

### Exercise 1 - Location Based Services

Mobile Business II (SS 2023)

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

Your participation ③



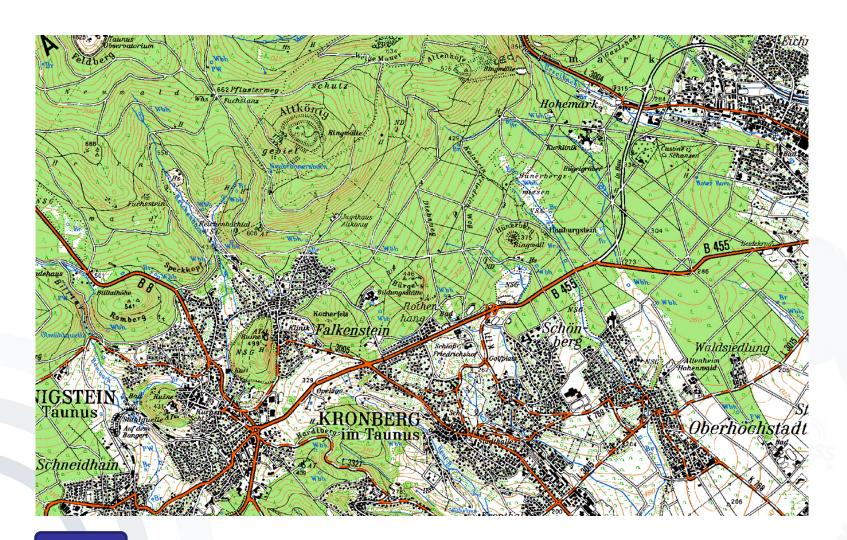


Look at the following maps and briefly answer the three questions for each of them.

- 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?

### Map 1:Topographic map

### mobile business





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)

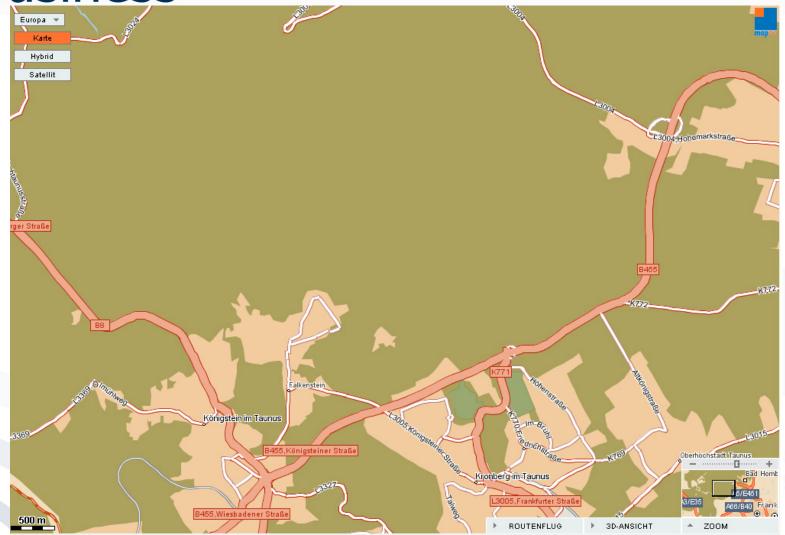
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  - Height differences
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  - The area where a certain town is located
- 2. Does this map help you to ride a bicycle from Königstein to Kronberg?
  - Yes, since all the roads are shown.
- 3. Will this map help you to evaluate whether a particular street is a nice place to live in?



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  - Get an overview of the terrain
  - Height differences
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  - 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.

### 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?





- 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?



- 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?



- 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





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?



- 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?



- 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?



