mobile business

Exercise 1 – Location Based Services

Mobile Business II (SS 2023)

Dr. Ahad Niknia

Chair of Mobile Business and Multilateral Security
Johann Wolfgang Goethe-Universität Frankfurt a. M.

Agenda

- Digital maps and their usage
- Mobile communities and LBS
- Travel services

- Your participation ☺

mobile business

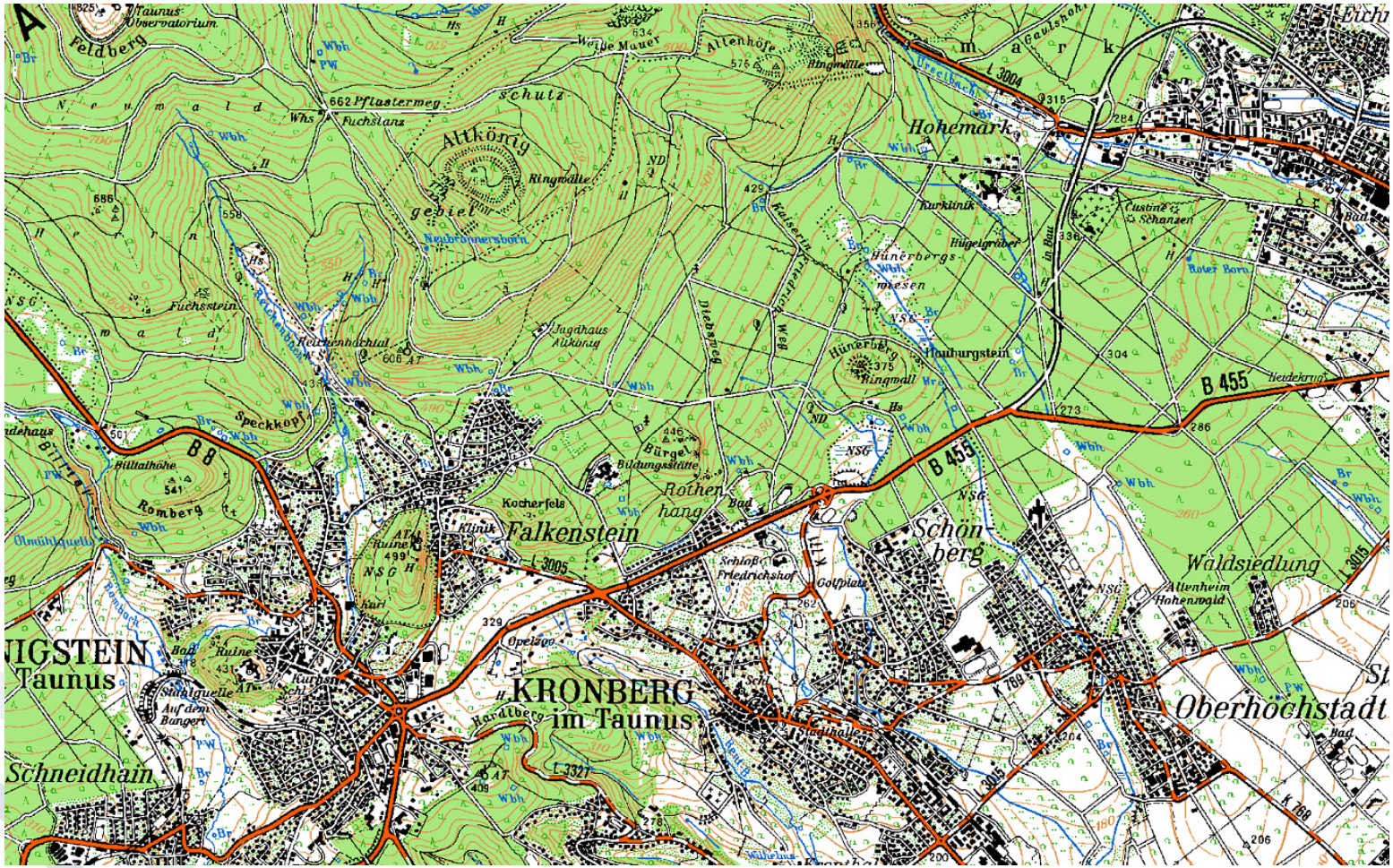
Exercise I

Look at the following maps and briefly answer the three questions for each of them.

1. **Purpose:** What is the purpose this map can be used for?
2. **Usefulness for orientation:** Does this map help you to ride a bicycle from Königstein to Kronberg?
3. **Decision support:** Will this map help you to evaluate whether a particular street is a nice place to live in?

mobile business

Map 1:Topographic map



...

Map 1: Topographic map (2)

1. **What is the purpose this map can be used for?**

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 1: Topographic map (2)

1. **What is the purpose this map can be used for?**
   - Get an overview of the terrain
   - Height differences
   - Geographical details
   - The area where a certain town is located

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 1: Topographic map (2)

1. **What is the purpose this map can be used for?**
   - Get an overview of the terrain
   - Height differences
   - Geographical details
   - The area where a certain town is located

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - Yes, since all the roads are shown.

