5 years experience of data collection and transport modelling in Budapest

Tamás Halmos
Innovation Officer
BKK Centre for Budapest Transport
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Tamas.Halmos@bkk.hu

BUDAPEST

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Content

- **The establishment of the Macroscopic Transpot Model of Budapest**
- **The structure of the model**
- **The usage of the model**
- **The development and maintenance of the model**
- **Data collection methods, experiences**

The establishment of the model

Financed by the EU, BKK procured the establishment of the first integrated macroscopic transport model of Budapest and its agglomeration.

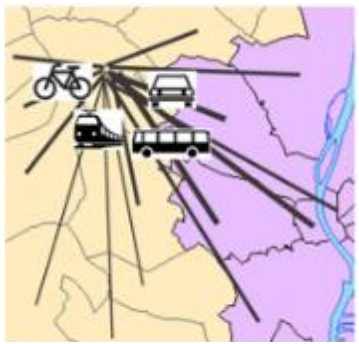
The aims of the MTM:

- provide a **unified and solid basis** for the transport development plans
- **provide open access** to anybody, who is qualified and experienced enough to use the model
- be capable to **exchange data** with different registers, databases
- match to the transport model of the **Hungarian National Transport Strategy**
- be in line with the Budapest 2030 Long Term Urban Development Strategy and the **BMT Balázs Mór Plan**, the first SUMP based transport development plan of Budapest

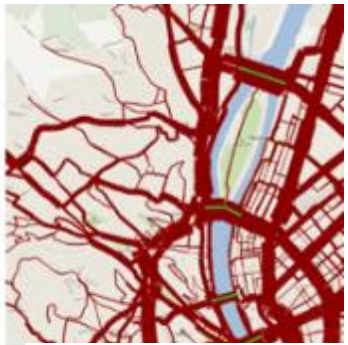
Traditional 4-step model

Generation

Distribution



Mode choice

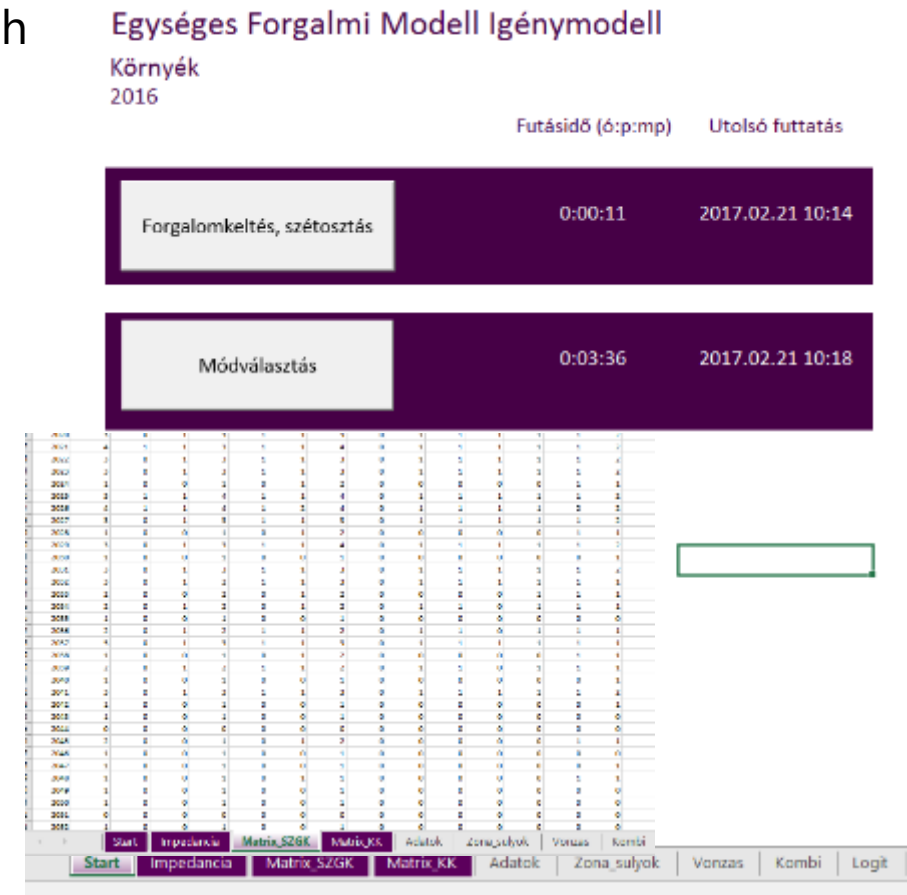


Assigment

Demand model

The demand model is in an Excel sheet with Macros:

- Budapest demand model
- Agglomeration demand model
- Present (2016)
- Future (2020, 2030 és 2050)



Territorial modell

Budapest

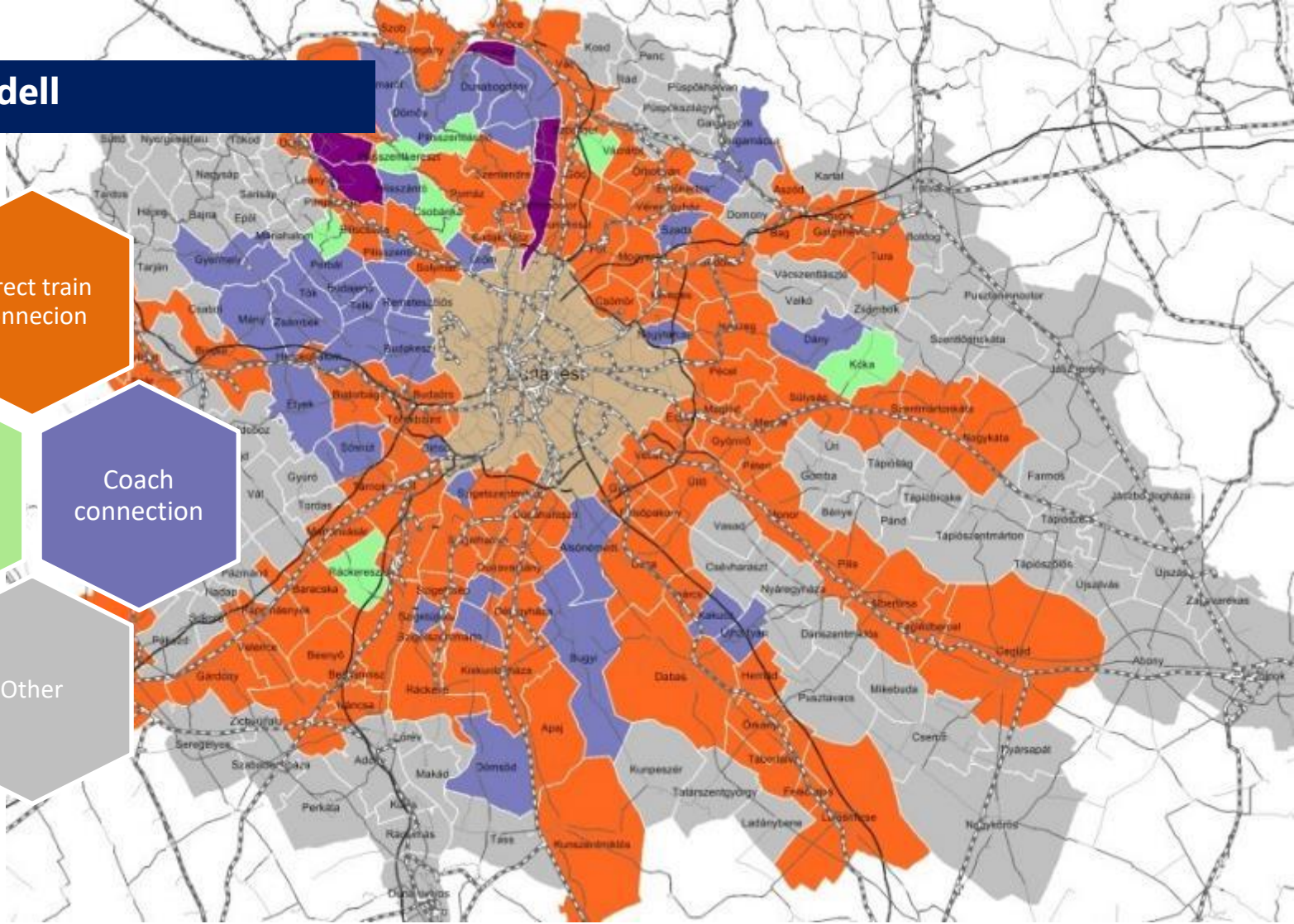
Direct train connecion

Indirect train connection

Coach connection

Weak connections

Other



Supply model

30 000 links

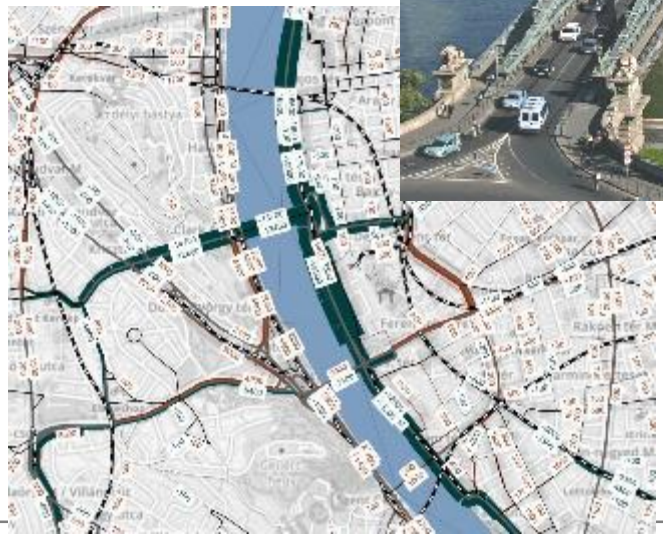
10 700 nodes

93 000 turns

NETWORK

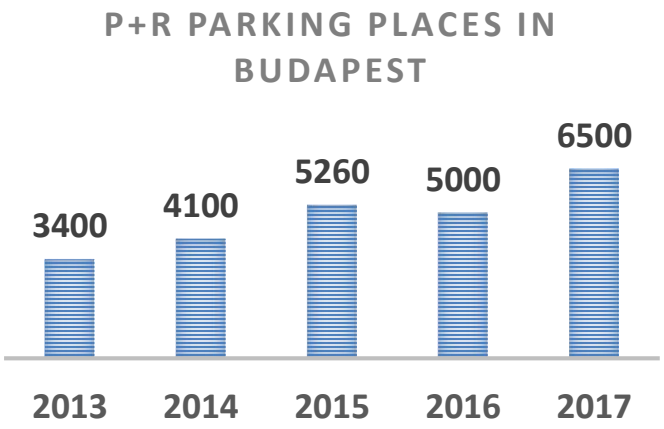
The usage of the model

- **Available for the public** (fill and sign a form is required)
- **Software independent**, but all of the registered usage done by PTV Visum
- **150+ external** usage
  - **Suburban railway** development
  - **Budapest Mobility Plan**
    50+ projects evaluated
- **50+ internal** usage
  - **Metro line** reconstruction
  - **Trolley network** extension
  - **Bridge** reconstruction



Extension of MTM features

- ✓ Modelling of **mode shift from/to cycling**
- ✓ **Modeling of sharing mobility** (bike sharing, car sharing)
- **Integration of accident data,** procurement of PTV safety modul
- **P+R, B+R feature** integration
- Development of **hourly matrices**
- Capacity increase for **dynamic assignment**

