

Data-Driven Changemakers Datathon 11-13 November 2016

Active Public Space: Urban Movements, Diverse City and Bottom-up Impact

What were the participants working on?

The Data-Driven Changemakers Datathon at CERGE-EI focused on Active Public Space. Participants analyzed Prague city data provided by the Prague Institute of Planning and Development (IPR), the Czech Statistical Office (ČSU) and O2 (see the [full overview of available data](#)) to conceptualize practical solutions for urban movements, diverse city planning and bottom-up impact development (see the [full overview of topics and questions](#)).

One of the most studied and hotly debated topics at the Datathon was *livability*. Three of the ten groups devoted their projects to various aspects of this issue. Group 5 developed a novel approach to measuring the livability index across Prague neighborhoods. Group 1 suggested a synthesis of estimation-based techniques aimed at identifying target districts for top-down urban policies enhancing livability, combined with a bottom-up approach to collecting data on resident-assessed livability. Group 3b found that enhancing livability might also help to attract highly educated immigrants to Prague and ultimately improve the city's overall labor force productivity.

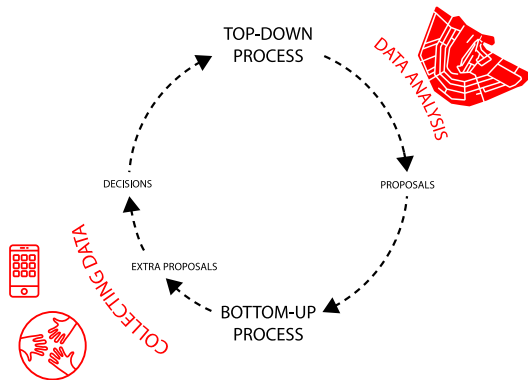
The Datathon's second most popular topic was Prague's *public transport system*, which was analyzed by three groups. Groups 4 and 8 identified neglected zones with limited access to public transport and proposed a range of feasible and cost-effective solutions. Group 7 evaluated pecuniary externalities of potential implementation of the metro line "D" construction plan being considered by Prague City Hall.

The other two groups simultaneously investigated from different perspectives the effective use of *public space*. Group 10 examined a case study of how abandoned areas and structures can be transformed successfully to serve the needs of local communities. Group 6 developed a strategy for creating children-friendly zones through public space activation measures. In addition to the above, the Datathon addressed the determinants of *residential real estate prices* and the relationship between *nationality diversity and prosperity*.

Overview of group projects

Group 1

Livable Prague



This project developed an original framework for urban planning consisting of two fundamental approaches to decision-making at the municipal level. First, Group 1 members discussed the top-down approach, which is aimed at identifying neglected areas based on exceptionally low levels of livability. Second, as a bottom-up approach, the members suggested augmenting the statistically predicted levels of the districts' livability with subjective evaluations collected from citizens through interactive applications (e.g. mobile apps).

Group 2

Real Estate Analysis

	Chodovec		
M2	-94	63	-5922
Distance Km	-3527	3,2	-11286,4
Balcony	11360	1	11360
Storage	-3631	0	0
Energy 1-7	1331	1	1331
Distance metro	-1,32	500	-660
Distance tram	-3,64	100	-364
1	10707		0
2	14161		0
3	15095	1	15095
4	12933		0
5	16574		0
6	13028		0
7	14608		0
8	11308		0
9	23446		0
Muzeums	4152	0	0
Concert halls	4379	0	0
Working place	0,978	4595	4493,91
Elementary schools	2883	0	0
Kindergardens	-2220	0	0
Cinemas	-8353	0	0
Monuments	151	0	0
Constant	39536	1	39536
	53 584	3 375 761	Expected value
		3 500 000	Real value

This project identified potential determinants of real estate prices using linear regression analysis. Group 2 found the most significant determinants and discussed their estimated signs and magnitudes of effect. Group members emphasized that for some of the factors potentially affecting real estate prices, the predicted direction of effect was found to be counterintuitive compared to beliefs prevalent among property owners.

Group 3a

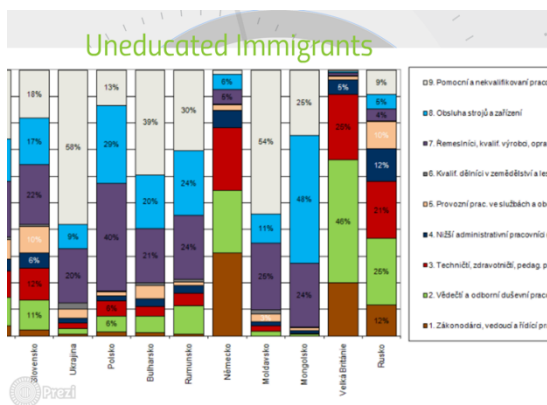
Diversity and Prosperity



Using district-level data, Group 3a estimated the average degree of association between nationality diversity and prosperity. Importantly, while a significant degree of association was not found in this analysis, it was suggested that various aspects determining the quality of life across districts might also affect their attractiveness to foreign inhabitants and, thus, enhance the nationality diversity of certain districts and the city as a whole.

Group 3b

Encouraging Educated Immigrants to Stay in Prague



This project emphasized the importance of attracting highly educated immigrants to stay in Prague. Group 3b suggested that by creating more suitable living conditions, including enhanced amenities and well-developed public infrastructure, the share of highly educated immigrants might increase substantially, thus yielding a higher quality of services and better management of local resources.