- 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,

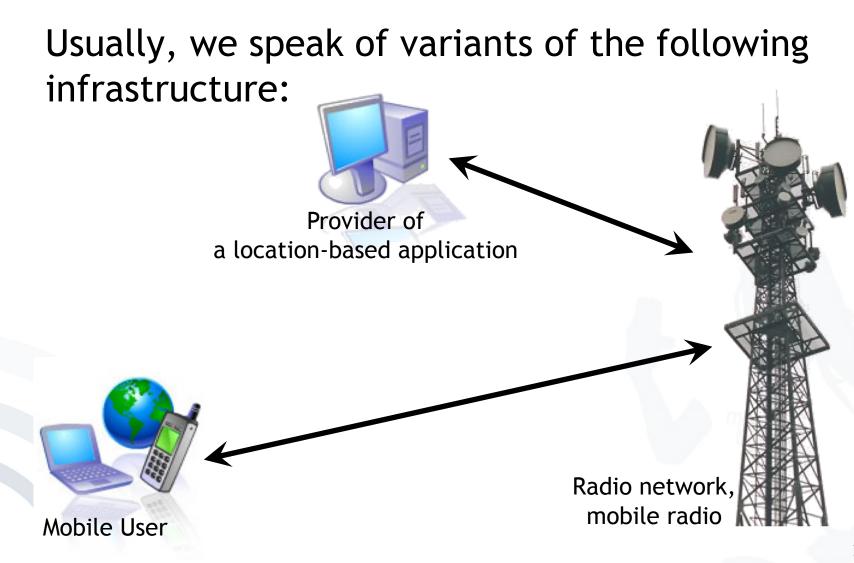
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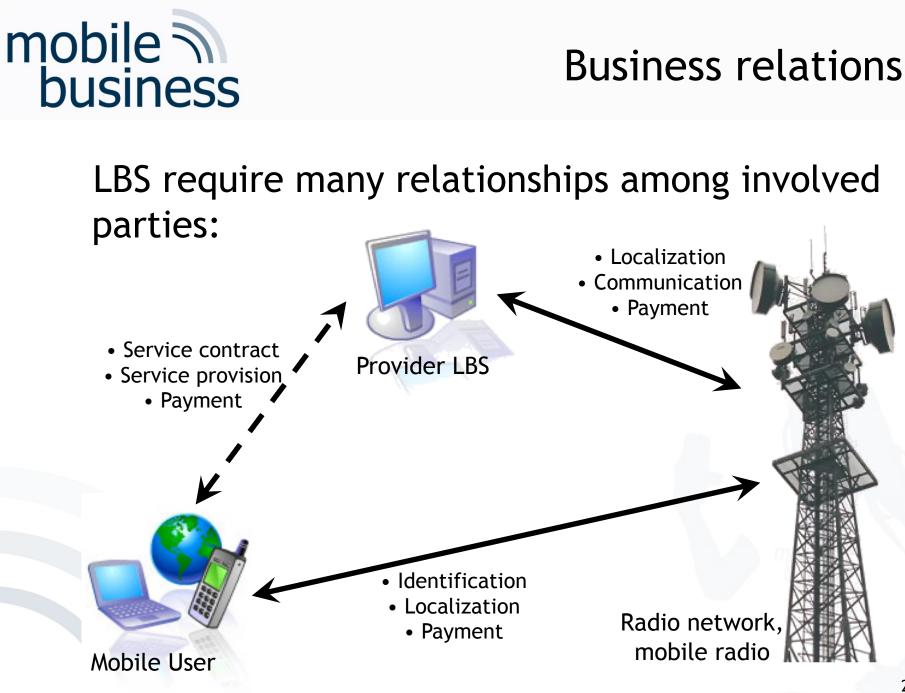


## **INFRASTRUCTURE FOR LBS**



### Infrastructure for LBS





### Elements of a business model

Jalue Chain

(1)

Product

lone, 3

#### (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

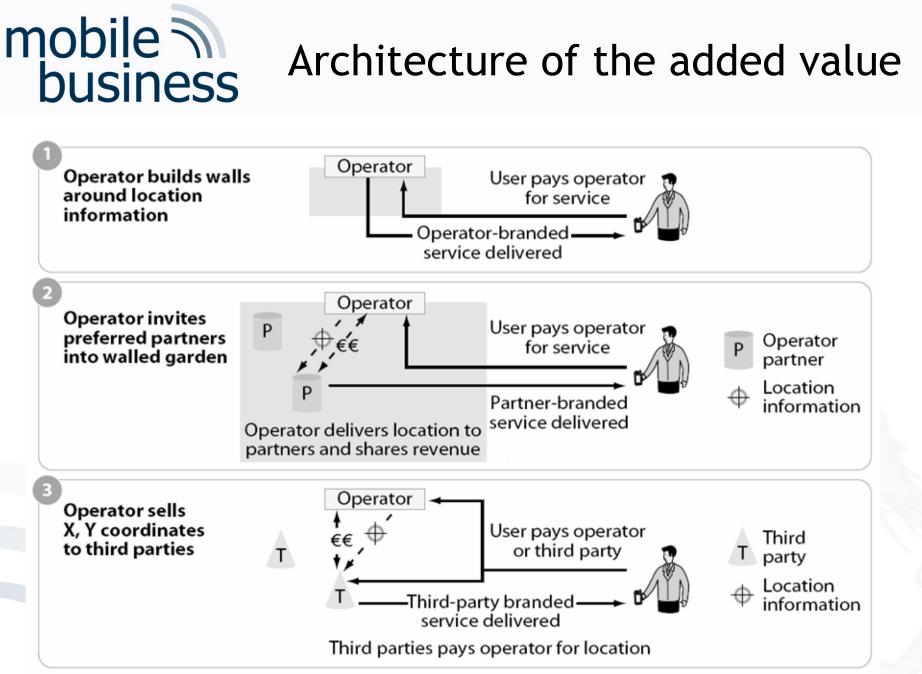
- Which revenues will be generated from which sources?
- What are possible types and forms of revenue?