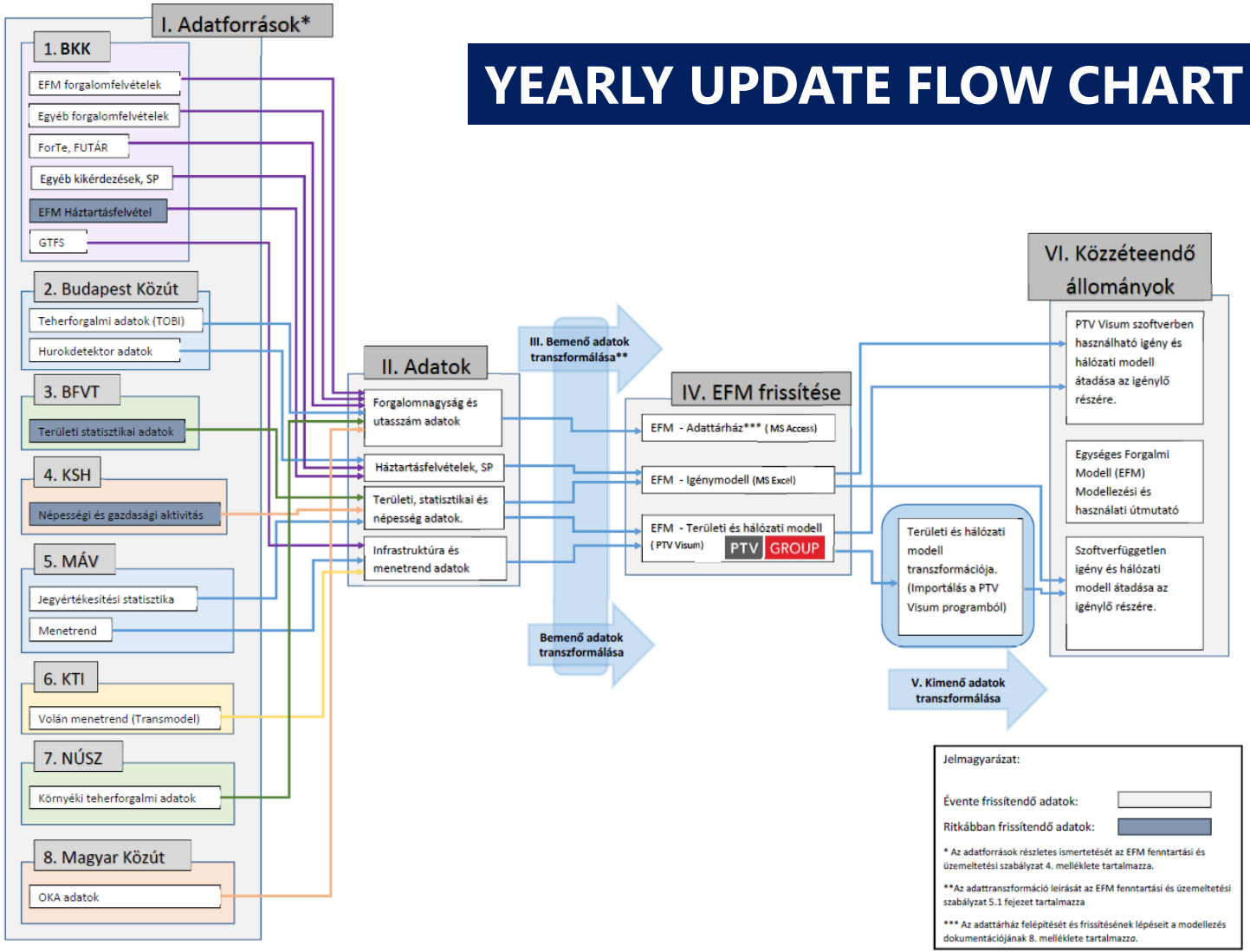


Improvement of MTM usability

- ✓ **Integration of the matrices** of Budapest and its agglomeration **into one pivot table**
- **Integration of demand model** into the PTV Visum software
- Passenger and traffic volumes **data warehouse** (independent from modelling)
- **Automated data transfer** among the MTM and various data sources

