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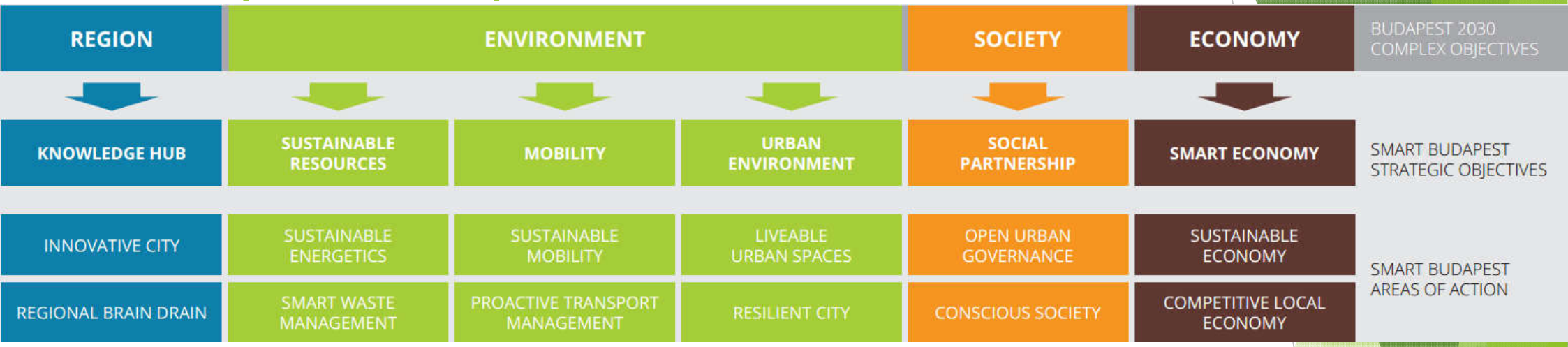
Smart City

Speech Technology and Smart Interactions Laboratory

Example: Budapest



The aims of the vision's strategic areas:

- Budapest shall become a centre of international innovation thus a target for knowledge transfer;
- Budapest shall protect its environment by the sustainable utilization of resources and waste generated;
- Budapest shall establish a sustainable mobility system enhancing the liveability of the city;
- Budapest shall become capable of responding to the environmental and technologic changes of the 21th century;
- people in Budapest shall live in an open and cooperative society;
- Budapest shall continue to progress based on the development of sustainable and local economy.

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Various application areas (Budapest examples)

- CNG fleet at the public space operator
- LED traffic lights
- Thermal weater heating in the Zoo
- Selective waste collection
- Pedestrian- and biker-friendly developments
- Accessible public transport
- Electric car charging station
- Lively public spaces
- Community spaces, e.g: Szilas-patak

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Smart Pole

- Lights (LED)
- WiFi
- Security camera
- Electric car charging station

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Forrás: https://mno.hu/data/cikkek/1313/13136/cikk-1313678/D_MAR20151112003_focuspoint_926x504.jpg
http://galeria.vezess.hu/files/135/086/000/86135/86135_715252_784x523.jpg

Smart Transport

- Electric vehicles
- Bikes
- Charging systems
- Autonomous vehicles
- Dynamic lane management
- Dynamic speed management
- Advanced pavements/coatings and markings
- Dynamic–real-time traffic information and management
- E-charger lanes

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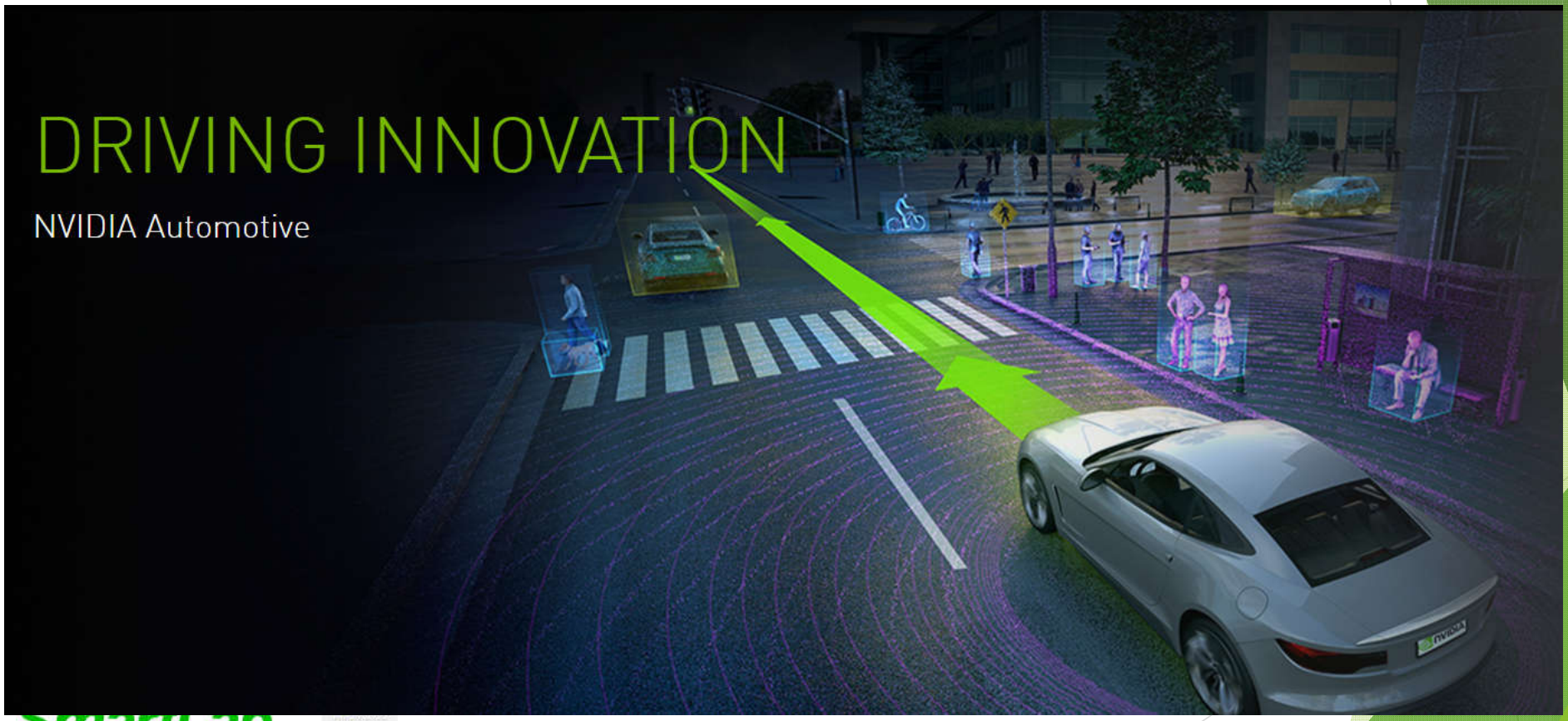
Self-driving cars