Group 4

Neighborhoods with limited transportation access

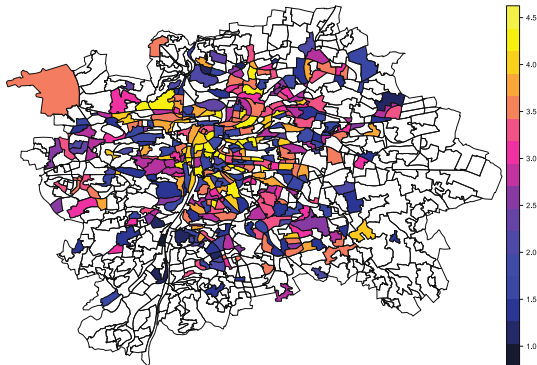
Problem - identify districts with limited access to public transport - suggest solutions which aim to tackle the problem (case study)	Solution - park'n'go - new bus line	Unique Value Proposition Helps people from limited access districts improve their quality of life.	Unfair Advantage It is simple.	Customer Segments target customers - citizens of minidistricts, which regularly use public transport e.g. people commuting to work and students
Key Metrics - number of bus stops - distance to stops	The "Wow!" The one (mainly) card, feature that every review will rave about.	Channels Path to customers Example: Website, Sales force, Word-of-mouth, Direct sales, Direct response ads		
Cost Structure Examples: Customer acquisition costs, Distribution costs, Web hosting, Employees, Manufacturing, Support - new bus line: costs of work (driver), building new stops, optionally purchasing buses - park and go: building cost, machines cost	Revenue Streams - increase in ticket sales - profits from parking zones			

This project aimed at identifying districts with limited access to public transport. Group 4 considered districts that exhibit both a low coverage ratio of public transport routes and high shares of the commuting population. Ad hoc solutions for each of the affected districts were developed based on their particular commuting patterns and demographic structures.

Group 5

Livability Index

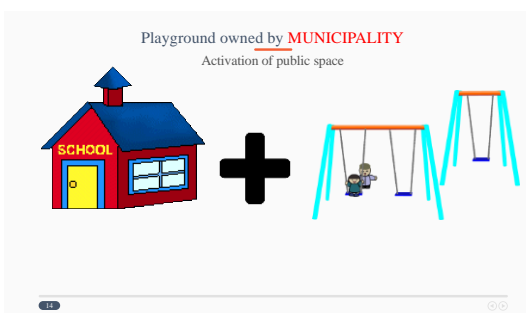
PRAGUE LIVEABILITY MAP



Group 5 suggested downscaling a widely used city-ranking approach and developed a scoring framework for smaller units, i.e. neighborhoods. A complex measure (livability index) was used to rank districts in terms of walking accessibility, emphasizing the importance of environmental sustainability and enhancement of social interaction in urban planning. In addition, the proposed ranking takes into account average housing prices and levels of public participation in neighborhoods.

Group 6

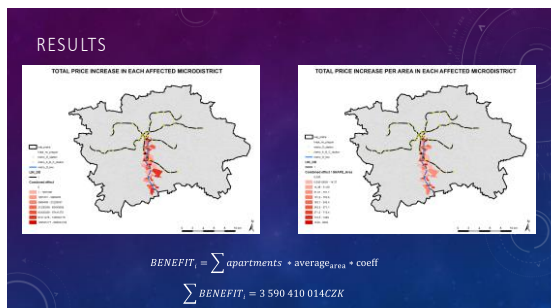
Child-Friendly Public Space



Group 6 found that higher birth rates are associated with higher levels of prosperity, controlling for other demographic characteristics of the districts. Members of Group 6 proposed policy recommendations for municipal authorities, including the activation of public spaces in neighborhoods of newly built schools that result in positive externalities for local citizens.

Group 7

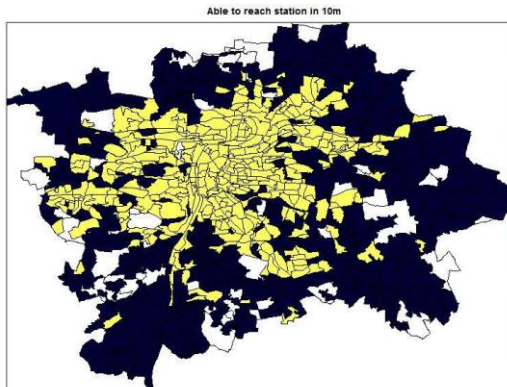
The Benefits of a New Underground Line for Prague



Group 7 estimated the amount of potential economic benefits brought by building a new metro line in Prague. Based on cumulative price differentials before and after the construction of metro line “D”, Group 7 evaluated the economic benefits on the real estate market of districts directly affected by the new line.

Group 8

Neglected Zones



Group 8 carried out a spatial analysis of Prague neighborhoods to evaluate public transport accessibility, identifying seven areas with insufficient service provision. Group 8 considered relevant alternatives to address the underlying issues of insufficient access to public transport and developed a comprehensive and cost-effective solution for affected areas.

Group 10

Abandoned Zones

Vision:

REUSING and **ACTIVATING**
abandoned (inactive) zones
so they serve to the needs
of people inhabiting the area

Group 10 identified neighborhoods with weak urban activity and low levels of public space utilization and people movement but with hidden potential in terms of high population density, availability of unused buildings and areas adaptable for local community needs. Group 10 chose the Braník area as a case study matching the outlined criteria and identified potential targets for both public and private investments aimed at reusing and activating the abandoned structures in the area.