

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.





a

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

Your participation ③



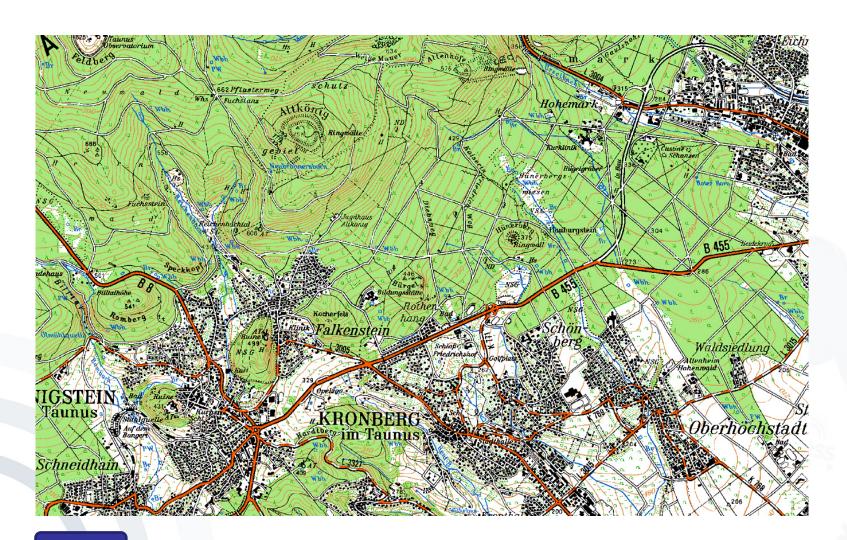


Look at the following maps and briefly answer the three questions for each of them.

- 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)

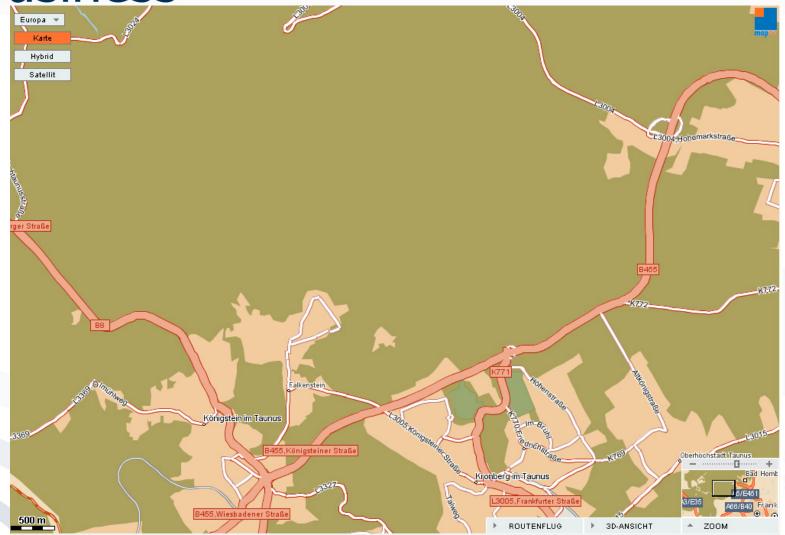
- 1. What is the purpose this map can be used for?
 - Get an overview of the terrain
 - Height differences
 - Geographical details
 - The area where a certain town is located
- 2. Does this map help you to ride a bicycle from Königstein to Kronberg?
 - Yes, since all the roads are shown.
- 3. Will this 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.

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,

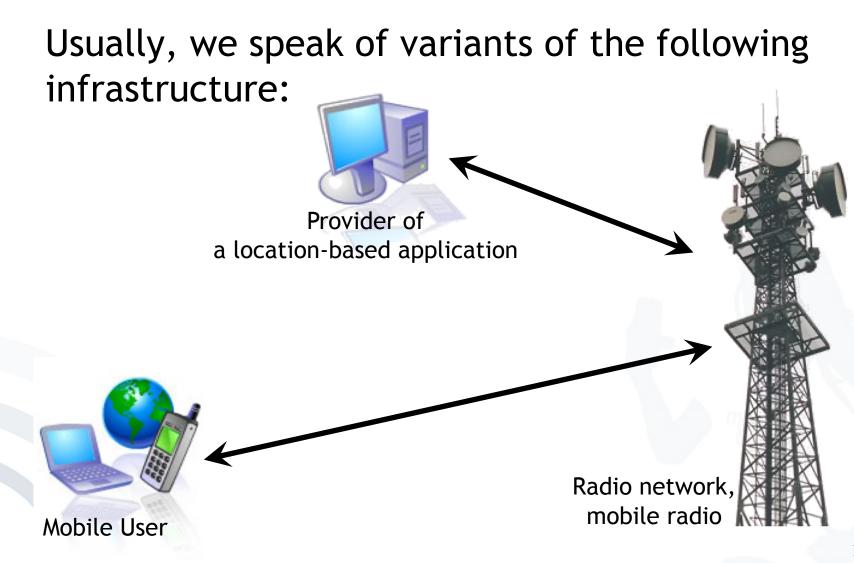
WHICH FACTORS ARE RELEVANT FOR YOU AS A SERVICE PROVIDER IN ORDER TO CHOOSE A POSITIONING METHOD FOR YOUR SERVICE?