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 1: Topographic map (2)

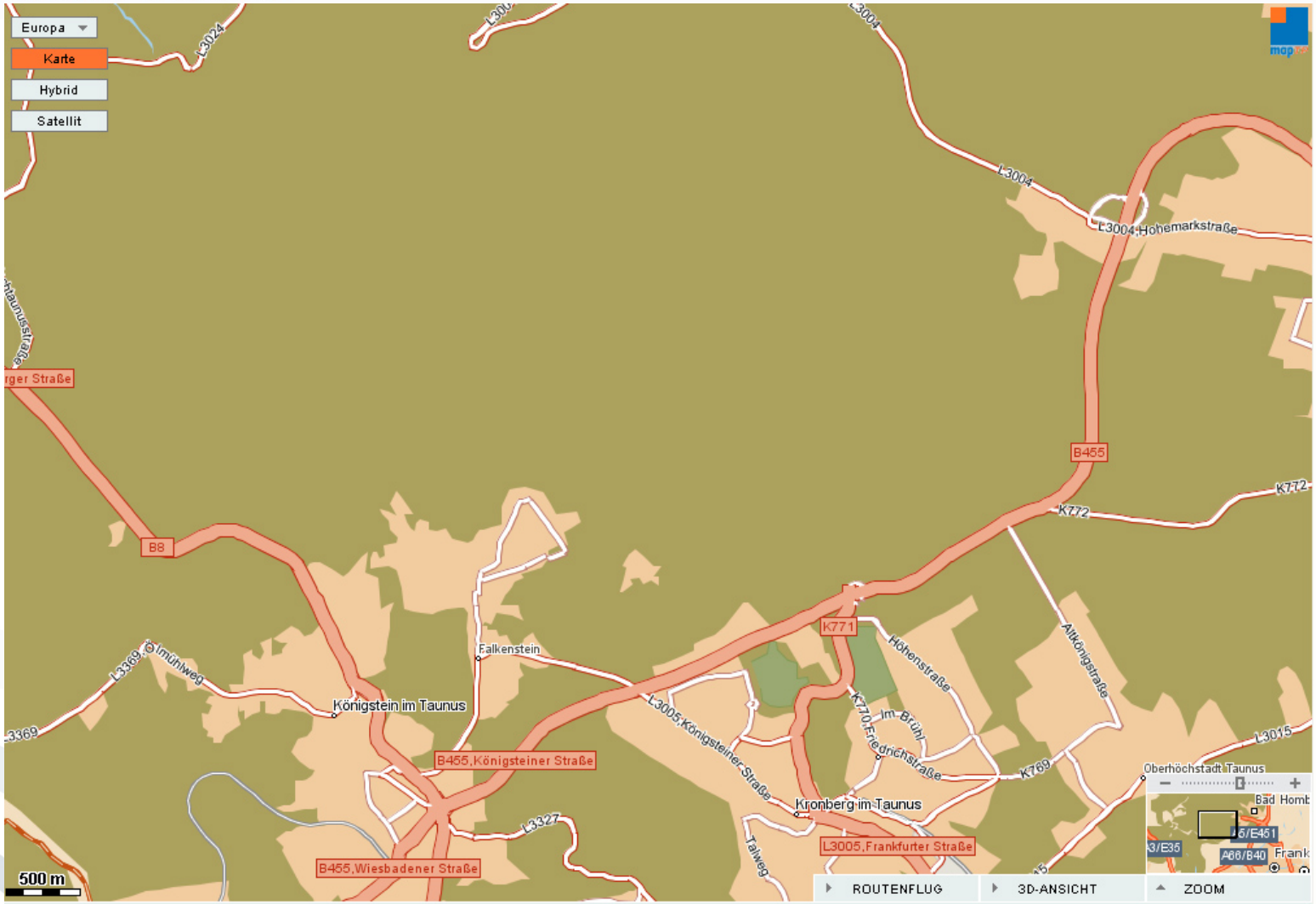
1. **What is the purpose this map can be used for?**
   - Get an overview of the terrain
   - Height differences
   - Geographical details
   - The area where a certain town is located

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - Yes, since all the roads are shown.

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**
   - One can only partly see what in the surrounding area is but no precise details.

mobile business

Map 2: Street-map view



Map 2: Street-map view

1. **What is the purpose this map can be used for?**

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 2: Street-map view

1. **What is the purpose this map can be used for?**
   - Car navigation
   - The most important streets and distances are shown.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 2: Street-map view

1. **What is the purpose this map can be used for?**
   - Car navigation
   - The most important streets and distances are shown.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - Only partly. The bigger roads are shown, but smaller connecting ways, which are available on a bike are not.