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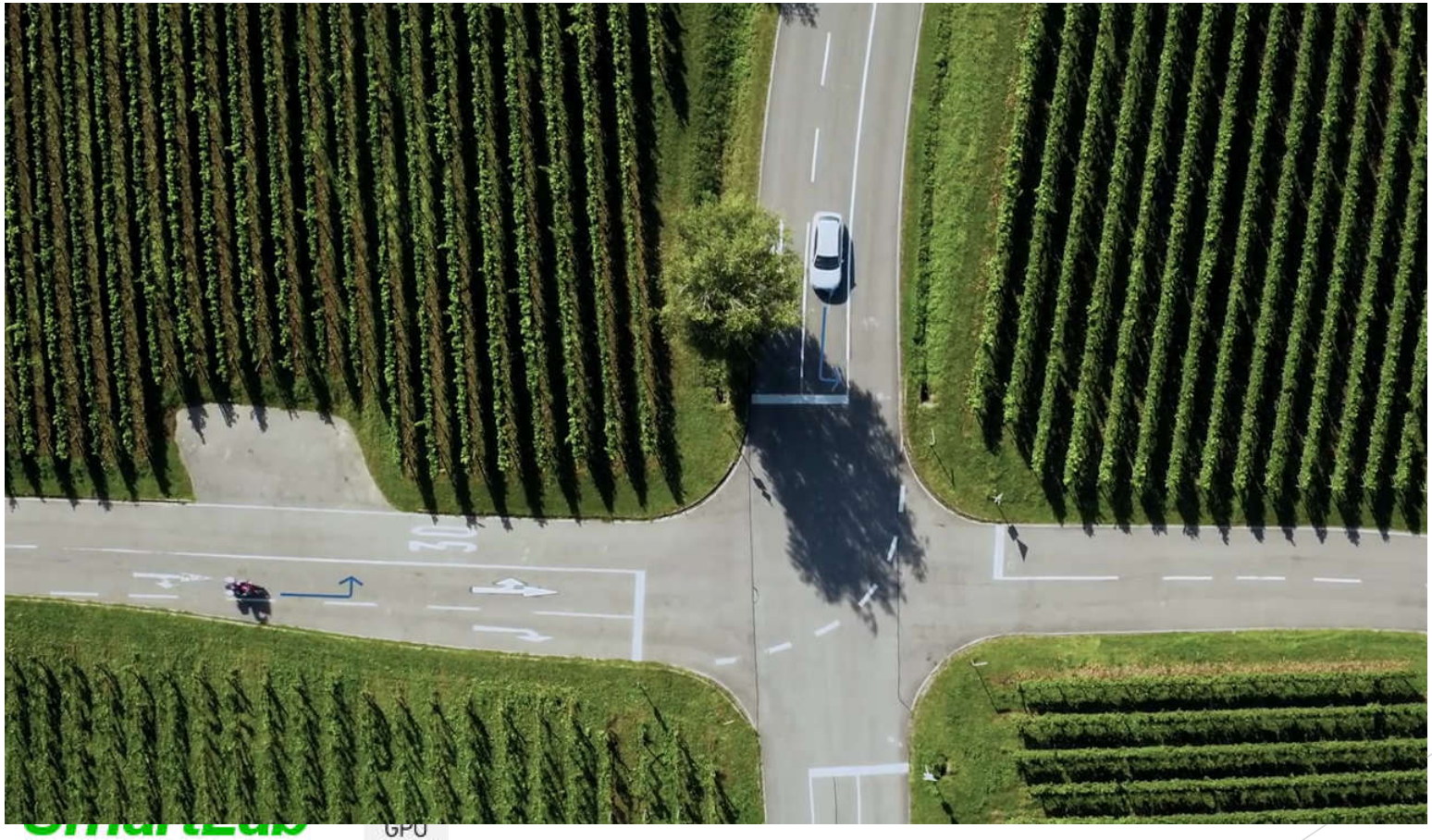
Self-driving Bus

V2V



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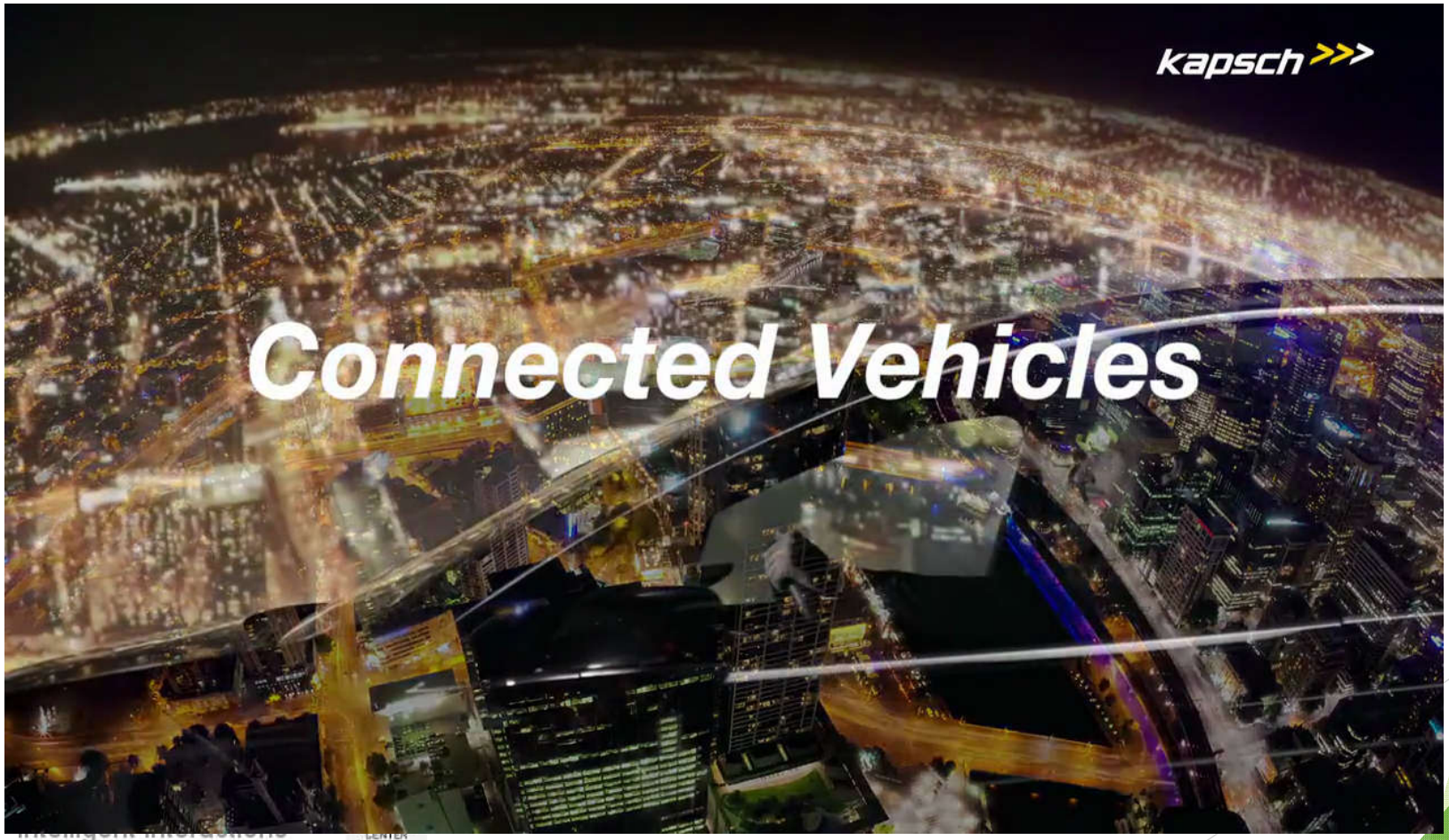
Vehicle to everything



