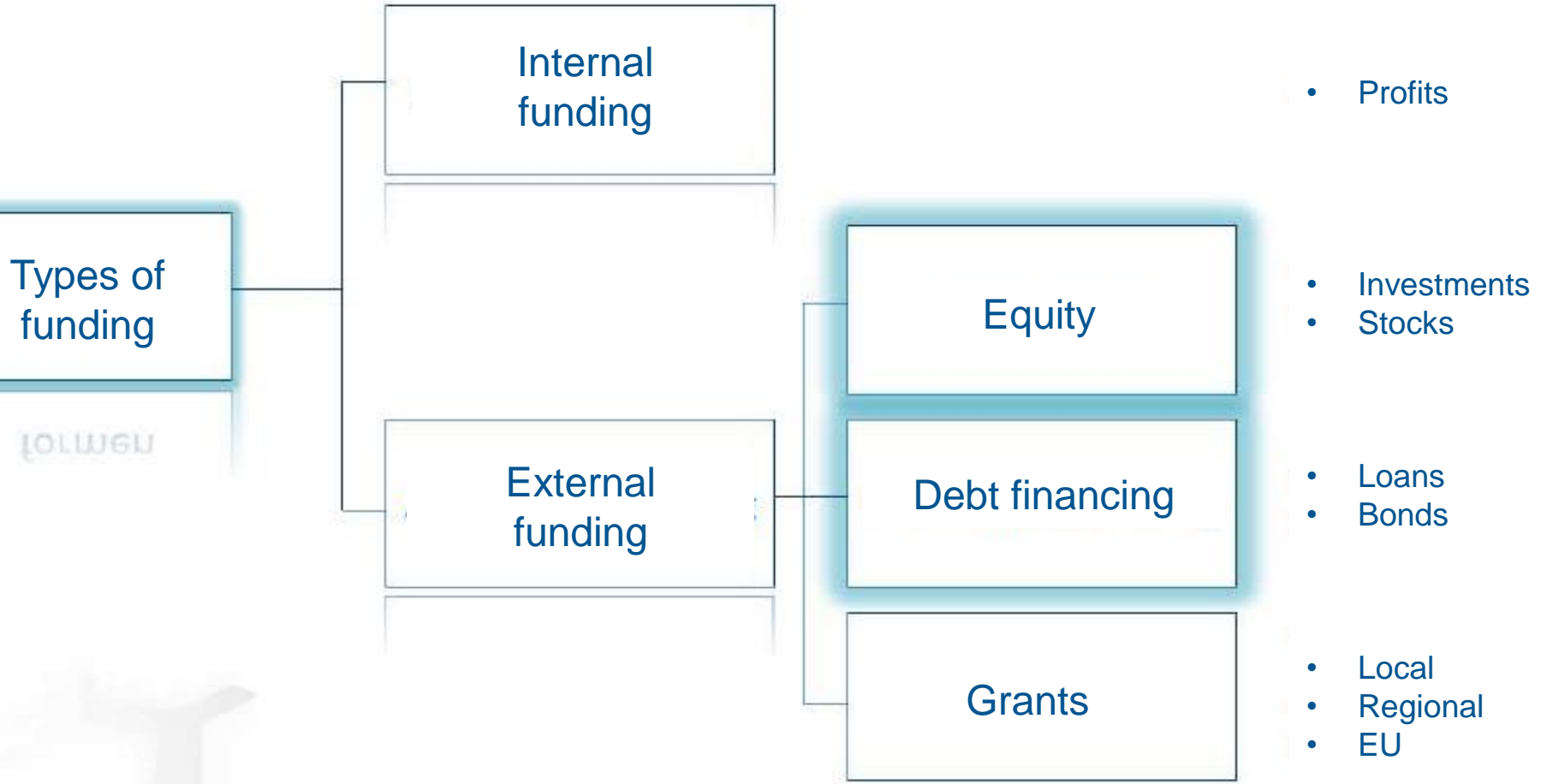


Quelle: Open Proj

Funding



Types of funding: Overview



Different types are used for a good financing!

Project management delivers many components of the business plan ...



... and controls the realization of the business plan

1.4 MOONSHOT THINKING*

*) The following slides are mainly from a presentation of Michael Korbacher, Google, 07.04.2014, University Wurzburg