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

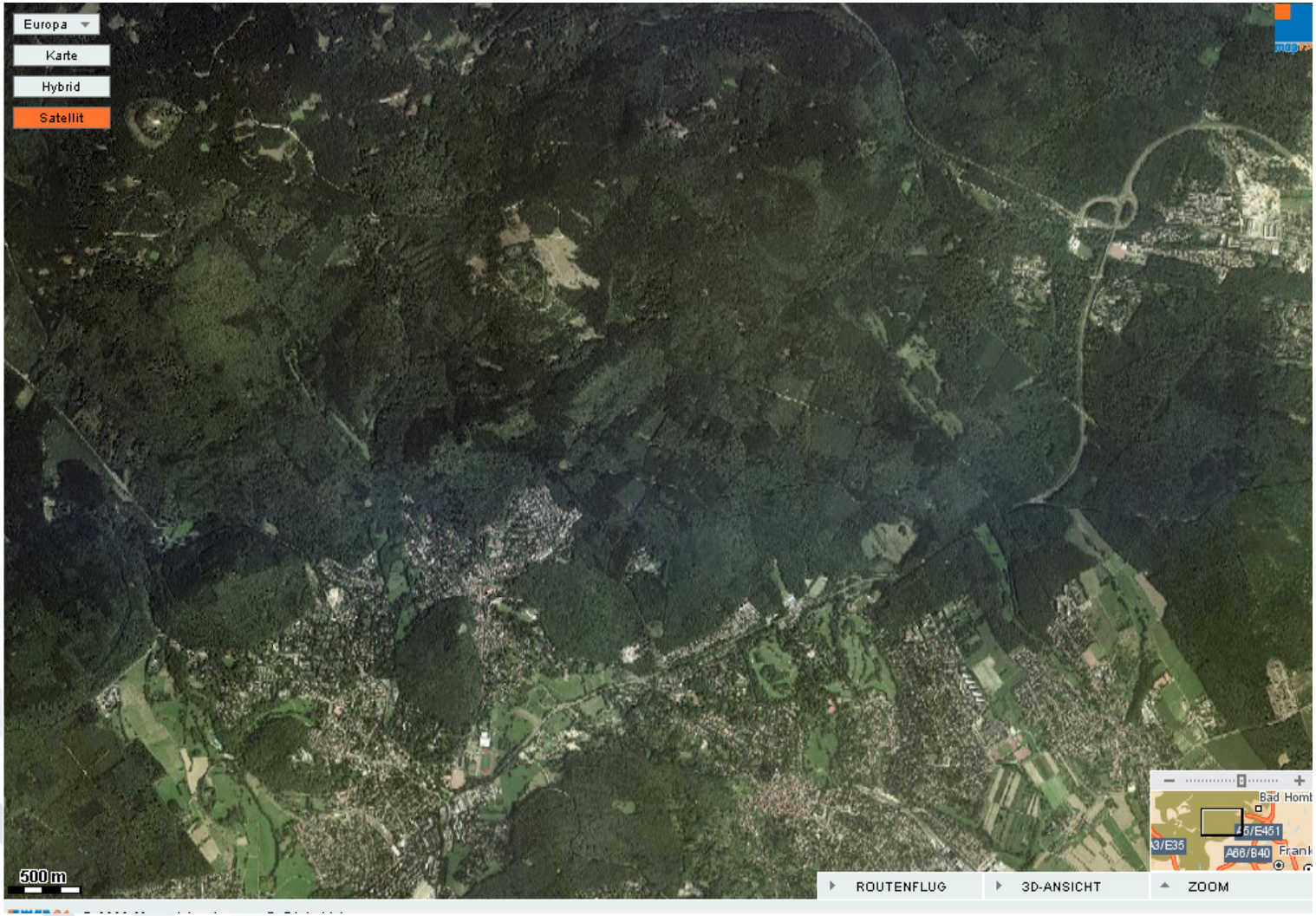
Map 2: Street-map view

1. **What is the purpose this map can be used for?**
   - Car navigation
   - The most important streets and distances are shown.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - Only partly. The bigger roads are shown, but smaller connecting ways, which are available on a bike are not.

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**
   - No, details missing, except for travelling (connecting) roads to the towns

Map 3: Satellite view



Map 3: Satellite view

1. **What is the purpose this map can be used for?**

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 3: Satellite view

1. **What is the purpose this map can be used for?**
   - Satellite picture, more precise details about the area can be found.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 3: Satellite view

1. **What is the purpose this map can be used for?**
   - Satellite picture, more precise details about the area can be found.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - No, the roads are not shown. The streets can only partly be seen, but in the mountains they are hidden from the trees

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**

Map 3: Satellite view

1. **What is the purpose this map can be used for?**
   - Satellite picture, more precise details about the area can be found.

2. **Does this map help you to ride a bicycle from Königstein to Kronberg?**
   - No, the roads are not shown. The streets can only partly be seen, but in the mountains they are hidden from the trees

3. **Will this map help you to evaluate whether a particular street is a nice place to live in?**
   - Yes, depending on the possibility to zoom in and out, precise details can be recognized.

If you are planning to provide a LBS,

WHICH FACTORS ARE RELEVANT FOR YOU AS A SERVICE PROVIDER IN ORDER TO CHOOSE A POSITIONING METHOD FOR YOUR SERVICE?

Revenue and revenue models

Infrastructure for LBS

business model

Business relations

Architecture of the added value

If you are planning to provide a LBS,

WHICH FACTORS ARE RELEVANT FOR YOU AS A SERVICE PROVIDER IN ORDER TO CHOOSE A POSITIONING METHOD FOR YOUR SERVICE?

INFRASTRUCTURE FOR LBS

Infrastructure for LBS

Usually, we speak of variants of the following infrastructure:

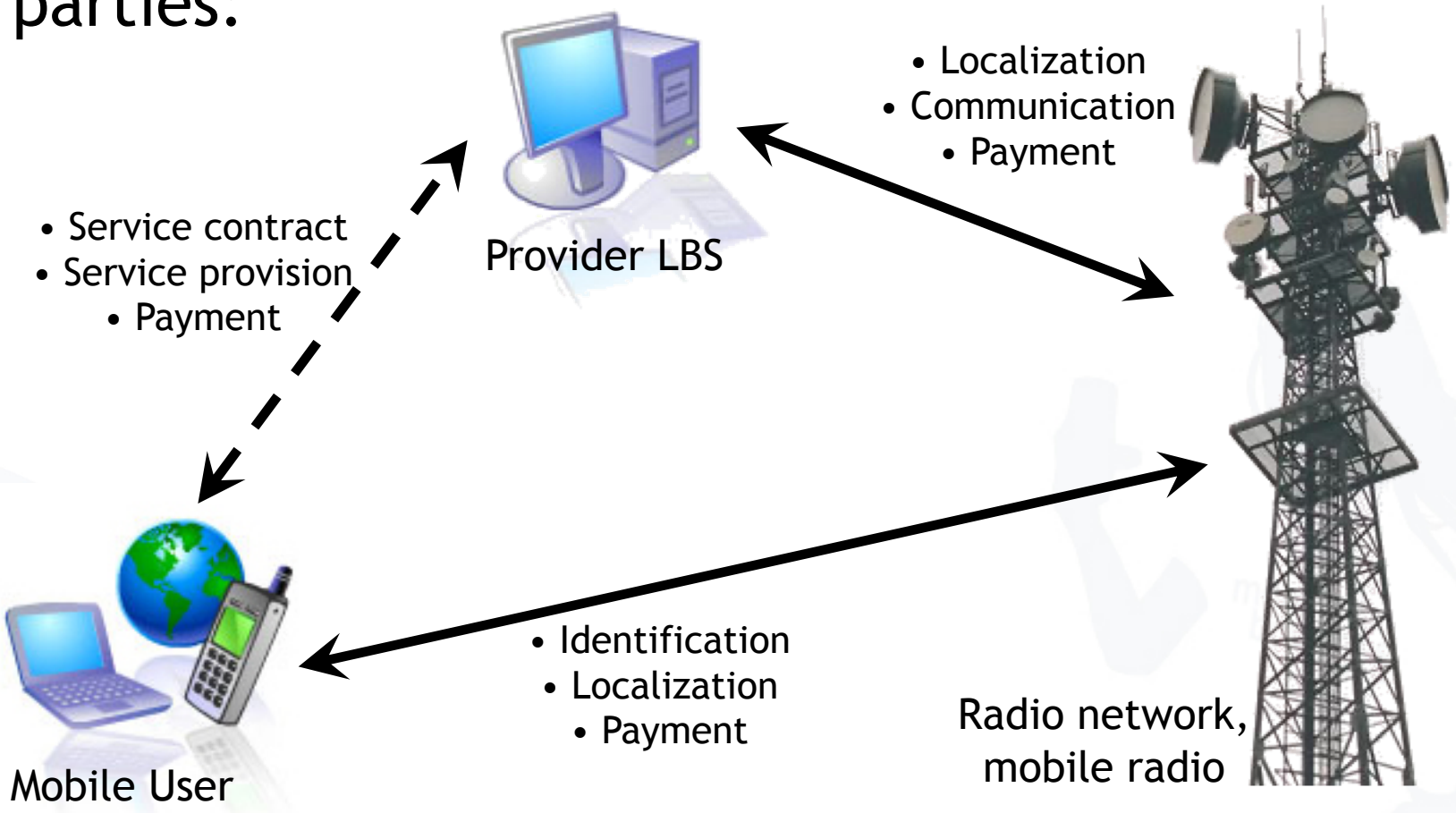
Provider of
a location-based application

Mobile User

Radio network,
mobile radio

Business relations

LBS require many relationships among involved parties:



Elements of a business model

(1) Value Proposition

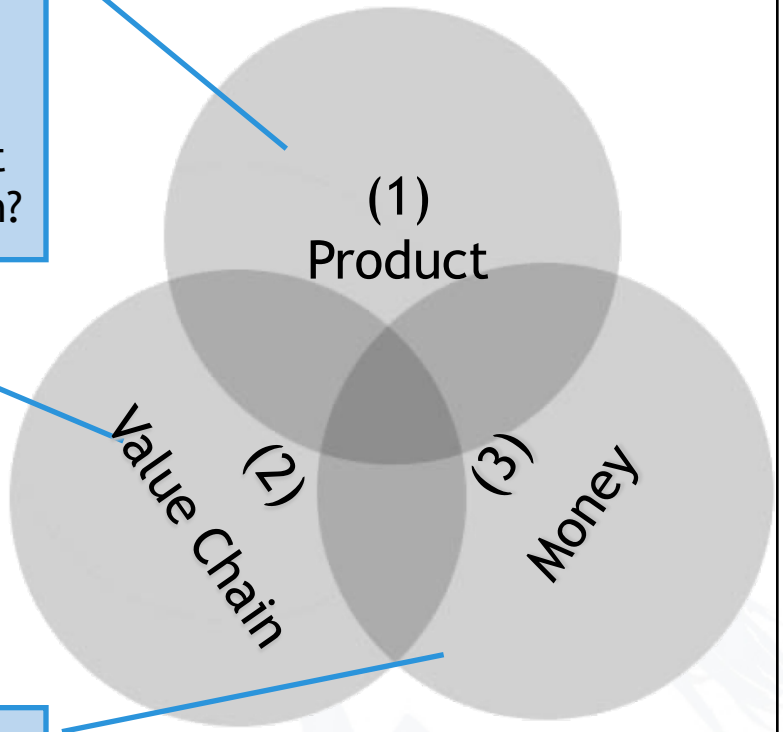
- How does the organisation benefit customers and partners?
- What are the advantages of players that are in relationship with the organisation?

(2) Architecture of added value

- How is the manufacturing of the output presented?
- In which configuration is the output produced?

(3) Revenue Model

- Which revenues will be generated from which sources?
- What are possible types and forms of revenue?