Smart parking indoors

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https://www.swarco.com, http://smartparking.com

Smart parking outdoors

- Smart Parking - The Future of Parking in Wellington: https://www.youtube.com/watch?v=UdAA2danoLY

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Public transport development

- Mol Bubi

- Futár

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MOL Bubi bike hire

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BÉRLÉS
BICYCLE HIRE

MOL BUBI JEGGYEL
WITH MOL BUBI TICKET

MOL BUBI BÉRLETTEL
WITH MOL BUBI PASS

ÚJ FELHASZNÁLÓ?
ARE YOU A NEW USER?

1

Kérjük, adja meg telefonszámát és PIN kódját a kerékpár hátsó részénél található érzékelőnél.

Please enter your phone number and your PIN code on the rear sensor of the bike.

1

Érintse MOL Bubi kártyáját a kerékpár hátulján található érzékelőhöz.

Touch your MOL Bubi card to the rear sensor of the bike.

Kerékpárbérléshez érvényes MOL Bubi jeggyel vagy bérlettel kell rendelkezni.

You have to be in possesion of a valid MOL Bubi ticket or pass to hire a bike.

2

Felvillanó zöld fény és sípszó jelzi, ha a kerékpár kivehető.

Blinking green light and beep from docking point signal that the bike can be removed.

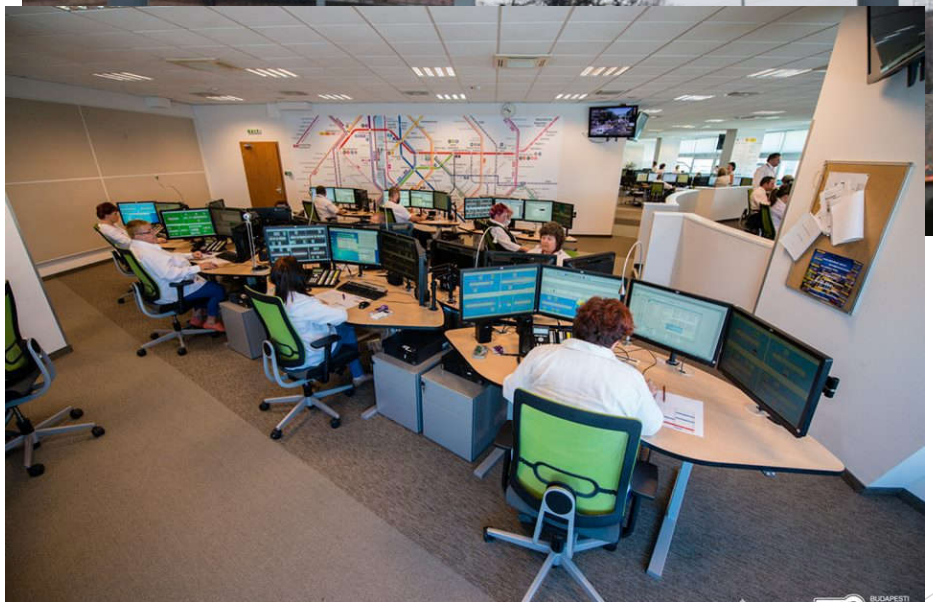
3

Húzza ki a kerékpárt a dokkolóból. Jó biciklizést!

Remove bike from the docking stand. Have a nice ride.