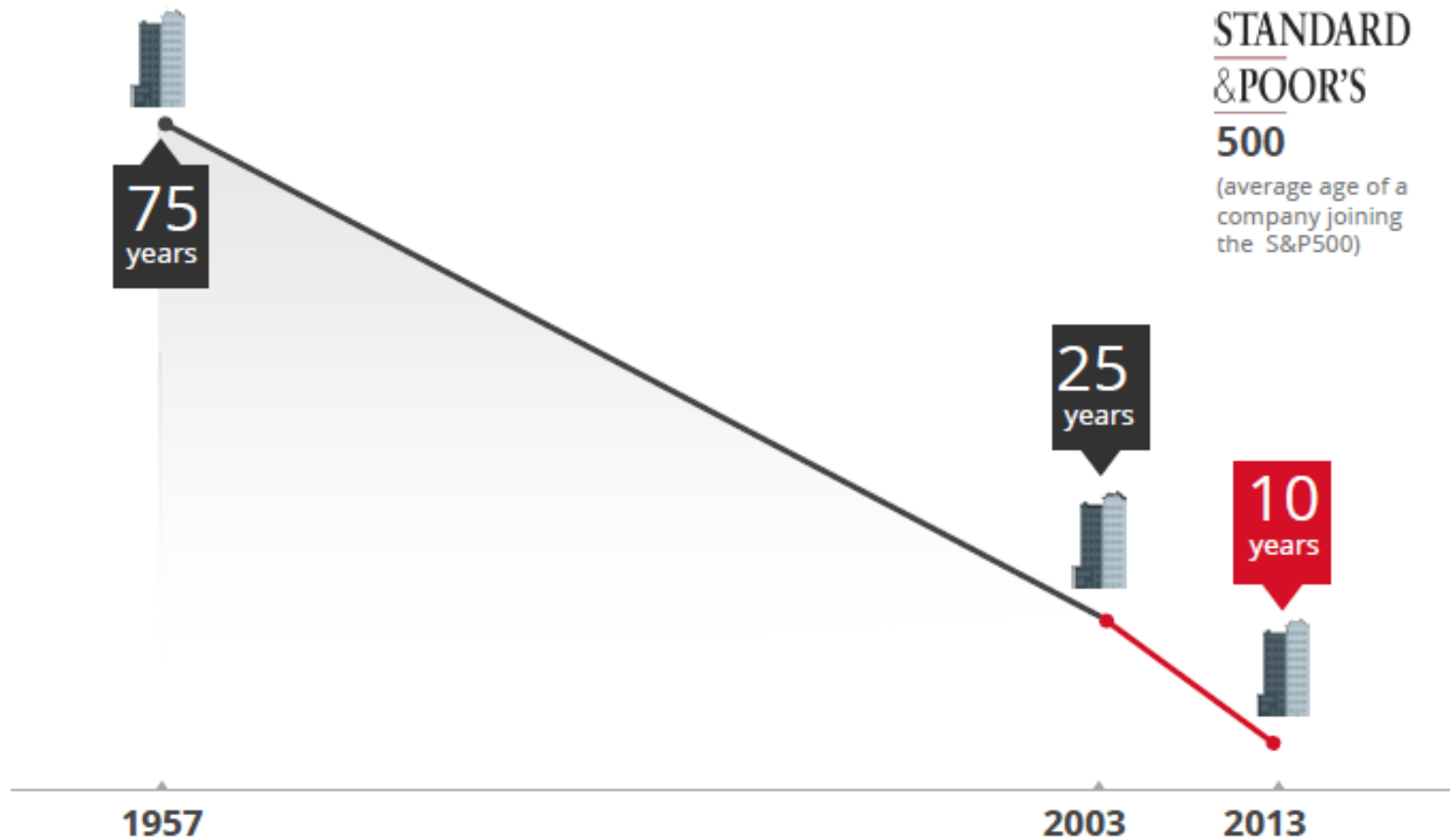
The Google Road To Innovation

Michael Korbacher

Country Manager Google Enterprise DACH & CEE

Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Trends...



Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg



Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg



Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Moonshot Thinking

A photograph of a space shuttle launching from a launch pad. The shuttle is ascending vertically, leaving a massive, billowing plume of white smoke and fire behind it. The launch pad structure is visible in the foreground. The sky is a clear, deep blue. A blue rectangular box is overlaid on the right side of the image, containing white text.

Not improve by 10%, but by 10X

Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Examples of Google Moonshots



Self-driving car

a robotic vehicle that is designed to travel between destinations without a human operator



[Google glass](#)

a wearable, voice-controlled device that resembles a pair of eyeglasses and displays information directly in the user's field of vision

Principles

1. Focus on the user



2. Innovation is not Perfection



3. Being fast is Better

Launch fast and Iterate...

"Big will not beat small anymore. It will be fast beating slow."