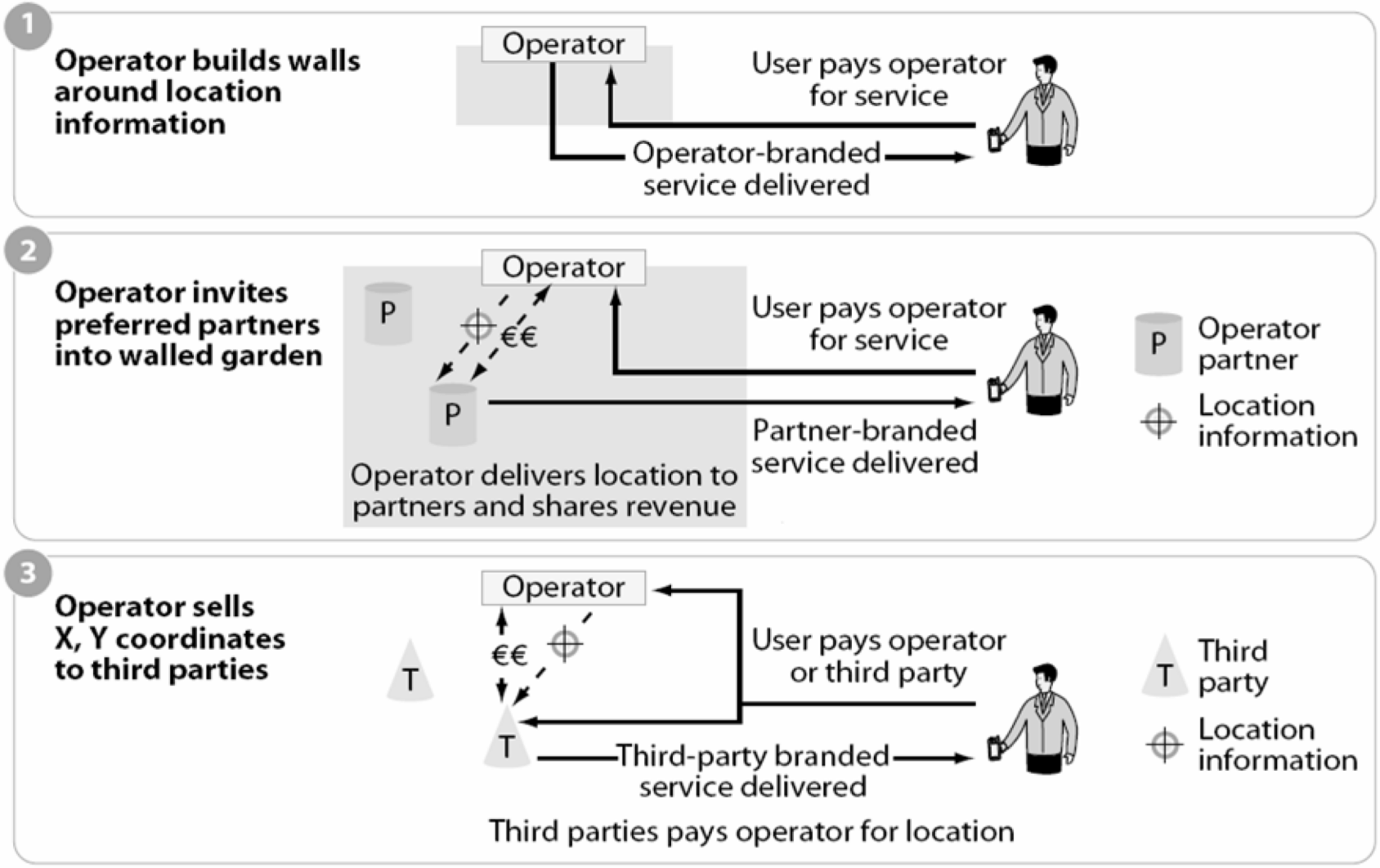


Revenue and revenue models

Revenue models			
Subscription	**Single transaction**	**Advertisements**	**Miscellaneous**

Revenue types				
Direct			**Indirect**	
Utilisation dependent	Utilisation independent		Via enterprise	Via state
	One-time	regular		
Single transaction depending on quantity or period of use	e.g. connec-tion fee	e.g. subscrip-tion, (broad-cast) fee	e.g. advertisement, commission	Subsidisation

Architecture of the added value



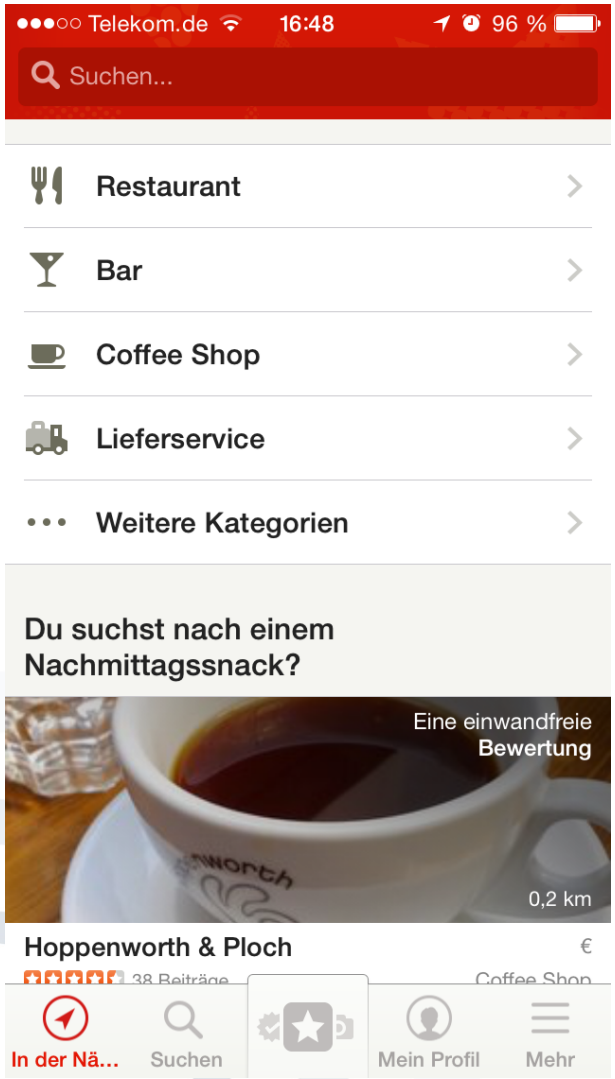
Source: Forrester Research, Inc.

