




Personal sticker



S5109

**Compliance to the code of conduct**

I hereby assure that I solve and submit this exam myself under my own name by only using the allowed tools listed below.

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Signature or full name if no pen input available

## Information and Knowledge Management

**Exam:** IN2105 / Endterm

**Date:** Friday 19<sup>th</sup> February, 2021

**Examiner:** Prof. Dr. Helmut Krcmar

**Time:** 08:00 – 09:30

	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
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Notes \_\_\_\_\_







# Endterm

## Information and Knowledge Management

Prof. Dr. Helmut Krcmar  
Chair of Information Systems  
Department of Informatics  
Technical University of Munich

**Friday 19<sup>th</sup> February, 2021**  
**08:00 – 09:30**

### Working instructions

- This exam consists of **18 pages** with a total of **9 problems**.  
Please make sure now that you received a complete copy of the exam.
- The total amount of achievable credits in this exam is 90 credits.
- Detaching pages from the exam is prohibited.
- Allowed resources:
  - one **non-programmable pocket calculator**
  - one **analog dictionary** English ↔ native language
  - the **lecture slides, your notes, the book (Krcmar, 2015) and other recommended literature**
- **Answers are only accepted if the solution approach is documented.** Give a reason for each answer unless explicitly stated otherwise in the respective subproblem.
- If you print the exam, do not write with red or green colors nor use pencils.
- **No points will be awarded for merely naming or listing terms or definitions. Always provide reasons and complete reasoning.**





## Problem 1 Multiple choice (10 credits)

Each question will be awarded one credit. Each question only has one correct answer.

Mark correct answers with a cross



To undo a cross, completely fill out the answer option



To re-mark an option, use a human-readable marking



a) What is a core strategic process of knowledge management according to Probst et al. (2010)?

- ☐ Knowledge Usage
- ☐ Knowledge Sharing
- ☐ Knowledge Identification
- ☐ Knowledge Assessment

b) What is not a dimension of platform governance in an app store according to Tiwana (2014)?

- ☐ Marketing: ensure usage
- ☐ Control portfolio design: ensure integration
- ☐ Pricing: create incentives
- ☐ Decision rights partitioning: provide autonomy

c) Under which conditions does IT/IS create value?

- ☐ If IT/IS is not part of a business value creating process
- ☐ If customers ignore IT/IS-augmented services
- ☐ If business and IT/IS strategy do not fit
- ☐ If business and IT/IS strategy are aligned

d) According to Christensen et al. (2015), products and services resulting from disruptive innovations ...

- ☐ are more complex or more difficult to use
- ☐ overperform dominant ones along the dimensions historically most valued
- ☐ underperform in dimensions not valued as important before
- ☐ are cheaper for customers and provide lower margins for vendors

e) What is not an IT Controlling objective according to Krcmar (2015)?

- ☐ Strategic fit
- ☐ Process orientation
- ☐ Efficiency or adhere to deadlines
- ☐ Effectivity, quality and functionality

f) According to Krcmar (2015), strategic information systems...

- ☐ Avoid a decrease of your competitiveness
- ☐ Avoid an increase of your competitiveness
- ☐ Avoid an increase of your competitors' competitiveness
- ☐ Avoid a decrease of your competitors' competitiveness





g) Knowledge Management can fail because...

- ☐ People do not share knowledge
- ☐ People collaborate
- ☐ Technology is available
- ☐ People have too much time

h) What is not a category of risks presented in the lecture on risk management?

- ☐ unknown risks
- ☐ predictable risks
- ☐ known risks
- ☐ unpredictable risks

i) What is a boundary resource of digital platforms according to Ghazawneh and Henfridsson (2013)?