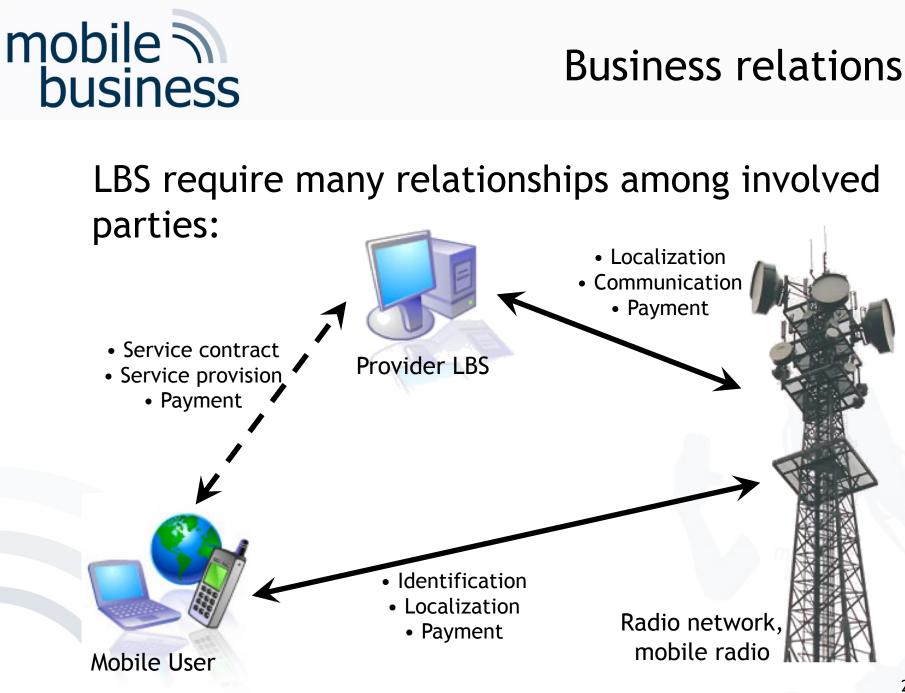


INFRASTRUCTURE FOR LBS



Infrastructure for LBS





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

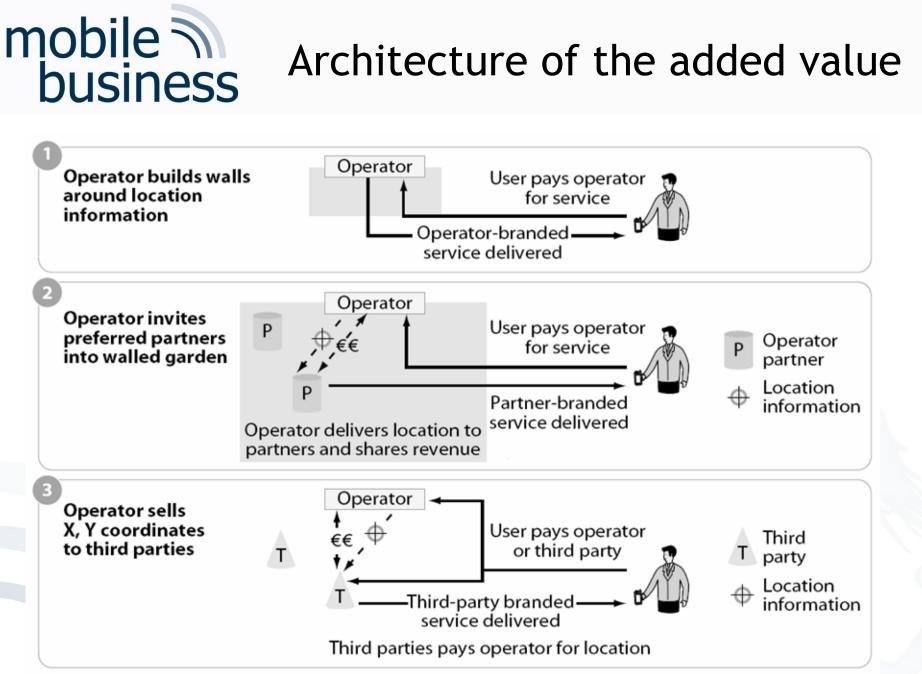
- Which revenues will be generated from which sources?
- What are possible types and forms of revenue?



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

Q Suchen	Zurück yelp ····	Zurück Hoppenworth & Ploch ····
Restaurant	Hoppenworth & ^{0,2 km} € 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 beste Kaffee 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

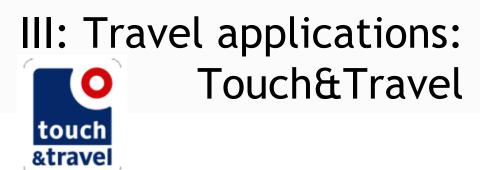
Example 3: Travel applications: Touch&Travel

- 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



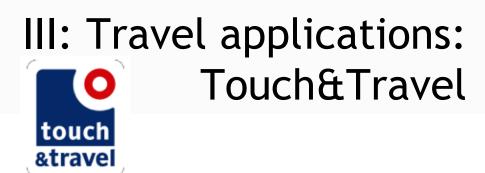






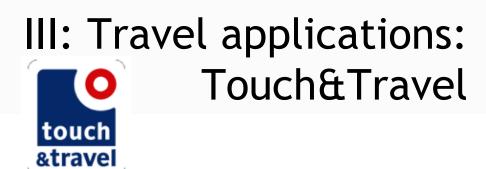
- a) What are the advantages for the travellers?
- b) What are the requirements of the travellers?
- c) What are the advantages for D-Bahn?
- d) What is the role of the network operators?





- 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]