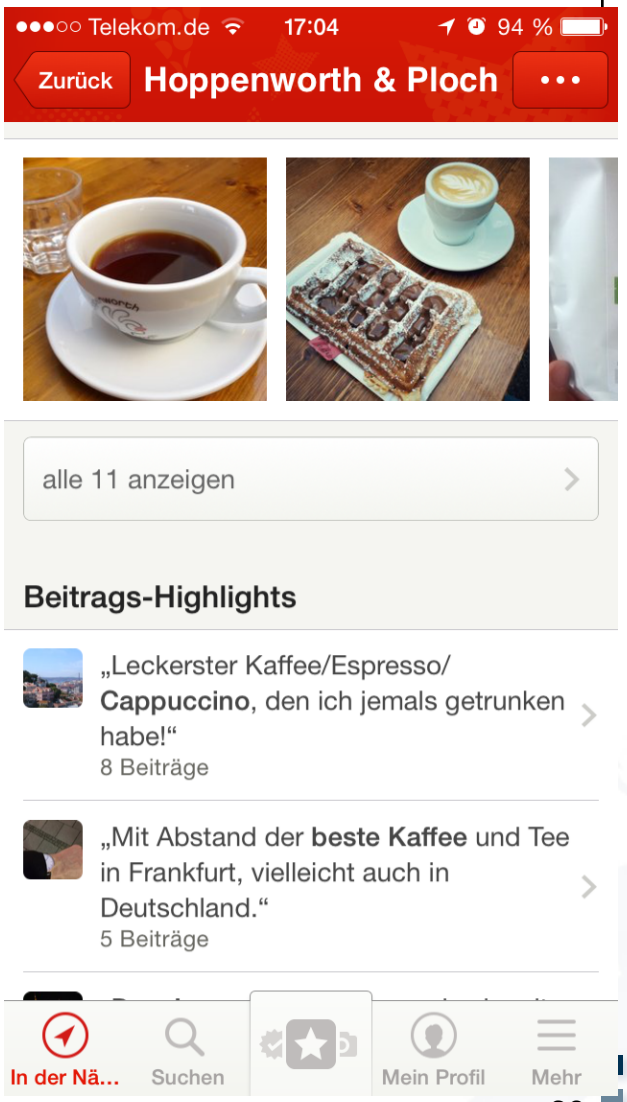
Exercise II

- Examples for mobile community platforms and travel apps
- Type of services
- Advantages
- Technology requirements for the users

