

# Exercise #1

Introduction to Knowledge Management, WS2016

**Camilo Thorne**

(based on slides by T. Szyler and A. Melo)

Mannheim, 29.02.2016

# knowledge

A word cloud centered around the word 'organizational'. The word 'organizational' is the largest and most prominent. Other significant words include 'knowledge', 'achieving', 'effectively', 'capturing', 'sharing', 'approach', 'using', 'best', 'multi-disciplinary', 'developing', 'process', 'management', 'refers', 'objectives', and 'making'. The words are arranged in a horizontal, cloud-like shape, with varying colors and sizes.

achieving effectively capturing sharing approach using organizational best multi-disciplinary developing process management refers objectives making

1 Logistics

Exercise #1

# Organization

## Lab Assistant:

Camilo Thorne

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⇒ ask first for an appointment!

Lecture	Lab
17.02.16	
24.02.16	29.02.16 (KM)
02.03.16	07.03.16 (IR1)
09.03.16	14.03.16 (IR2)
16.03.16	<b>Easter</b>
<b>Easter</b>	04.04.16 (DM1)
06.04.16	11.04.16 (DM2)
13.04.16	18.04.16 (TM1)
20.04.16	25.04.16 (TM2)
27.04.16	02.05.16 (IE1)
04.05.16	09.05.16 (IE2)
11.05.16	16.05.16 (KR1)
18.05.16	23.05.16 (KR2)
25.05.16	30.05.16 (SNs)

# Communication

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- ▶ Declare lab group membership:  
[https://docs.google.com/spreadsheets/d/1IEa6\\_CUU6A7Zty5v-nobF6sncpF3-sZMNiy19QHx\\_vA/edit#gid=0](https://docs.google.com/spreadsheets/d/1IEa6_CUU6A7Zty5v-nobF6sncpF3-sZMNiy19QHx_vA/edit#gid=0)

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  - ▶ The **exam questions** will build upon the **assignment sheets**



# Submissions

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- ▶ Still... no plagiarism!



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**6 ECTS points**

**13 Lectures:**

**180 hours**

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12 Exercises & labs:

Preparation to lectures:

⇒ 12 exercise sheets:

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≡ 116.5 hours

111.5h/12 ≈ **9 hours** per sheet

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- ▶ conditional control structures
- ▶ loops and recursion
  
- ▶ opening/writing/closing files (I/O)
- ▶ programming languages: Java 1.6+ (and Python 2.4+)
- ▶ using APIs and libraries

# Well, I'm not Sure...

## Test yourself

Write a (Java/Python) program that prints to STDOUT integers from 1 to 100 (= 1 2 ... 100). Then, adapt it into a program that



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- ▶ for multiples of 5 prints "Buzz" (= 1 2 3 4 Buzz ... Buzz)
- ▶ for prime numbers prints "Wow" (= 1 Wow Wow 4 Wow 6 Wow 8 9 10  
Wow 12 ... 100)

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⇒ if you need more than 20 minutes to complete it, you should train your programming skills!

● Logistics

② Exercise #1

# Question 1: Terminology

## Question 1

A meteorological station is measuring wind speed, humidity and temperature along with a timestamp. Use the meteorological station as an example to explain the distinctions between each of these term pairs:

1. *Data & Information*
2. *Information & Knowledge*
3. *Knowledge & Wisdom*

## Data & Information

**Data** represents the reality in a way that it can be stored and processed.

**Information** can be seen as data w.r.t. a situation i.e., data with a context that enables it to be helpful. In short, information is data with a use case.

<b>Data</b>	$w = 7$
<b>Information</b>	Wind speed factor 7 yesterday evening in Munich

## Information & Knowledge

**Knowledge** is a systematic linking of information to gain statements that are generally true, such as the cognition of cause and effect.

<b>Information</b>	Wind speed factor 7 yesterday evening in Munich
<b>Knowledge</b>	Wind-speed factor 7 based on Beaufort means that whole trees are in motion

## Knowledge & Wisdom

**Wisdom** is the distillation of experience gained from the application of knowledge. It is based on long-term observation.