Futár

- Complex system



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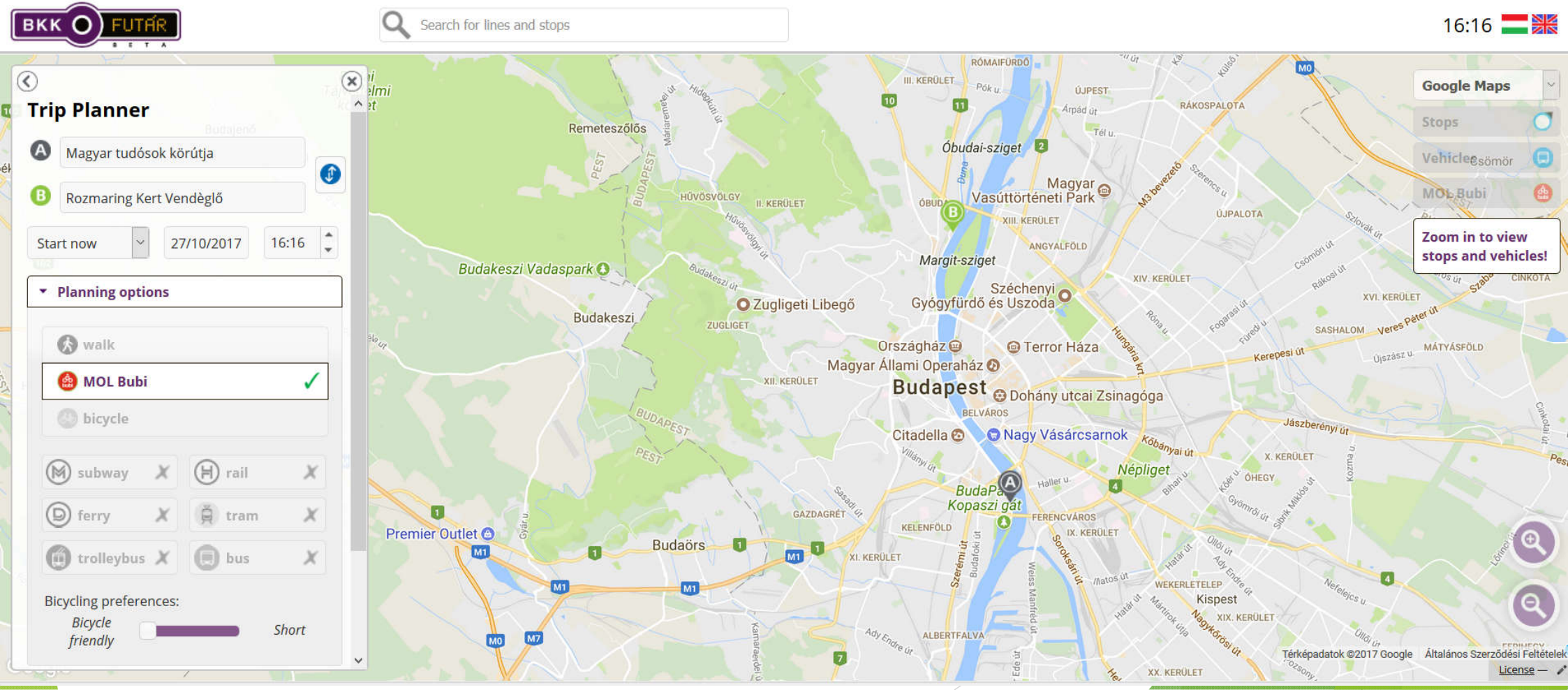
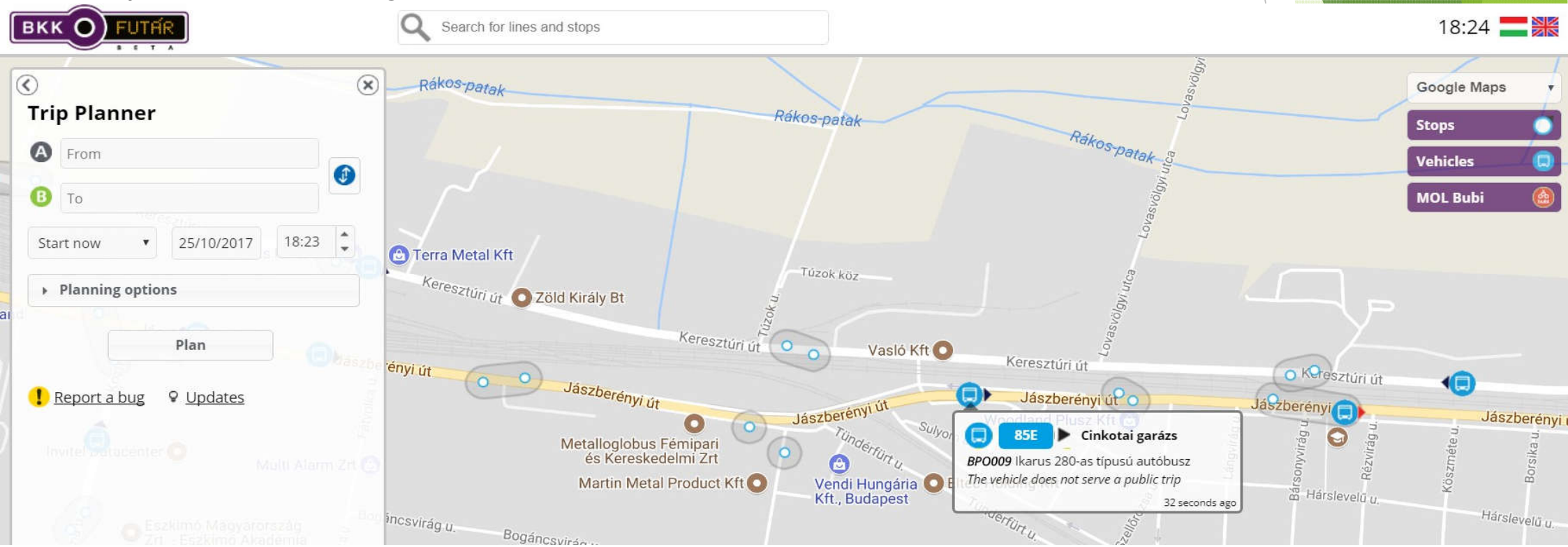
Futár – client side



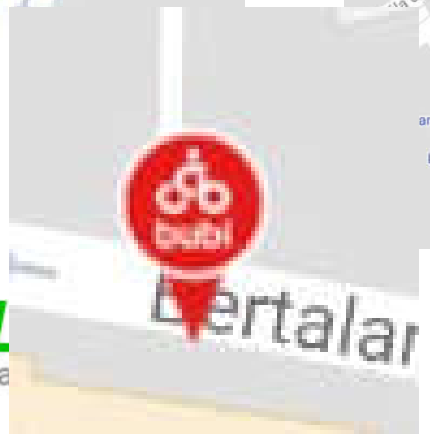
Futár – HCI problems

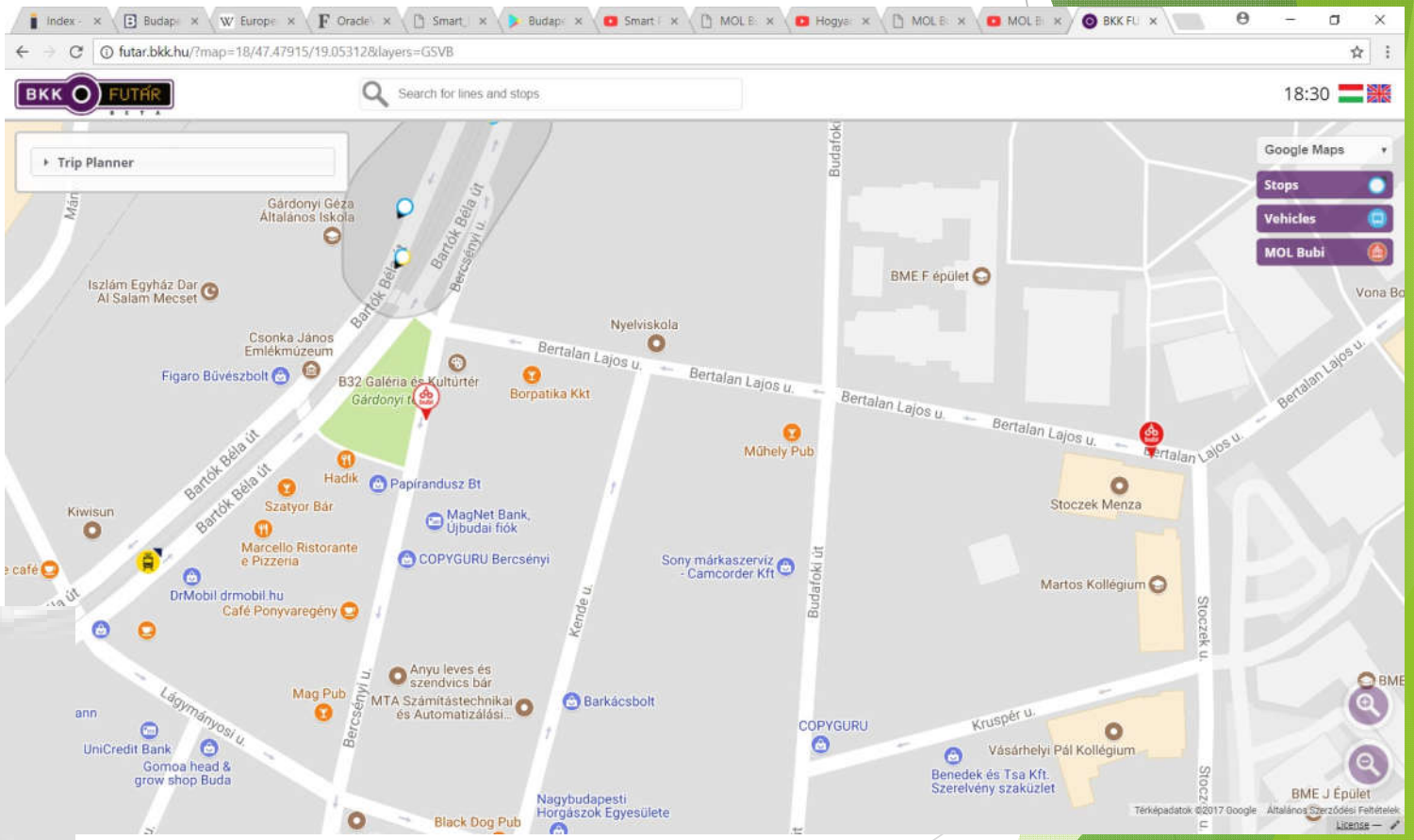
- Handling of multiple targets
  (Thököly út practice already discussed)
- Poorly defined targets
- Bad/professional wording