mobile business

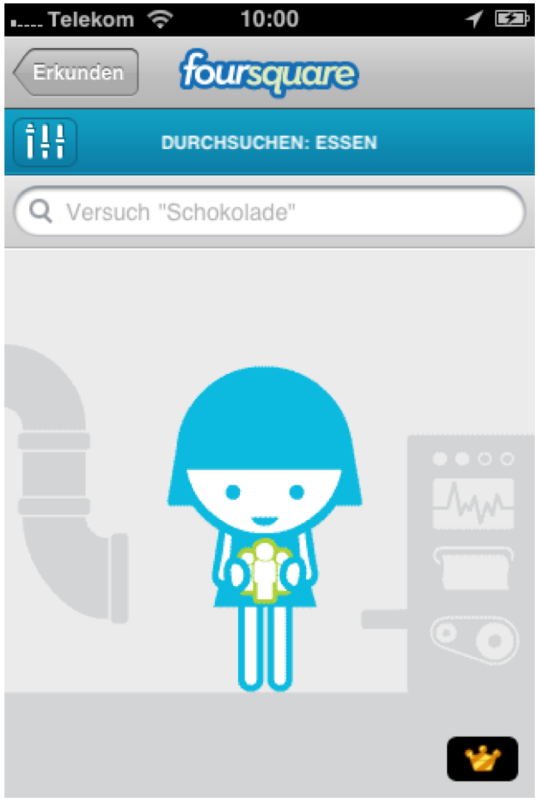
Example 1: Yelp

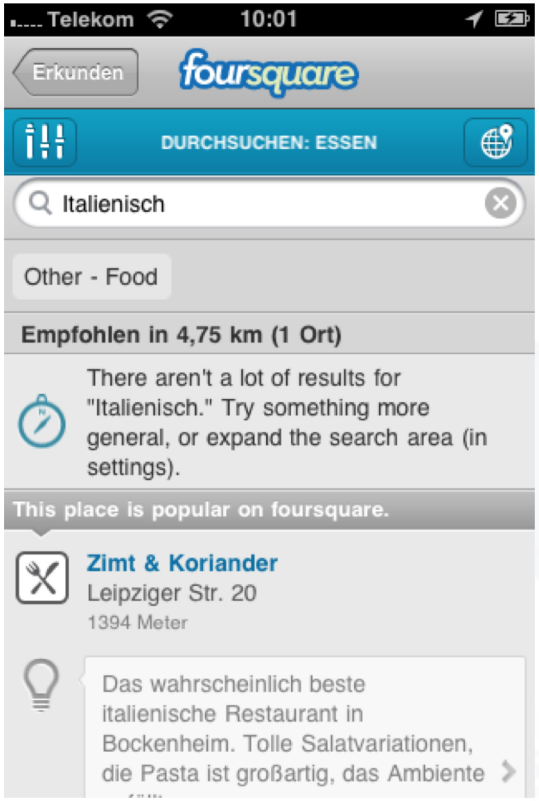




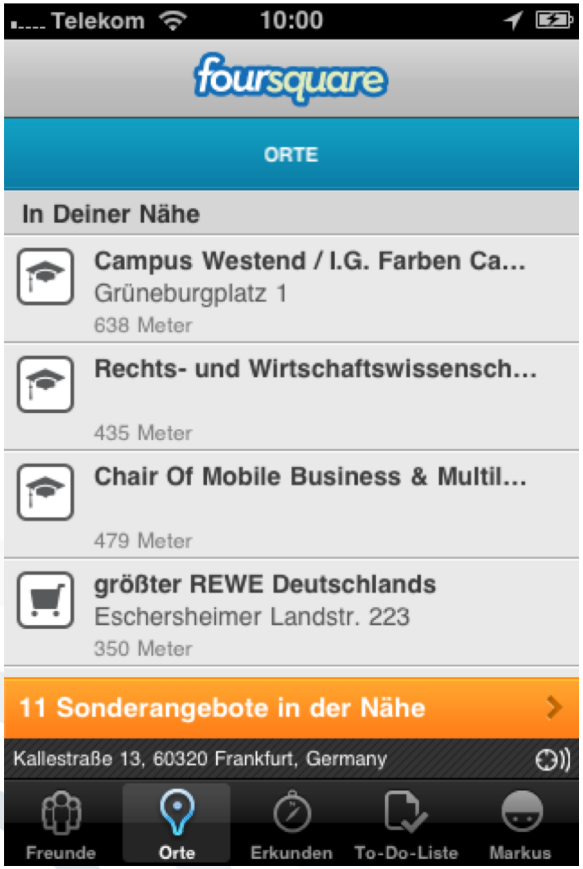
mobile business

Example 2: Foursquare
Find places arround you





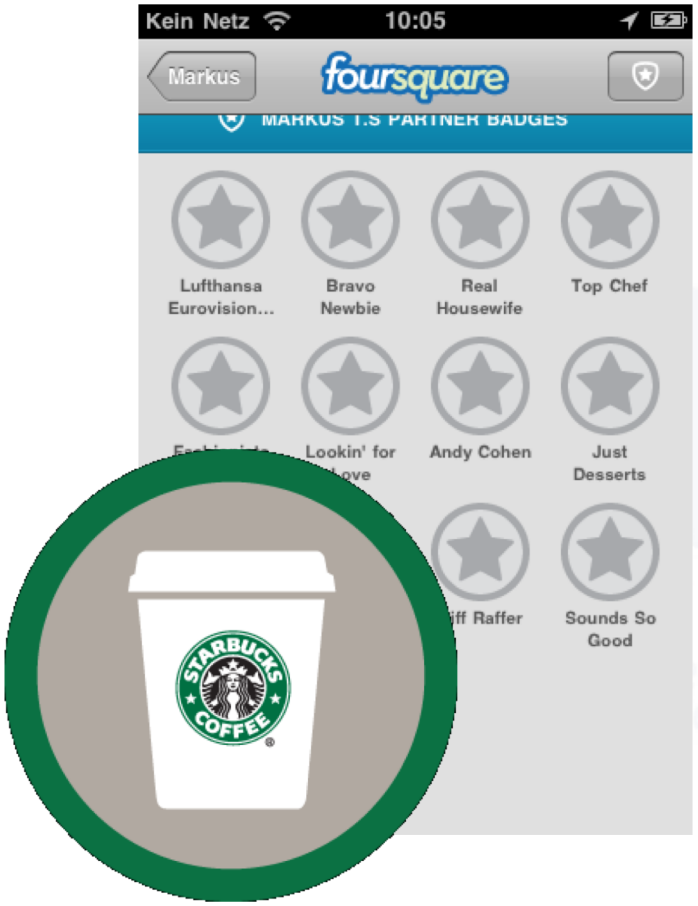
Example 2: Foursquare Check-In



Example 2 - Foursquare Gaming and Honor

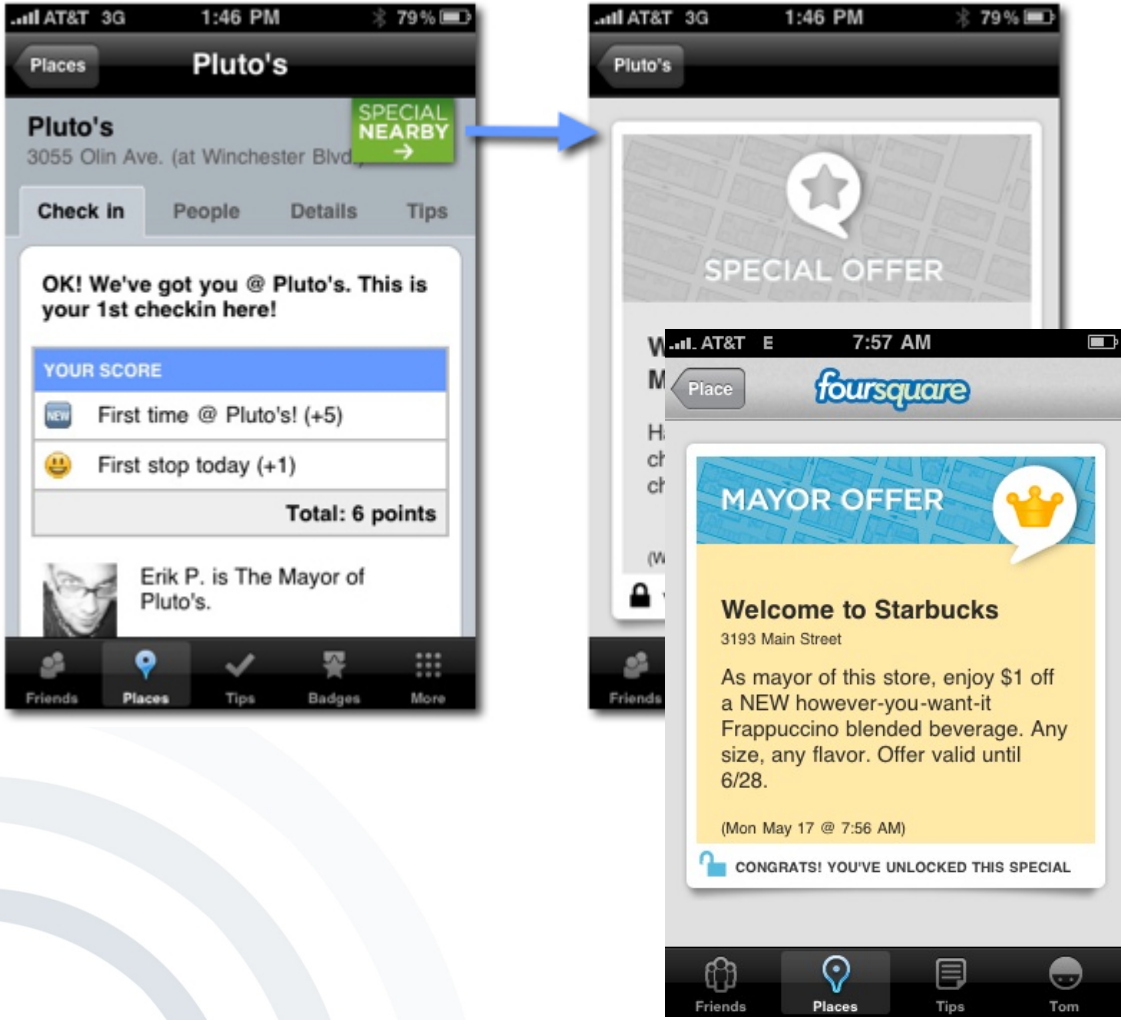
General Badges

Partner Badges



mobile business

Example 2 - Foursquare Special Offers



Mayor Special

Free drink with platter purchase.

Unlocked for the mayor

Check-In Special

Adam will get you a fresh beverage today during your session if you so choose!

Unlocked every check-in

Newbie Special

Thanks for checking in! Please show your checkin to our booth staff to receive a free gift.

Unlocked on your 1st check-in

Loyalty Special

Free Potato Pancake with every 3rd check in!

Unlocked every 3 check-ins

Special Offer

Buy any whole sandwich, wrap or salad and a drink, and receive a FREE slice of pumpkin cranberry cake!

Unlocked for some other condition

Example 3: Travel applications: Touch&Travel

https://www.youtube.com/watch?v=iF78QdCn_xQ

Example 3: Travel applications: Touch&Travel

- Additional info:
  - App installation on the phone
  - Support of the telecom operators
- Location can be determined by:
    - GPS
    - Barcode scan at the station
    - Registering the number of a touch point in the app
    - Reading the NFC tag at the station
- Check-in, check-out