Rupert Murdoch



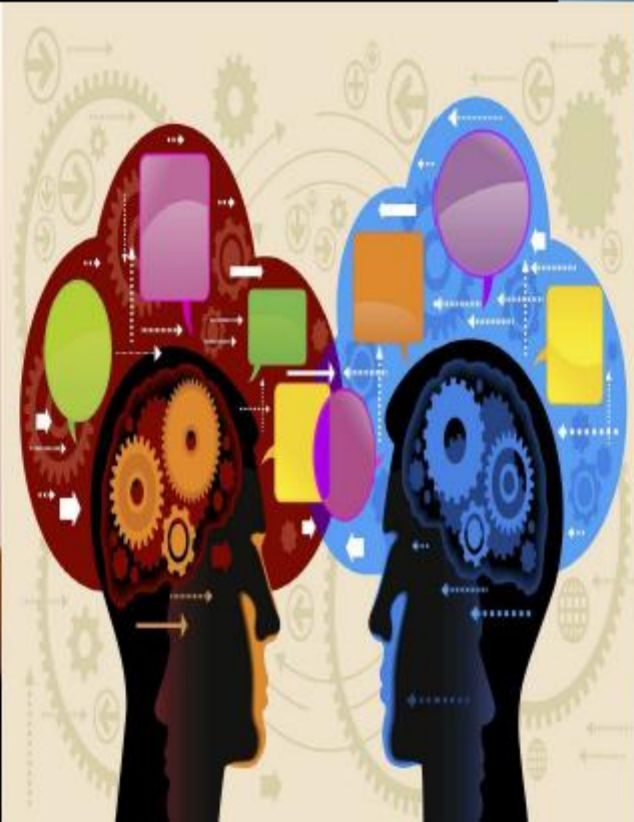
Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Principles