Futár

- Mol Bubi integration
- What is the meaning of different signs





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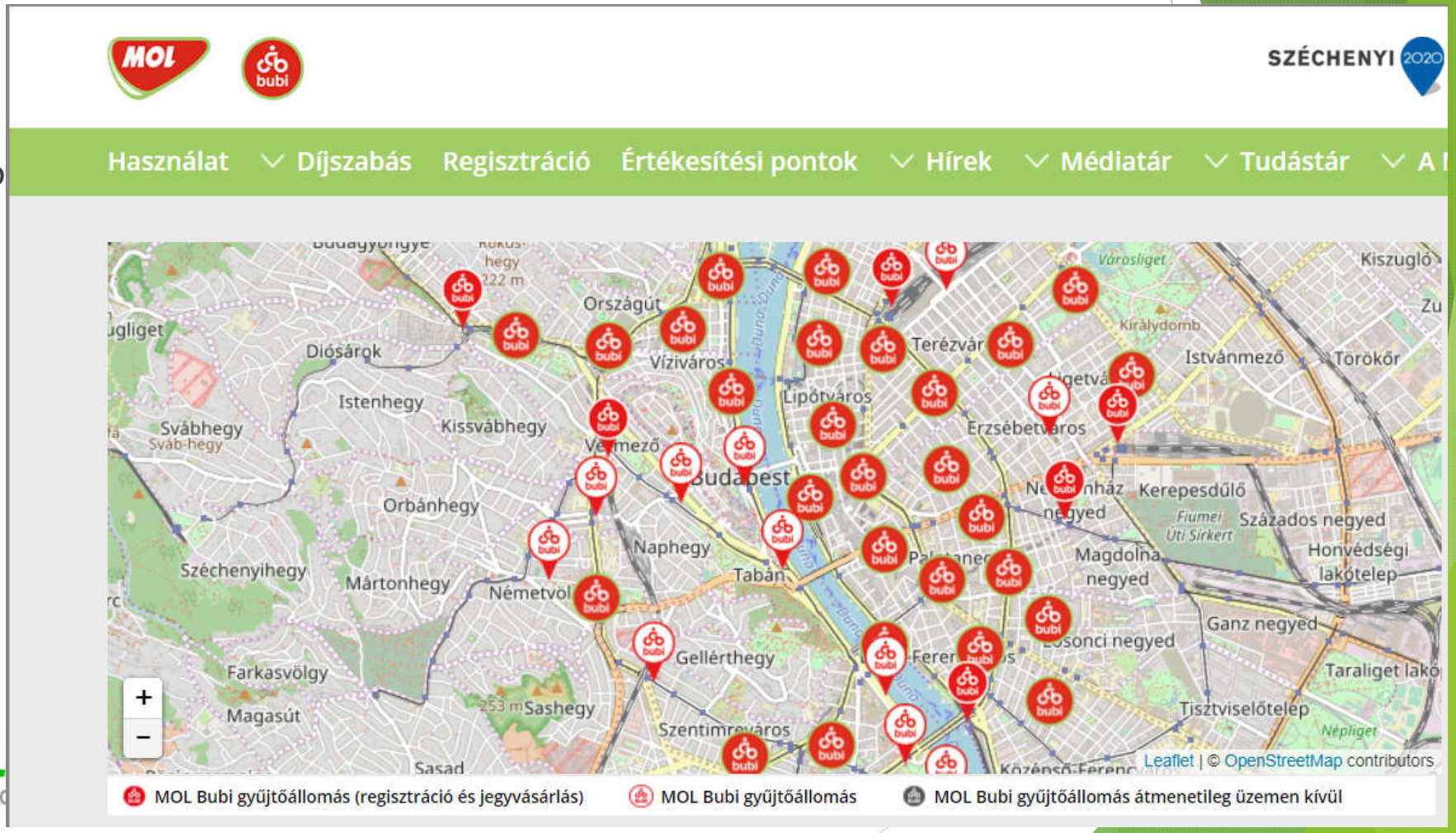
Solution, on another website

