

Exercise
Business Informatics 2 (PWIN)
Summer Term 2011

Exercise II:
Information Systems III &
Communication Systems

The InstantONS scenario is required in order to solve some of the exercises. It can be found in a separate document.

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Exercise 1: Mobile Device Characteristics

- Name three characteristics specific to mobile devices.
- How can one summarise the situation for the InstantONS provider?
- What technological means exist to alleviate situation for the InstantONS provider?

Exercise 2: SIM Card

- Name a central function of the SIM card with regard to mobile communications.
- From which function of the SIM card can the InstantONS service benefit in terms of user personalisation?

Exercise 3: Functions of a Mobile Operating System

- Security functions are one category of mobile operating system functionality. Name two more categories and explain their purpose.
- Why is specifically security important for the InstantONS service and its users?

Exercise 4: Mobile Apps vs. Mobile Web Apps

- Name two significant differences between Mobile Apps and Mobile Web Apps.
- What would be the benefits / drawbacks of offering the InstantONS service as a Mobile App?
- Considering your answer in b), what kind of application type would you recommend to the InstantONS service provider?

Exercise 5: App Markets

- Describe the characteristics of two-sided markets with regard to mobile apps markets. What are the differences of the *Apple App Store* and the *Google Android Market* with regard to the business strategy of each company?
- From which specific characteristics benefit two-sided markets? What are their weaknesses?
- Assuming the current market for Mobile Apps will resolve into a market of Mobile Web Apps. What are the consequences for Google, Apple & Co. as market operators? Do they need to align their business strategy in order to maintain their current revenues?

Exercise 6: Mobile Marketing

- Name three benefits of Mobile Marketing, which are based on the unique characteristics of mobile data communications.
- What are the benefits of available context information about mobile users (i.e. current location, identity and time) for the InstantONS service?
- Discuss the availability of context information in field of conflict between personalisation and privacy for/of mobile users of the InstantONS service.

Exercise 7: Layer-based Communication Models

- What is the reason for the development of layer-based communications?
- How does layer-based communication work in principal?

Exercise 8: Network Layer: Routing

- The main task of the Network Layer constitutes *routing*. In this regard, describe the basic concept of the *Dijkstra algorithm* as one important approach in this context.
- Assume when using the InstantONS service, a text message to your dating partner has to be passed through various systems before it is able to reach its destination. Since it is critical to reach your beloved in time, calculate the shortest path (from Person “a” to Person “z”) based on the *Dijkstra algorithm*.

Please note that lower case letters denote *system vertices* and numbers the *milliseconds* it takes for a message to travel between two vertices.