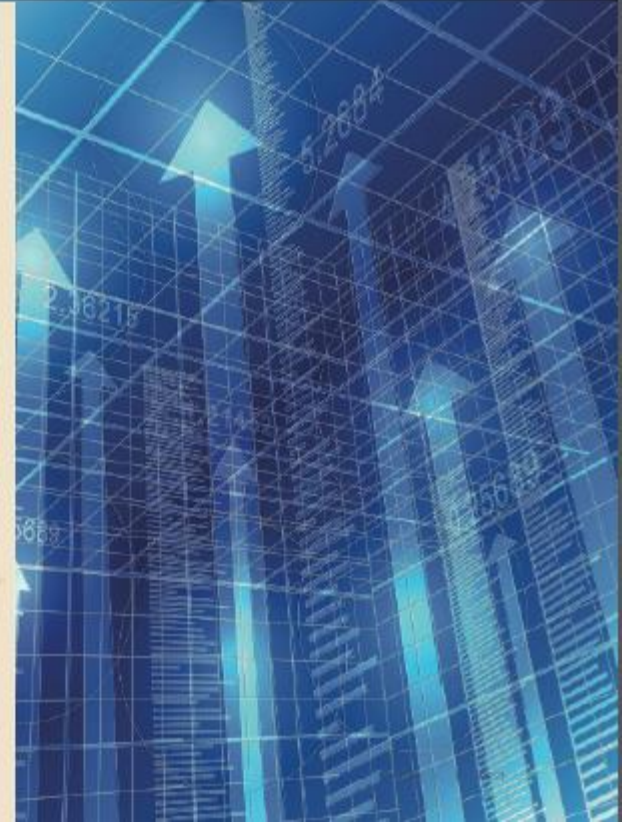
4. Ideas come from everywhere



5. Share and collaborate



6. Data beats Politics



Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Principles

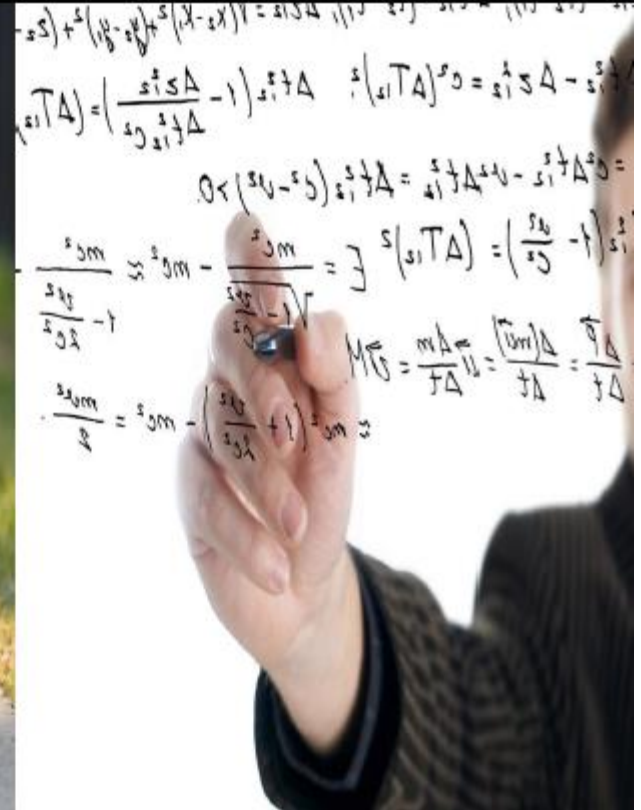
7. Develop Ideas, Don't kill them



8. Allow Errors



9. Freedom to Passion



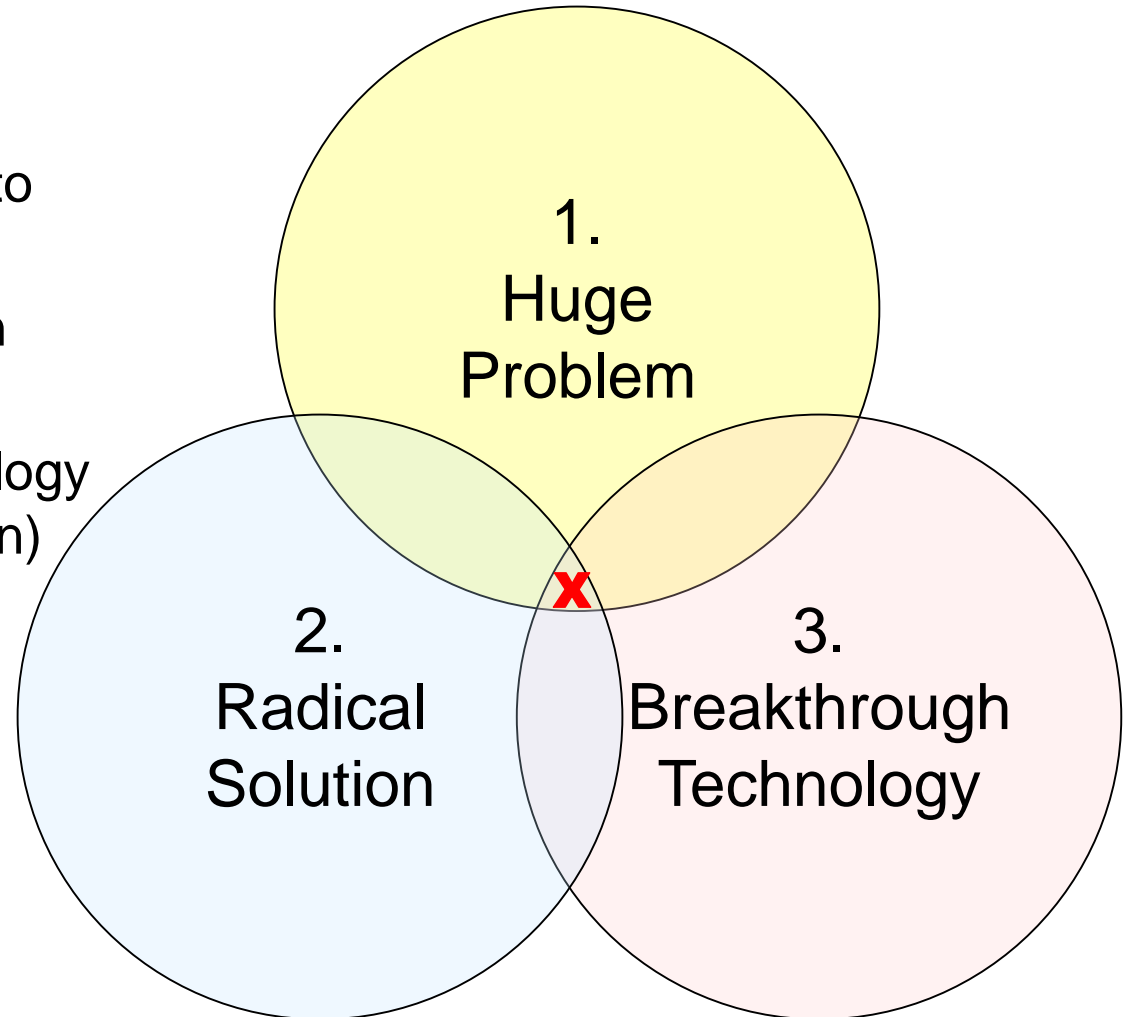
Source: M. Korbacher: The Digital Road To Innovation, 7.8.2014, Würzburg

Make your moon shot!

Moonshot Thinking

Steps

1. Address a huge problem to solve (define it clearly)
2. Propose a radical solution to fix the problem
3. Use breakthrough technology (often: stepwise realization)



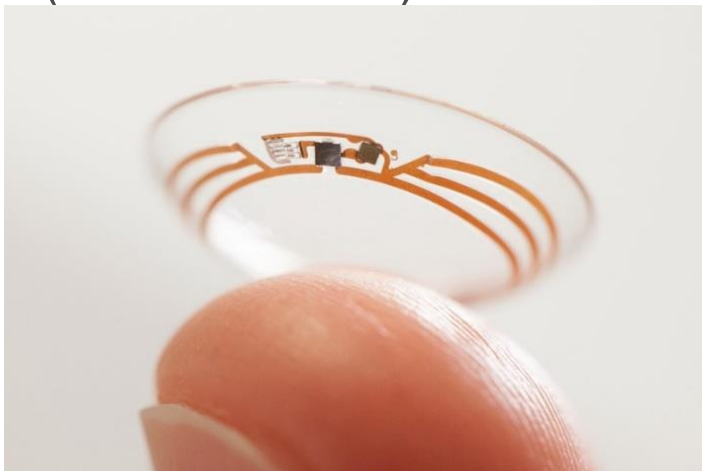
The biggest problems are the biggest opportunities