- ☐ Co-Creation
- ☐ Business Value
- ☐ Java
- ☐ Application programming interfaces (APIs)

j) The resource-based view according to Barney (1991) directly covers

- ☐ market position
- ☐ customers
- ☐ suppliers
- ☐ capabilities





## Problem 2 IT-enabled Strategies and Business-IT alignment (15.5 credits)

You are working for HouseScout48, Germany's biggest online platform for real estate. From the advertising marketplace in its early days, it has developed into the leading online marketplace for real estate. The platform integrates more and more services and products that offer high added value for all market players: This ranges from the search to the move. It provides support for landlords as well as for selling apartments, houses and commercial properties.

Currently, the company struggles with shrinking profit and slower growth. Since you demonstrated knowledge in both technology and strategy, the management board asks you to develop a digital business strategy that enables future growth.

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a) *Knowledge and understanding: 7,5 credits*

The CIO (Chief Information Officer) is particularly criticized. He argues that the IT department has always done what the business has asked. Knowing that IT is critical to business value, you sit down with him to discuss the IT strategy. You created a list of ideas, how the IT department can create organizational benefit. Present five IT-potentials and their organizational benefit (0,5 credits each). Give examples how each potential helps the business of HouseScout48 (1 credit each).





b) *Knowledge and understanding: 2 credits*

He repeats his argument, that all requests by the business were fulfilled. The CEO told you, that the IT department is not innovating. Explain the concept of strategic alignment (1 credit). Explain the two-way relationship between corporate strategy and information systems (1 credit).

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c) *Knowledge and understanding: 6 credits*  
Also explain the six alignment relationships in the IT-Alignment Model by Reyonolds and Yetton (2015).  
**Hint:** Remember that simply naming the relationship is not enough, but explain how the relationships work both ways.







**Problem 3** Information and Knowledge Management (11 credits)

a) *Application and analysis: 2 credits*

You propose to establish an effective knowledge management. Explain how (1 credit) and why (1 credit) knowledge and strategy must align.

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b) *Discuss and evaluate: 3 credits*

Link the knowledge-strategy alignment to the previously explained business-IT alignment. Provide three valid arguments why both go hand in hand.

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c) *Application and analysis: 6 credits*


Propose three tools or means for effective knowledge management (0,5 credits each). Explain which knowledge management process they serve (0,5 credits each) and how they may contribute to a better **business-IT alignment**. (1 credits each)





a) *Knowledge and understanding: 3 credits*

A diagram showing a 4x2 grid of squares. The rows are labeled 0, 1, 2, and 3 on the right side. The grid is composed of two columns and four rows.



A 5x2 grid of squares. To the right of the grid, the indices 0, 1, 2, 3, and 4 are listed vertically, corresponding to the rows of the grid.

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Date of Birth	
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Referral Information	
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Insurance Company	
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Group Number	
Effective Date	
Medical History	
Presenting Complaint	
History of Present Illness	
Past Medical History	
Surgical History	
Family History	
Social History	
Review of Systems	
Physical Examination	
Vital Signs	
General	
HEENT	
Cardiovascular	
Respiratory	
Gastrointestinal	
Genitourinary	
Neurological	
Musculoskeletal	
Skin	
Laboratory and Diagnostic Tests	
Complete Blood Count	
Basic Metabolic Panel	
Urea Nitrogen	
Creatinine	
Electrolytes	
Urinalysis	
Chest X-ray	
ECG	
Imaging Studies	
Treatment Plan	
Medications	
Procedures	
Follow-up	
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Nurse Signature	
Nurse Name	
Nurse Title	
Nurse License	
Patient Signature	
Patient Name	
Patient Title	
Patient License	





## Problem 5 IT Governance (9 credits)

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a) *Application and analysis: 3 credits*

When discussing the future IT project portfolio, a discussion between the CIO, CEO, and CFO starts about who has the decision right. Obviously, there is no IT governance in place. Explain what IT governance is (1 credit), why it is needed (1 credit) and how it helps to achieve business value from IT (1 credit).

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b) *Discuss and evaluate: 6 credits*

After you explained, that IT governance included the management of IT related risks, the CEO proudly argues that risk management is not needed, since no project ever failed. Inspired by your LinkedIn feed you reply: "*If projects are not failing, we are not innovating enough*".