- Pay at the end of the month

III: Travel applications: Touch&Travel

a) What are the advantages for the travellers?
b) What are the requirements of the travellers?
c) What are the advantages for D-Bahn?
d) What is the role of the network operators?

III: Travel applications: Touch&Travel

a) What are the advantages for the travellers?
   - Less stressful travel
     - Ticket on the spot
     - Smarter pricing – daily vs. one-way tickets
   - Travel now – pay later
   - Electronic receipt of the travel

b) What are the requirements for the travellers?
   - Smartphone with location capability or camera (QR code)
   - Registration (bank, address)
   - „Certain“ mobile operator
   - Mobile data (internet connectivity)

III: Travel applications: Touch&Travel

c) What are the advantages for DBahn?
- „Mobile and distributed“ terminals
- Less expenses for maintaining/installing ticket machines
- Less expenses – less personnel
- Potential additional customer data and travel profiles

d) The role of the network operators
- Determining the location of the phone
- Setting up the database of the stations/stops

mobile business

Questions

mob2@m-chair.de

Topographic map

- Topographic maps are a detailed record of a land area, giving geographic positions and elevations for both natural and man-made features. They show the shape of the land the mountains, valleys, and plains by means of brown contour lines (lines of equal elevation above sea level).

Back

[usgs2023]