Examples

- ▶ **Huge problem** in the world: people are killed or injured by car accidents
- ▶ **Solution:** self-driving cars

- ▶ **Huge problem:** You often need further information
- ▶ **Solution:** Eyeglasses that display information directly in the user's field of vision

- ▶ **Huge problem:** special diseases
- ▶ **Solution:** life-saving contact lens (Beat diabetics)



- ▶ **Huge problem:** no internet in areas where only a few people live
- ▶ **Solution:** high-altitude balloons to cast internet (project loon)



Workshop I

- 1. Find 3 huge problems
(in your city, country or in the world) to solve!**
- 2. What is the biggest of them?**

Time: 10 minutes

11:45 Results are presented and discussed in the plenum

Workshop I: Results

2. Pollution

3. Pollution

6. Pollution

8. Pollution

9. Pollution

12. Pollution

1. nCovid

4. nCovid

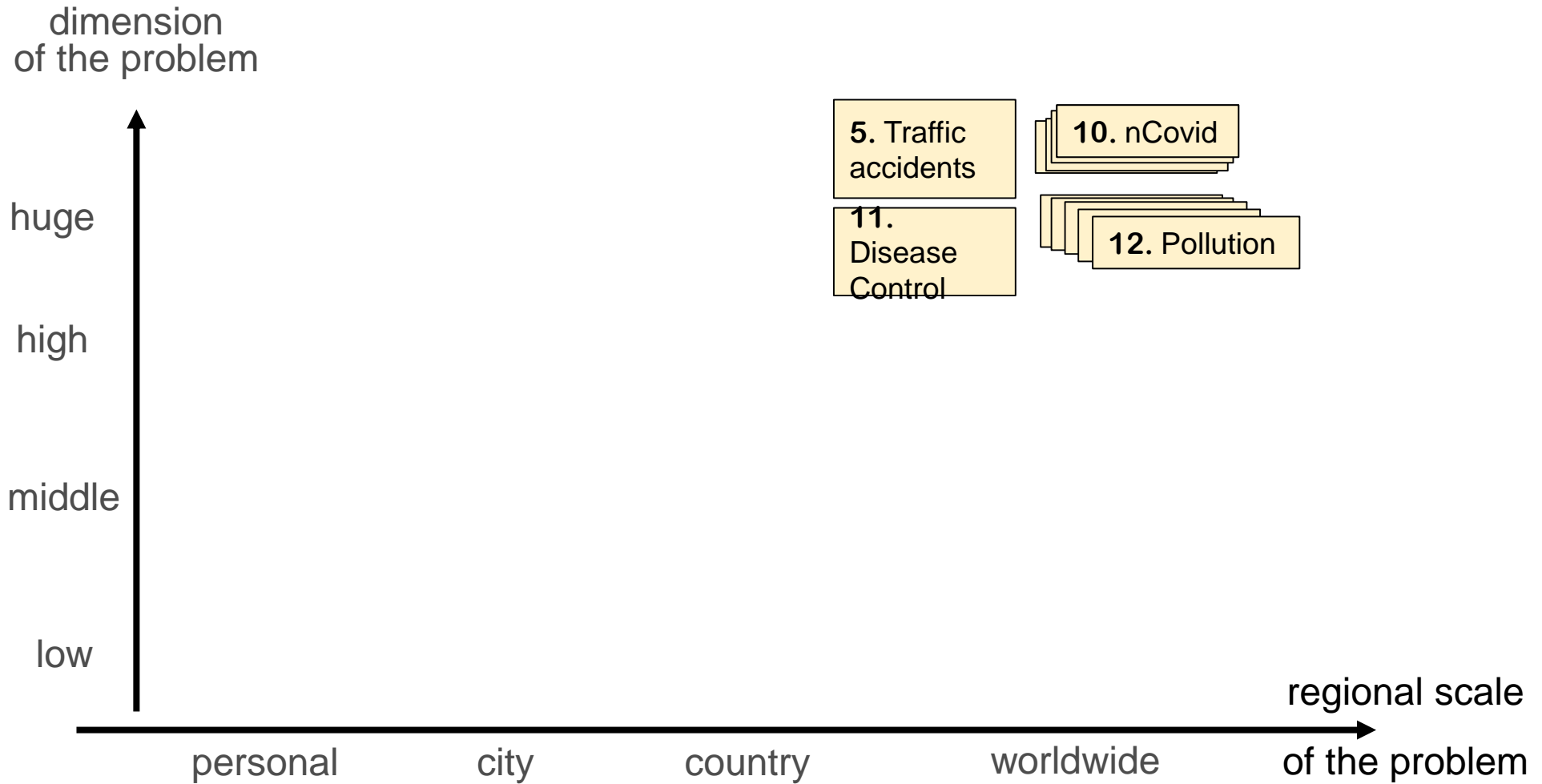
7. nCovid

10. nCovid

5. Traffic accidents

11. Disease Control

Workshop I: Results



Workshop II

Find a radical solution for the hugest (biggest) problem your team has recognized

Time: 15 minutes

Workshop II: Results

Team5 ([Hiếu Trần Thành](#)): Our biggest problem that my team has recognized is traffic accidents.