Present three arguments how innovation and risk management go hand in hand or support each other. You can use different types of risks and different types of innovations in your arguments. (2 credits each).





**Problem 6 Disruptive Innovation (10 credits)**

Your argumentation was highly convincing. The CEO put you in charge of the new innovation project "*Disrupting Real Estate*". The CEO's vision is a digital business model leveraging artificial intelligence, blockchain, and virtual reality to disrupt the way real estate is sold. The goal is that based on few data points, HouseScout48 can calculate the value of a real estate objecte, post it on the digital platform and sell it using smart contracts.

*Discuss and evaluate: 10 credits*

Discuss if this business model is a disruptive innovation and decide whether it is a disruptive innovation or not. Use all of Christensen's (1997) criteria (1 credit per criterion with explanation if it is fulfilled or not; 1 credit for a final decision). If you make assumptions, e. g. about the market, state them in your argumentation.

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## Problem 7 DELD - Strategic Information Systems (10 credits)

Congratulations - After the rescue of HouseScout48, DELD a large discount grocery store made you an offer you couldn't refuse. DELD is currently undergoing a major transformation project. The aim is to reduce food waste by introducing a digital platform. The platform connects all DELD stores and warehouses, which operate as separate legal entities, knows item quantities in the warehouses and their individual expiration dates. Customers of the platform (private consumers, restaurants, bars, etc.) can buy food that is close to its expiration date or has just expired at reduced prices and have it delivered to their homes/restaurants/bars. This transformation consists of multiple projects and you are the portfolio manager, reporting directly to the supervisory board.

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- 1 Media reaction and feedback from your customers show a high level of support and enthusiasm for your project. You start your first day by analyzing the fundamental strategy. You wonder if the digital platform can be considered a strategic information system (SIS).
- 2 **If you argue that it is a SIS**, discuss in which system category for SIS according to Krcmar (2015) the platform fits and why it does not fit the other three (1 credit per discussed category). Find examples for all categories (0,5 credit each).
- 3 **If you argue that it is not a SIS**, discuss why it does not fit into either category and find examples of all four categories.
- 4
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b) *Application and analysis: 4 credits*

Use McFarlan's strategic grid to determine the impact of the digital platform on the business strategy. Explain all four types and discuss for each whether or not the digital platform fits that type.

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A diagram showing a 4x2 grid of squares. The rows are labeled on the left as 0, 1, 2, and 3. The grid is composed of two columns and four rows.

Classify all three business models of DELD according to the four types of IT-associated business models by Steininger (2019) and explain your classification (1 credit each).

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Based on your previous classifications, would you consider the introduction of DELD's digital platform to reduce food waste a business model innovation according to the definition of Gassmann et al. (2014)? Explain your decision using all four elements of the magic triangle (1 credit per element; 1 credit for the decision with reason).







## Problem 9 DELD - Digital Platforms (9 credits)

You learned that DELD stores are franchises, meaning each store is acting as separate legal entities, and mostly independent from the DELD headquarter. Each store can decide on their own, if it wants to participate in the digital platform to reduce food waste.

a) *Knowledge and understanding: 3 credits*

What kind of network effects are in place in this scenario (1 credit)? Explain why and how these network effects are beneficial for the platform (2 credits).

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b) *Knowledge and understanding: 4 credits*

The independence of the stores also creates platform-related competition. Additionally the amount of groceries offered on the platform is limited. Name and explain what kinds of platform competition occur in the retail ecosystem.

**Hint:** LODI, DELD's biggest competitor launched a similar platform recently.

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c) *Discuss and evaluate: 2 credits*

For DELD's digital platform, give an example of what might be a boundary resource for store owners (1 credit).  
Explain how it would work as a boundary resource (1 credit).



**Additional space for solutions—clearly mark the (sub)problem your answers are related to and strike out invalid solutions.**

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, light gray lines. The grid covers the entire area of the page, leaving no margins or other markings. There are 20 columns and 20 rows of squares, creating a total of 400 square units.