<b>Knowledge</b>	Wind-speed factor 7 based on Beaufort means that whole trees are in motion
<b>Wisdom</b>	There is a high possibility that the wind-speed factor raises to 8 if a humidity of 50 percent or higher is present.

## Question 2: Why Knowledge Management?

### Question 2.1

Explain what John Naisbitt meant when he said the following in 1982: “We’re drowning in information but starved for knowledge.”

### Question 2.2

Which key competitive advantages does a company that employs Knowledge Management have in comparison to a company that doesn't? Name at least 3.



## We're drowning in information but starved for knowledge

- ▶ Nowadays, the amount of information that is being created every day is continuously increasing everywhere.
- ▶ Companies are trying to gather more and more information in their databases, but the real problem lies in utilizing and handling this data in order to extract knowledge.
- ▶ Because there are no magical methods for successful knowledge extraction, a lot of the knowledge in the data might remain undiscovered.
- ▶ Knowledge Management will become more and more important, and success with the extraction process will influence corporate outlook and profitability.

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## Possible competitive advantages

1. **Improved customer relationships/loyalty:** customer needs and demands can be handled easier with an integrated flow of information—leading to greater user satisfaction and loyalty.
2. **Increased productivity:** knowledge is available more quickly and easily.
3. **Reduced costs:** we don't need to reinvent the wheel for each project—information and knowledge can be reused and improved resulting in faster and cheaper projects.
4. **Adaptability:** faster reaction and interpretation of events based on new information.

## Question 3: Knowledge Distribution Factors

### Question 3.1

Which of the following factors **facilitate knowledge sharing** and which **hinder** it? If you are in doubt, give an explanation for your decision!

*power, independence, curiosity, recognition, idealism, social relations, position, revengefulness, introversion, empathy*

### Question 3.2

Think of actions a company could adopt to **minimize the negative** and/or **maximize the positive effects** of a factor. The overall goal being to optimize the amount of shared knowledge within the organization.

For (at least) 4 of the knowledge distribution factors discussed propose an improvement and explain how it minimizes the negative effect or maximizes the positive effect.

## Question 3 - Part 1: Hindering Factors

Factor	Reason
Power	Knowledge is power. To stay at the top it is useful to keep knowledge away from competitors
Recognition	Recognition rises if you are <b>the</b> person to be asked for information (short term strategy)
Social relations	Why should anyone share knowledge with unpopular colleagues?
Position	Secure unique positions – like being the only expert for a system – by keeping knowledge for yourself
Revengefulness	<i>Haters gonna hate...</i>
Introversion	May not be eager to meet new people that may know interesting things

## Question 3 - Part 1: Facilitating Factors

<b>Factor</b>	<b>Reason</b>
Independence	Share knowledge to avoid being the only expert for a topic and thus being bound to it. Learn from others to be more independent from them
Curiosity	I want to know stuff from other people so its likely that I share my knowledge with them along the way
Recognition	Being the one deliberately sharing knowledge results in good recognition on the long run (long term strategy)
Idealism	working for the greater good (of the company) means sharing your knowledge with your fellow workers
Empathy	Someone who understands what a colleague is thinking is able to explain things better for him/her

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## Question 3 - Part 2: Minimize Hindering Factors

1. **Power:** create your company structure as a well connected network: no node should be so important that his/her failure impacts the complete structure.
2. **Position:** promote employees that care to share knowledge.
3. **Introversion:** make it easy for people to connect.
4. **Revengefulness:** if the management gets aware of tensions it should intervene (settle a dispute, assign different tasks etc.)



### Question 3 - Part 2: Maximize Facilitating Factors

5. **Recognition:** offer incentives for people that share knowledge.
6. **Curiosity:** give employees freedom and resources to satisfy their curiosity.
7. **Empathy:** foment employees cohesion with, e.g., team building events.



**Thank You!**