Most of the traffic accidents in Vietnam are made by drunk drivers and the lacking of awareness of road users. So we have a radical solution for that problem is increase the level of fines and actively propagate and educate people about the awareness when participating in traffic

Team #6 ([Kien162234](#)): The control of the emission of various contaminants into the environment which brings down the level of the pollution is done by various updated methods. The various technologies which control the pollution are Bioremediation laser methods, chemical methods, nanotechnology etc. Phytoremediation is a way to mitigate environment pollutions, such as in air, water and soil pollution in virtue of plants, more often than not, combined with their associated microorganisms. This concept has been widely applied to treat pollutants in soil and water. Vapour recovery is the process of recovering the vapours of gasoline or other fuels, so that they do not escape into the atmosphere.

Workshop II: Results

Team #4 **Tharika Gimhani**: Our biggest problem is nCovid .we think the best way we can do is that don't panic and stay calm while government manage the present situation. As well as be responsible people who follow all the safety precautions as instructions.

Team #10 **Van Sy Le**: Today, nCovid disease is happening complicatedly. Along with that is the fear of people who do not dare to face this disease. We have come up with some disarmament to help people feel more comfortable with disease prevention and treatment.

#team 3 **Dung Chan**: Our biggest problem is nCovid. Radical solution for covid-19: seft-isolate at home , using dry handwashing and medical mask . contact the healthcare center if you feel sick or come from place have people infected. Keep ourself save is a effective way to keep our country save

TEAM #8 **Phuc Pham 20176656**: The biggest problem of my team is air polution. And we also found a radical solution: AIR PURIFIER FOR THE TREE. This method is about creating a new device which can improve the function of tree

Workshop II: Results

Trinh Thành

Team #11: Our biggest problem is disease control. we thinks all the people need follow the information of government and if have any signal or feeling not good, they should call the doctor and have an isolate method to control the disease.

Đặng Anh

Team #1: The critical problem of my team is Covid-19.

It has a very fast spread, so what we need the most is how we can reach the information about the disease as soon as possible. So that, I think that a **portal about the disease should be operated**, with the online ways for people to submit their situation to the government, so that they can control the disease and prevent it from spreading.

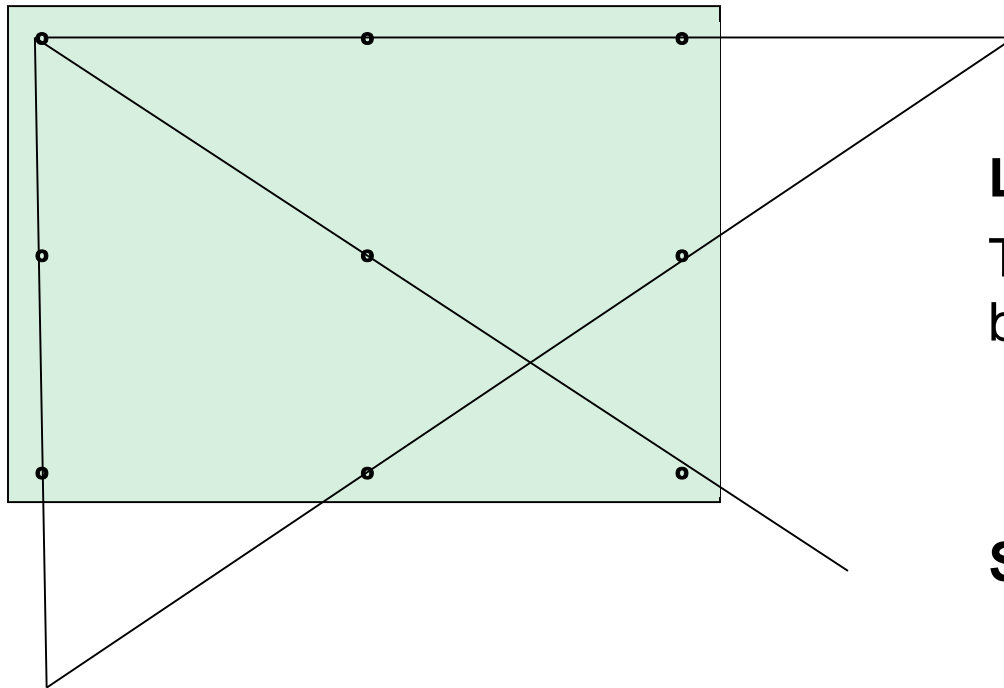
Cong Tran

Team #2: For our biggest problem which is sea pollution, we could have a long barrier around a central object such as a floating tank. The barrier has a solid "perimeter" which block the trashes but not gets the fishes stuck. The trashes will be collected by people and recycled.