http://www.wtaconsulting.com/WTAConsulting/www.wtaconsulting.com/Lists/Photos/

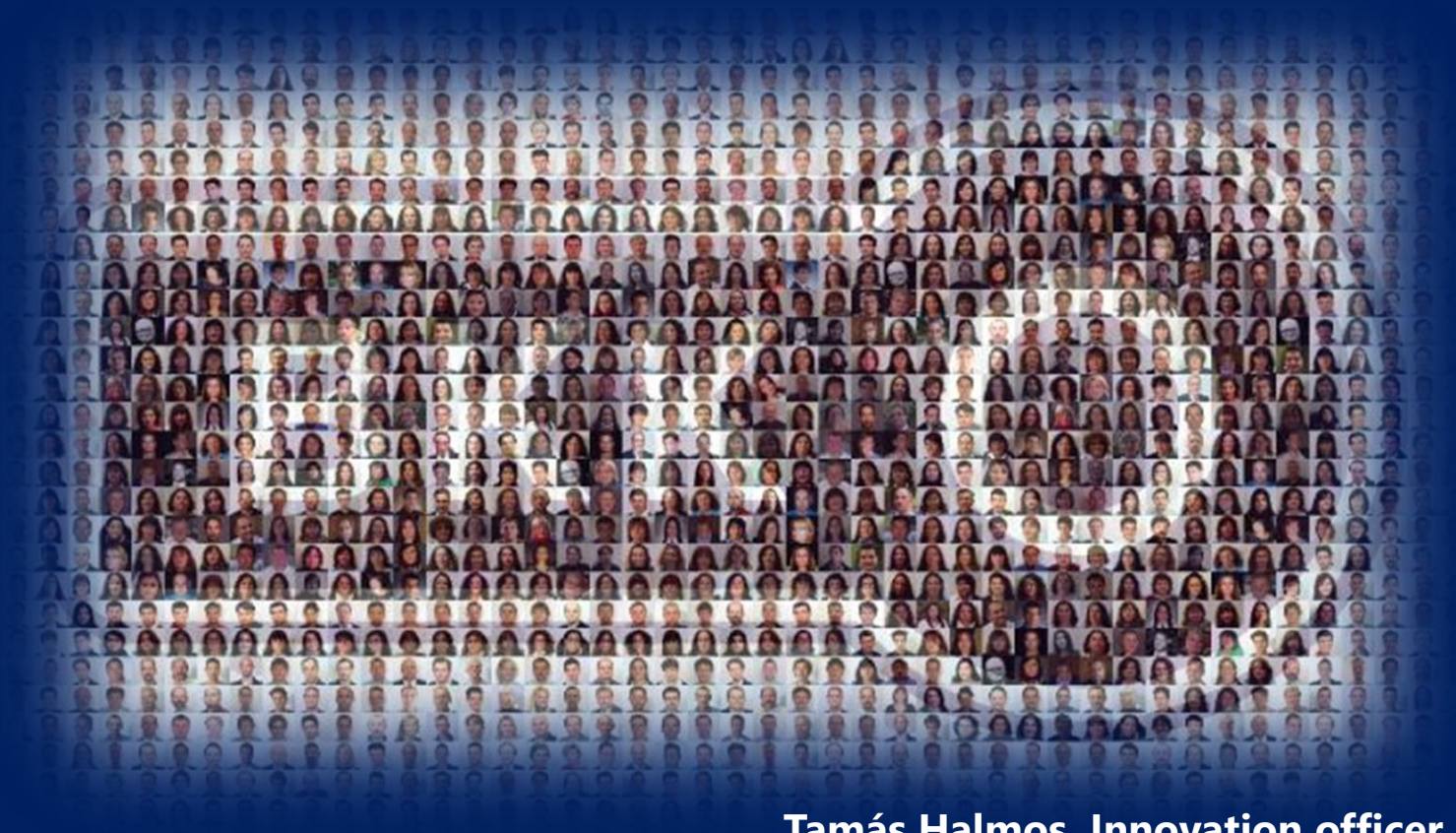
YEARLY UPDATE FLOW CHART



Data collection

- **Regular updates** done **based on a document**, developed together with the model
  - **Traffic counting** cross sections, methods
  - **Passenger data**
  - **Cyclist counting**
  - **Household survey** (demand model update)
- The document has been **revised in 2019**
  - **Digital data** sources where available
  - **Data quality** improvements

THANK YOU!



Tamás Halmos, Innovation officer
Tamas.Halmos@bkk.hu