### 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



### Exercise II

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





### Example 1: Yelp

<b>Q</b> Suchen	Zurück <b>yelp</b> ····	Zurück Hoppenworth & Ploch ····
Restaurant	Hoppenworth & <sup>0,2 km</sup> € Ploch	
Y Bar	Coffee Shop	
Coffee Shop	Heute: 09:30 - 18:00 Schließt in 58 Min	
Lieferservice	Beitrag schreiben	alle 11 anzeigen
••• Weitere Kategorien	Image: DescriptionImage: DescriptionFoto oder VideoCheck-InEselsohr	alle TT anzeigen
Du suchst nach einem Nachmittagssnack? Eine einwandfrei Bewertun		Beitrags-Highlights "Leckerster Kaffee/Espresso/ Cappuccino, den ich jemals getrunken habe!" 8 Beiträge
0,2 kr	-	"Mit Abstand der <b>beste Kaffee</b> und Tee in Frankfurt, vielleicht auch in Deutschland."
Hoppenworth & Ploch	E Check-In	5 Beiträge
der Nä Q Suchen	In der Nä Q Suchen	Q In der Nä Q In der Nä Image: Constraint of the second sec

### Example 2: Foursquare Find places arround you

• Telekom 🛜 10:01 🖌 🖾	∎ Telekom 🗢 10:00 🖌 🖾	📖 Telekom 🔶 10:01 🖌 🖾
Erkunden foursquare	Erkunden foursquare	Erkunden foursquare
EMPFOHLEN IN 4,75 KM	DURCHSUCHEN: ESSEN	III DURCHSUCHEN: ESSEN
Ginnheim K809	Q Versuch "Schokolade"	Q Italienisch
Mensa Anbau Casino		Other - Food
		Empfohlen in 4,75 km (1 Ort)
56 #1 Hauptfriedhof West Nordend-West #25 heim Grüneburgpark #10 Norde		There aren't a lot of results for "Italienisch." Try something more general, or expand the search area (in settings).
		This place is popular on foursquare.
Western #14 #24 #29 #17		Zimt & Korlander Leipziger Str. 20 1394 Meter
Here and H Here and Here and H	UU	Das wahrscheinlich beste italienische Restaurant in Bockenheim. Tolle Salatvariationen, die Pasta ist großartig, das Ambiente



### Example 2: Foursquare Check-In

Telekom 🔶 10:00 1 52 foursquare ORTE In Deiner Nähe Campus Westend / I.G. Farben Ca... Grüneburgplatz 1 638 Meter Rechts- und Wirtschaftswissensch... 435 Meter Chair Of Mobile Business & Multil... 1 479 Meter größter REWE Deutschlands Eschersheimer Landstr. 223 350 Meter 11 Sonderangebote in der Nähe 0)) Kallestraße 13, 60320 Frankfurt, Germany  $\bigcirc$ 673  $(\mathbb{Z})$ .... Freunde Orte Erkunden To-Do-Liste Markus





### Example 2 - Foursquare Gaming and Honor

### **General Badges**



### **Partner Badges**



### Example 2 - Foursquare Special Offers

Mayor Special

.utl AT&T 3G	1:46 PM	*	79% 💷
Places	Pluto's	;	
Pluto's 3055 Olin Av	e. (at Winches	NE	ECIAL ARBY →
Check in	People	Details	Tips
	e got you @ F heckin here!	Pluto's. Th	is is
YOUR SCOR	₹E		
🔤 First	time @ Pluto'	s! (+5)	
😃 First	stop today (+1	1)	
		Total: 6 p	oints
	Erik P. is The I Pluto's.	Mayor of	
2	2	8	
Friends Pla	ces Tips	Badges	More



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
Newble 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

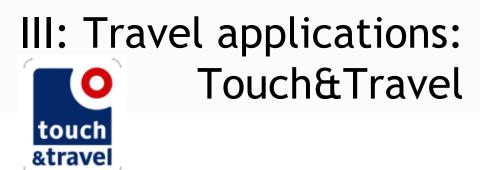
### Example 3: Travel applications: Touch&Travel

- 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



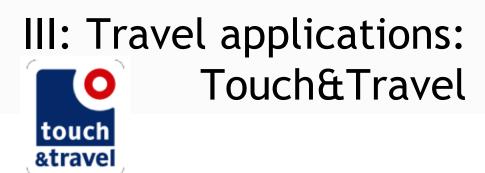






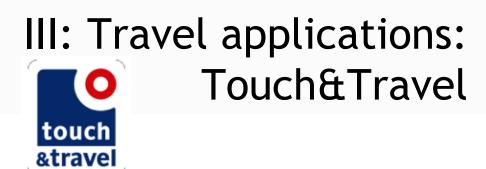
- a) What are the advantages for the travellers?
- b) What are the requirements of the travellers?
- c) What are the advantages for D-Bahn?
- d) What is the role of the network operators?





- 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)





- 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



### 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).



[usgs2023]