1.5 CREATIVITY TECHNIQUES

9-Point Problem

- ▶ **Problem:** How can you combine the 9 points with 4 straight lines without dropping the pencil?



Limits are in the head

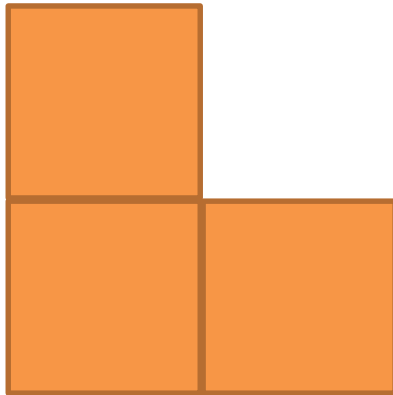
The strokes are limited
by the square

**Solution: Avoid the self-set
limits in your mind**

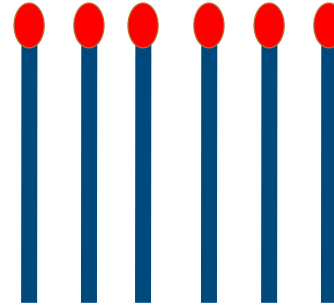
- ▶ Creativity by overcoming self-set limits

Additional tasks

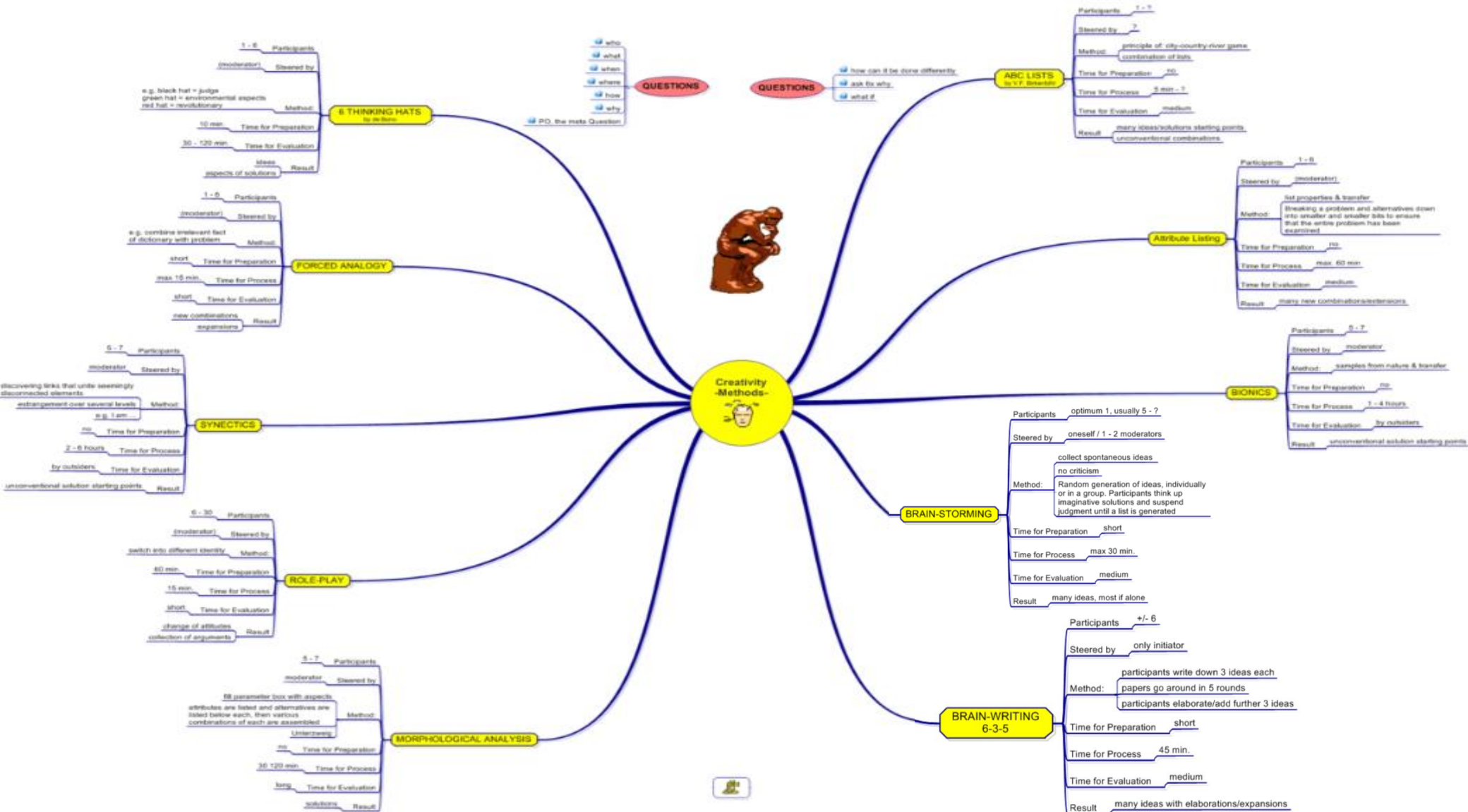
1. Decompose the L-shaped area in 4 areas of the same size