- Mol Bub



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Mobile apps

- Smartcity Budapest Transport
- Budapest Public Transit
- BKK Futár

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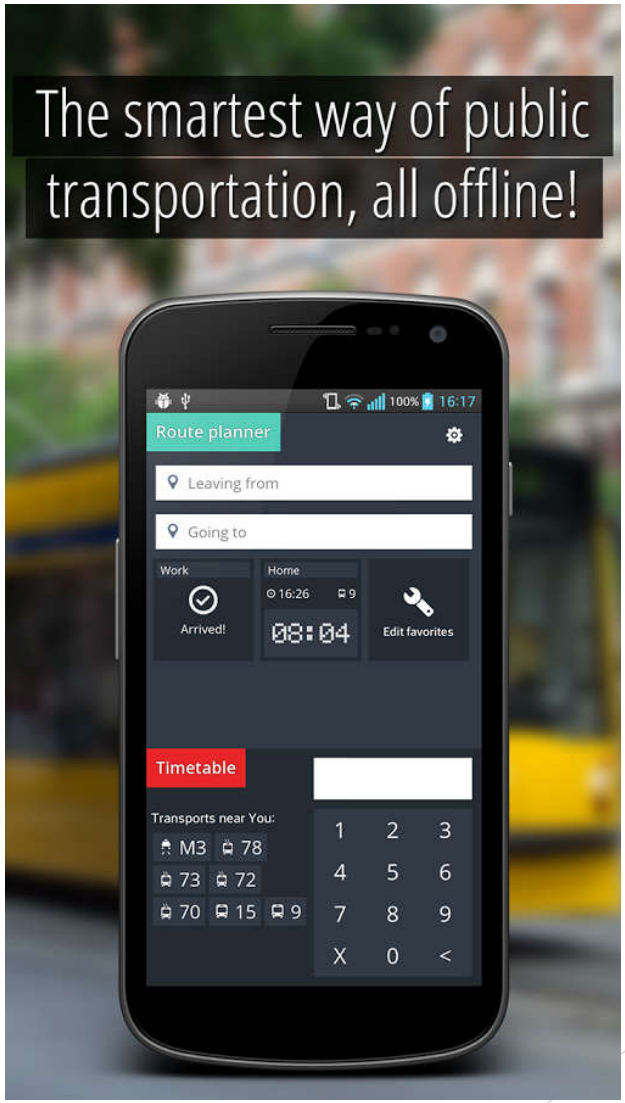
Public transport

- Smartcity Budapest Transport
  - Stop search with AR
    - Good idea
    - Not implemented
    - See video
    - https://youtu.be/StwHGPrQY8g



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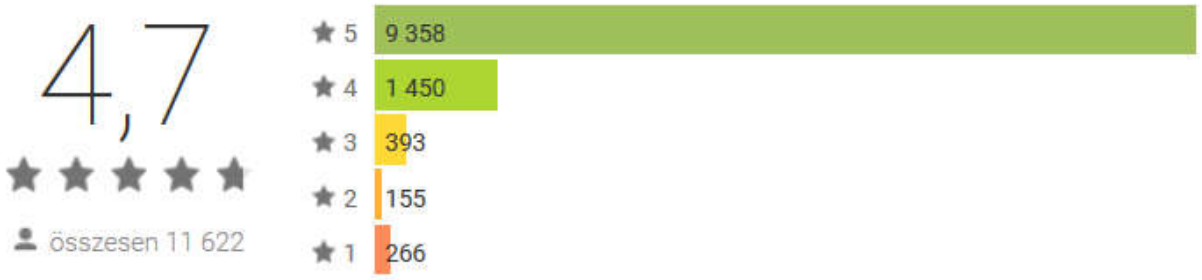
Public transport

- Budapest Public Transit
  - Offline base-timetable
  - Real-time timetable (Futár compatible)



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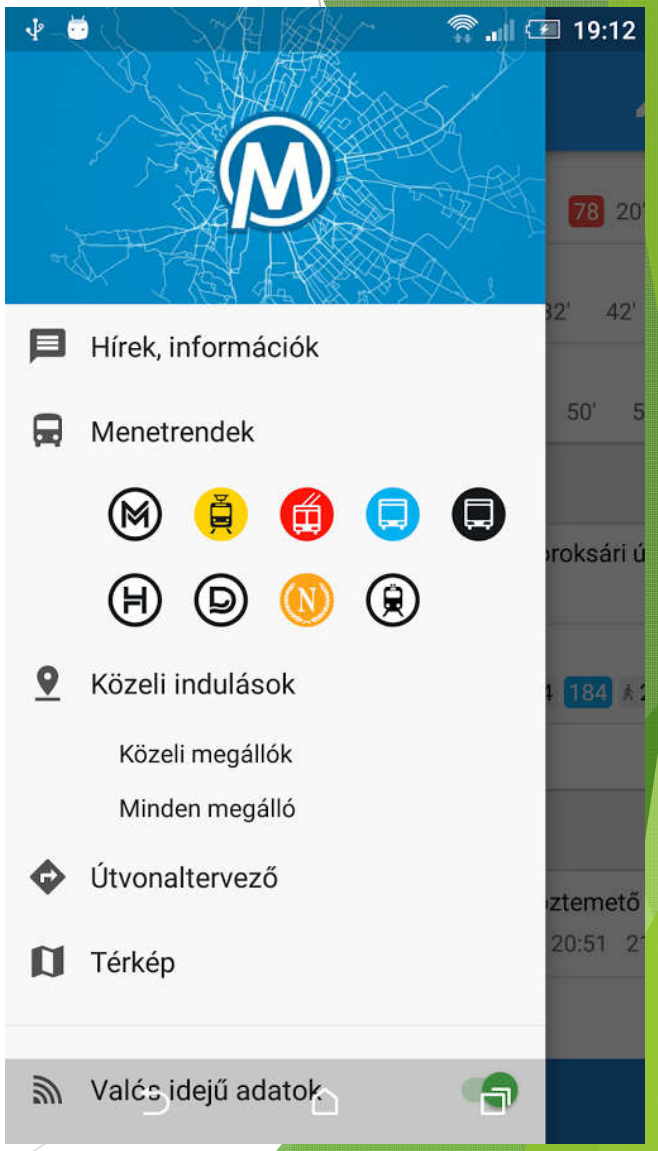
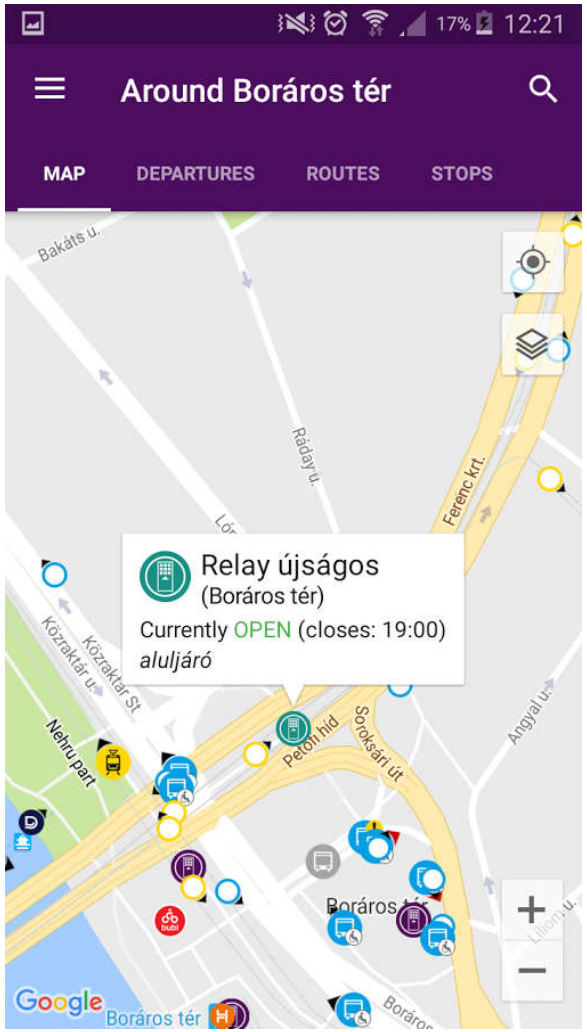


Public transport

- BKK Futár
  - Official APP
  - Bubi integration



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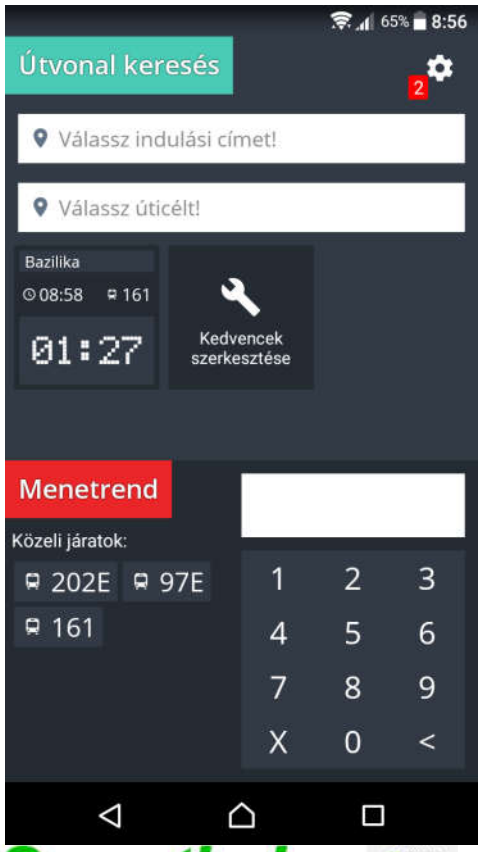
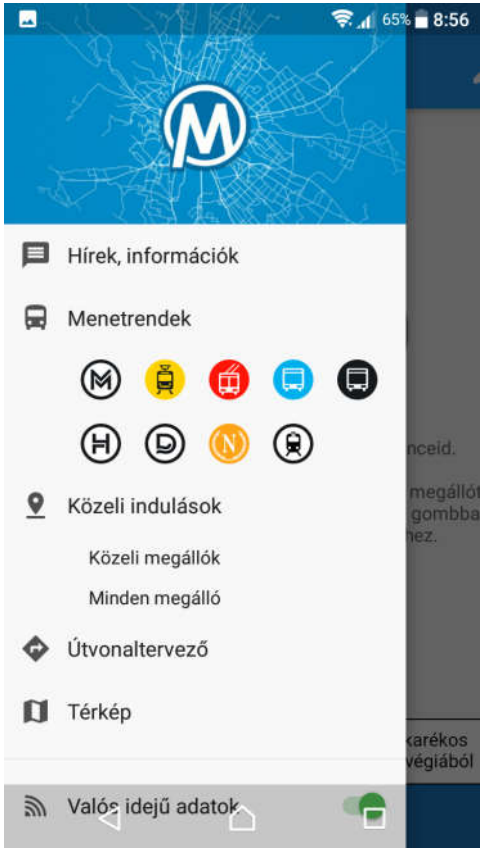
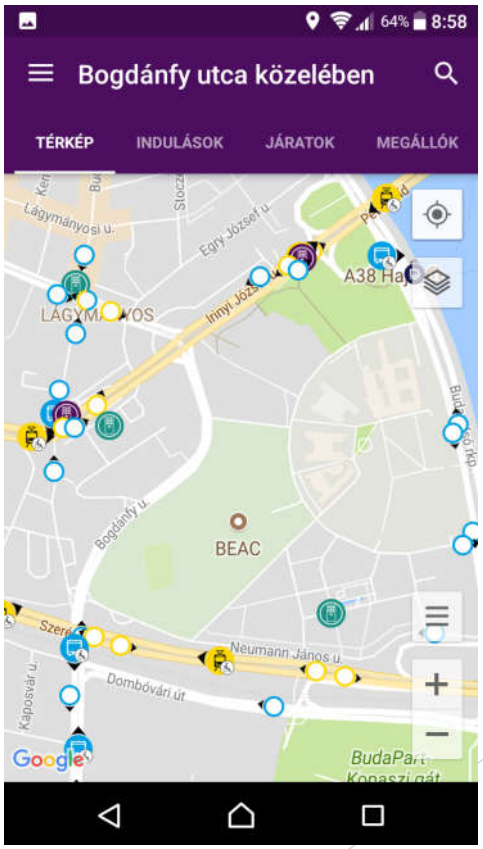
Opening screens







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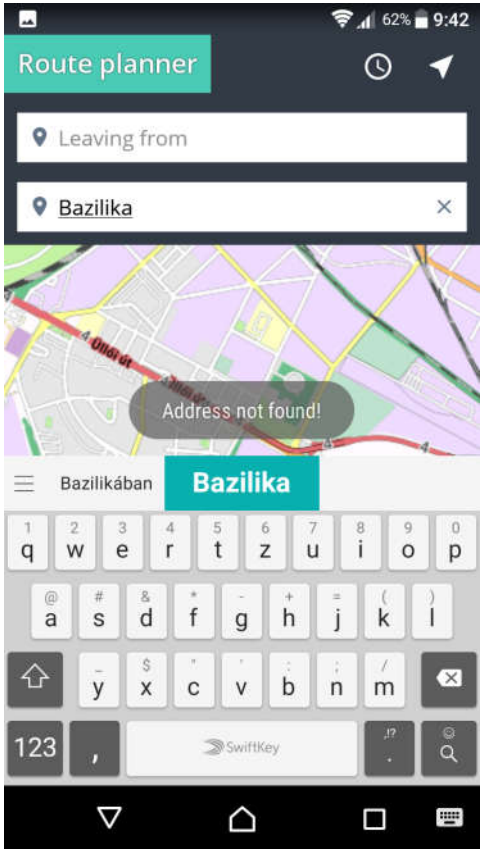
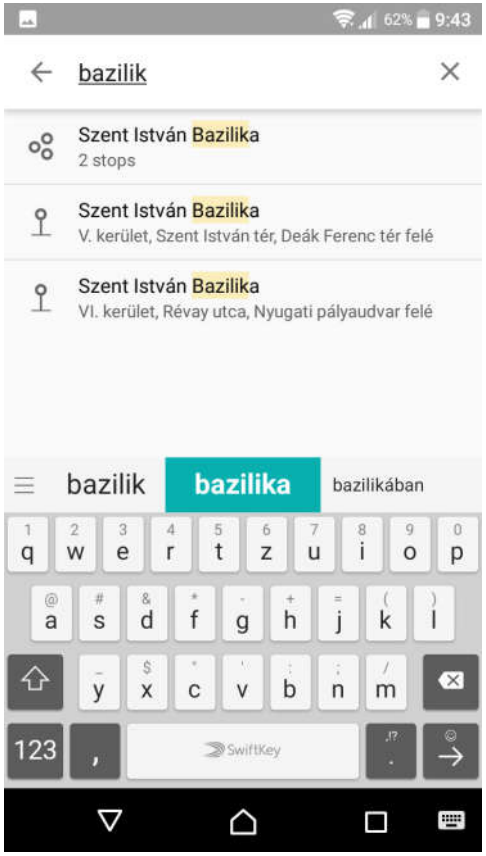
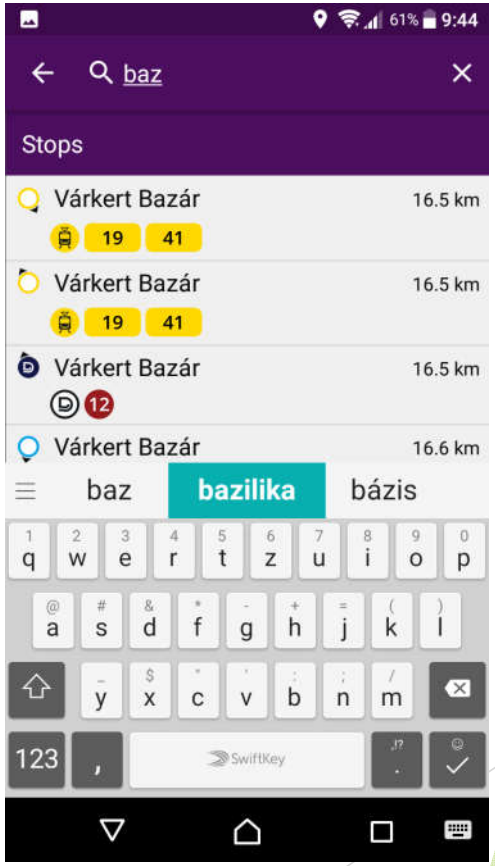
Search