2. Form 4 equilateral triangles with the 6 matches



Creativity Techniques (Overview)

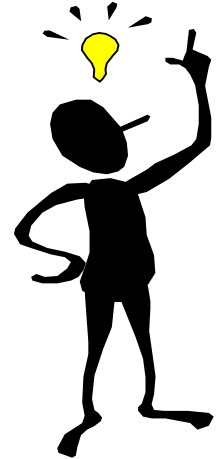


Brainstorming

First and well-known creativity method (Osborn, 1957)

Rules

- **Focus on quantity**
“The best way to get a good idea is to create a lot of ideas.”
- **No criticism or validation of ideas**
- **Unusual ideas (lateral thinking!) are welcome**
- **Combine, mutate and improve ideas**
- **Documentation of results**



Procedure

- 4-8 participants + moderator/facilitator
- Board or flip chart for proposals
- Open, cosy atmosphere
- Idea generation: app. 15 – 20 minutes – then break
- Idea selection: app. 30 – 40 minutes



Brainstorming in the sense of “Moonshot Thinking”

- ▶ Try to imagine yourself in the future with the **ideal solution** . . .
 - ▶ Forget about technical feasibility

- ▶ **Remember:**
 - In the future, anything is possible
 - Dare to change the rules
 - Best solutions are sometimes contrary to conventional wisdom

Brainwriting (6-3-5 Method)

Written form of brainstorming (Prof. Bernd Rohrbach, 1968)

Procedure

- Each team member gets an idea-form with three boxes
- 6 participants write down
- 3 ideas and these ideas are written down
- 5 minutes apart
- Reading ideas and complementing them by 3 new ideas
- After 30 minutes: max. 108 ideas

Pro

- Solutions more sophisticated compared to brainstorming
- Critical ideas easier to write
- Active participation by all participants





















Brainwriting form



Brainwriting

Problem: Ideas for a Start-up



















Date: 09.03.2020

Participant	Idea 1	Idea 2	Idea 3
1.			
2.			
3.			
4.			
5.			
6.			

Example: Brainwriting

Problem: Ideas for a Start-up

Date: 09.03.2020

Participant	Idea 1	Idea 2	Idea 3
1.	 Idea 1.1	 Idea 1.2	 Idea 1.3
2.	 Idea 2.1 = improvement of Idea 1.1	 Idea 2.2 = a combination of Idea 1.2 + Idea 1.3	 Idea 2.3 = a new idea
3.			
4.			
5.			
6.			






Workshop: Brainwriting









Task: Develop ideas for a Start-up with your team

Problem: Ideas for Startups

Date: 09.03.2020

Participant	Idea 1	Idea 2	Idea 3
1.			
2.			

1. Download the Brain Writing template
2. Fill out the first line (5 minutes) and send the template to the next member of your team (x.1 → x.2, x.2 → x.3, x.3 → x.4, x.4 → x.5)
3. Fill out the second line (5 minutes) and send the template to the next member of your team (x.1 → x.2, x.2 → x.3, x.3 → x.4, x.4 → x.5)
4. Continue up to the template is complete

5.			
6.			

Mind Mapping



Visualisation technique (Buzan, 1974)

Example:



Source: <https://leadershipchamps.wordpress.com/project-management-mind-maps>

Homework: Task 1

Each team develops **3 ideas for digital Start-ups**

- ▶ Upload the solutions (**Team_x-Task_1.pptx**) to the portal
- ▶ Presentation by the project managers of day 1 tomorrow morning (Duration: < 3 min)

REALIZE YOUR DREAM

Projects 2017 and 2018

► 2017

1. Transport mobile app
2. AR Glasses
3. Dating app
4. Online School
5. Online Tutor Network
6. Dating website
7. Sport trainer network
8. Smarthome app

► 2018

1. EZtalk - Translating app
2. Traffic Management app
3. Laundry service tracking app
4. Food safety device and app
5. Remotely control household appliances
6. AUDIO BOOKS FOR BLIND PEOPLE
7. Job finding application
8. STREET VENDOR APPLICATION
9. Hotel Online for Backpackers
10. SMART HOME APP