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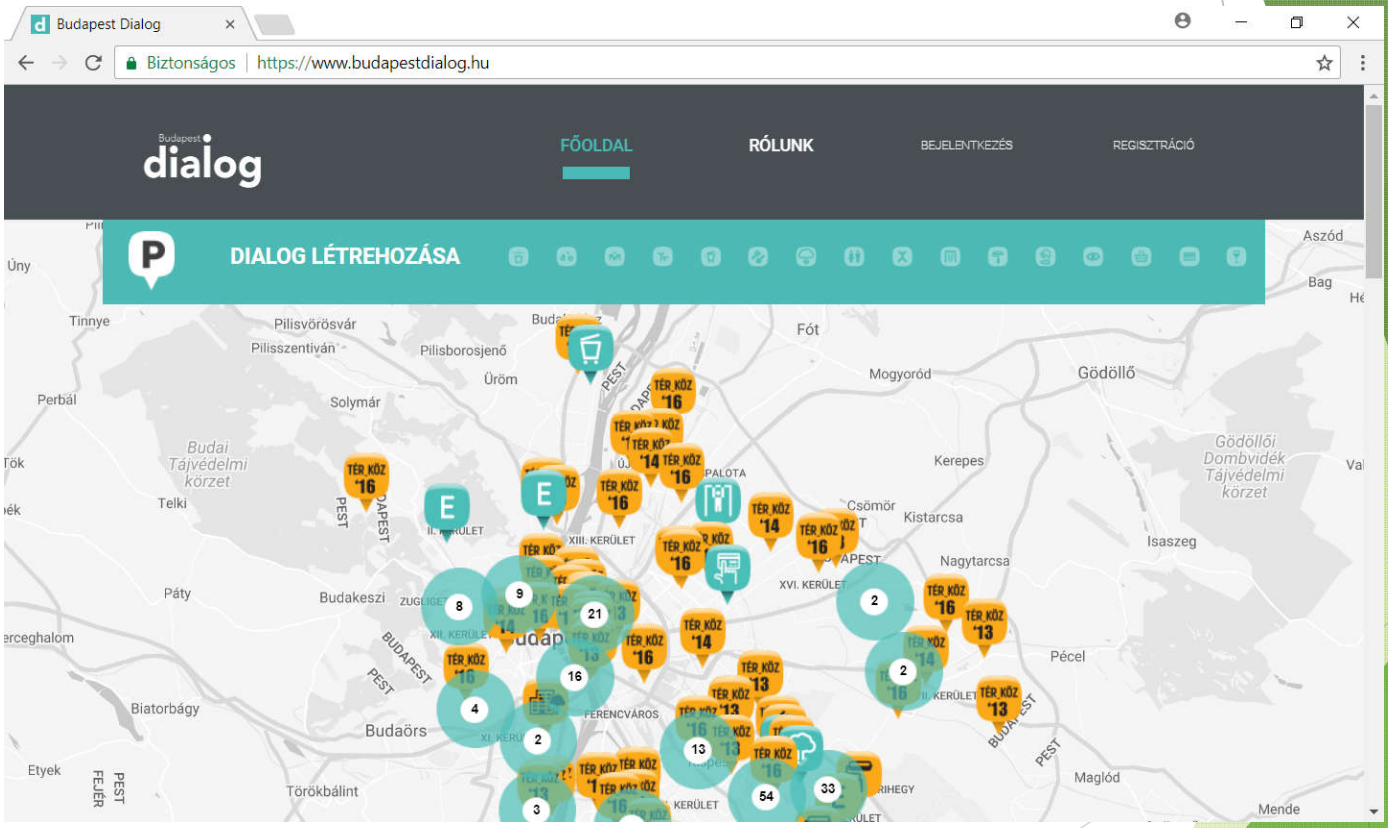
Involving the community in the development

- BudapestDialog



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https://prezi.com/3dmk_apotxmk/budapest-dialog-english/

User-centered design (summary and rehearsal)

- Active involvement of end-users and understanding user and task related requirements
- Definition and separation of user and technology roles
- Iteration of design solutions
- Multi-disciplinary design

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Activities

- Defining and udenrstanding user context
- Defining user and organizational requirements – defining usability related targets
- Solution implementation
- Solution evaluation based on the requirements

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Information collection

- Questionnaires
- Interviews
- Watching
- …

- Aim: Find „pain points” of user activities

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Understanding the tasks

- Storyboard
- Scenarios
- Persona

- Defining usability criteria (The Five Es)
  - Effective
  - Efficient
  - Engaging
  - Error Tolerant
  - Easy to Learn

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Design - Prototype

- Fast
  - Paper prototype
  - Mockup
- Iterative development!!!
- Evaluate everything possible

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Evaluation

1. Strategy
2. Plan
3. Testing
4. Evaluation
   - Everything OK: The system is ready
   - Cannot decide, sufficient data is not available: Further tests
   - Insufficient data : New plan
   - UI errors: Improvement and new evaluation (strategy, plan, test, evaluation)

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