

ANNEX III



*Mobility is freedom*

## Smart and Virtual Mobility



TECHNION – IIT

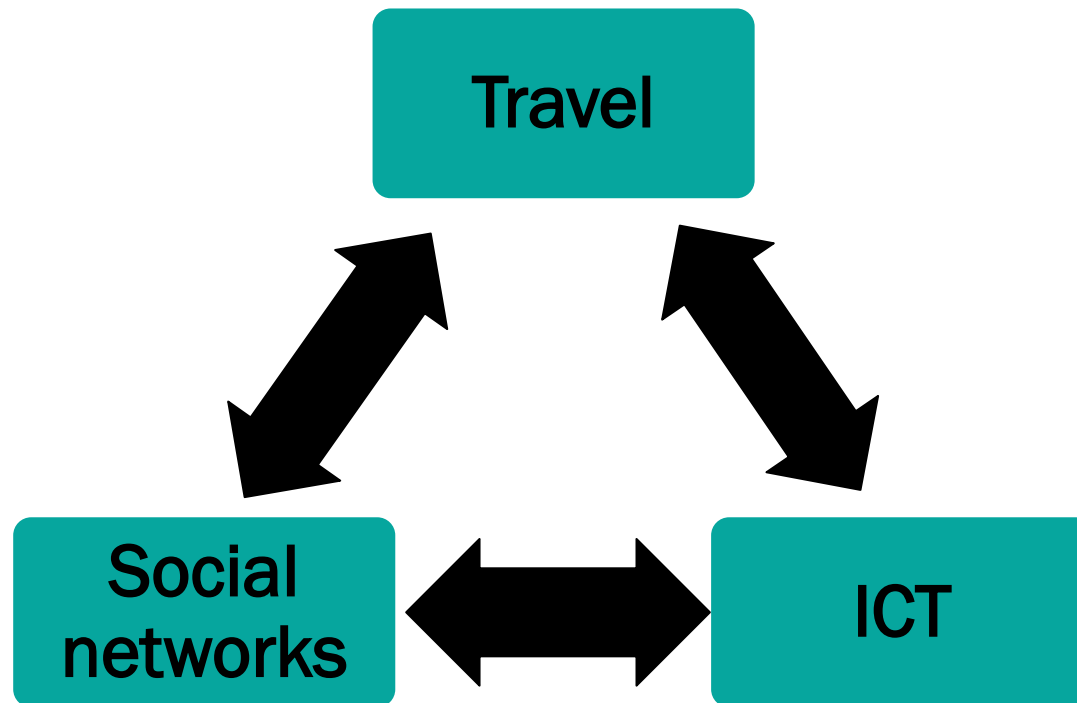
**Final Conference – Brussels May 2017**



This project has received funding from the European Union's Horizon 2020 research and innovation Programme under grant agreement No 640401.

## ICT, social networks and travel behavior

The **relationships between Travel and ICTs** has been thoroughly discussed in the literature on telecommunications-transportation relationships, with implications to **social interaction and travel**



## Transport and ICT Relationships

### What do we learn from past experience ?

The Substitution vs. Complementarity Debate

- complementarity- the generation of additional travel
- modification- the change in travel patterns
- neutrality – no effect

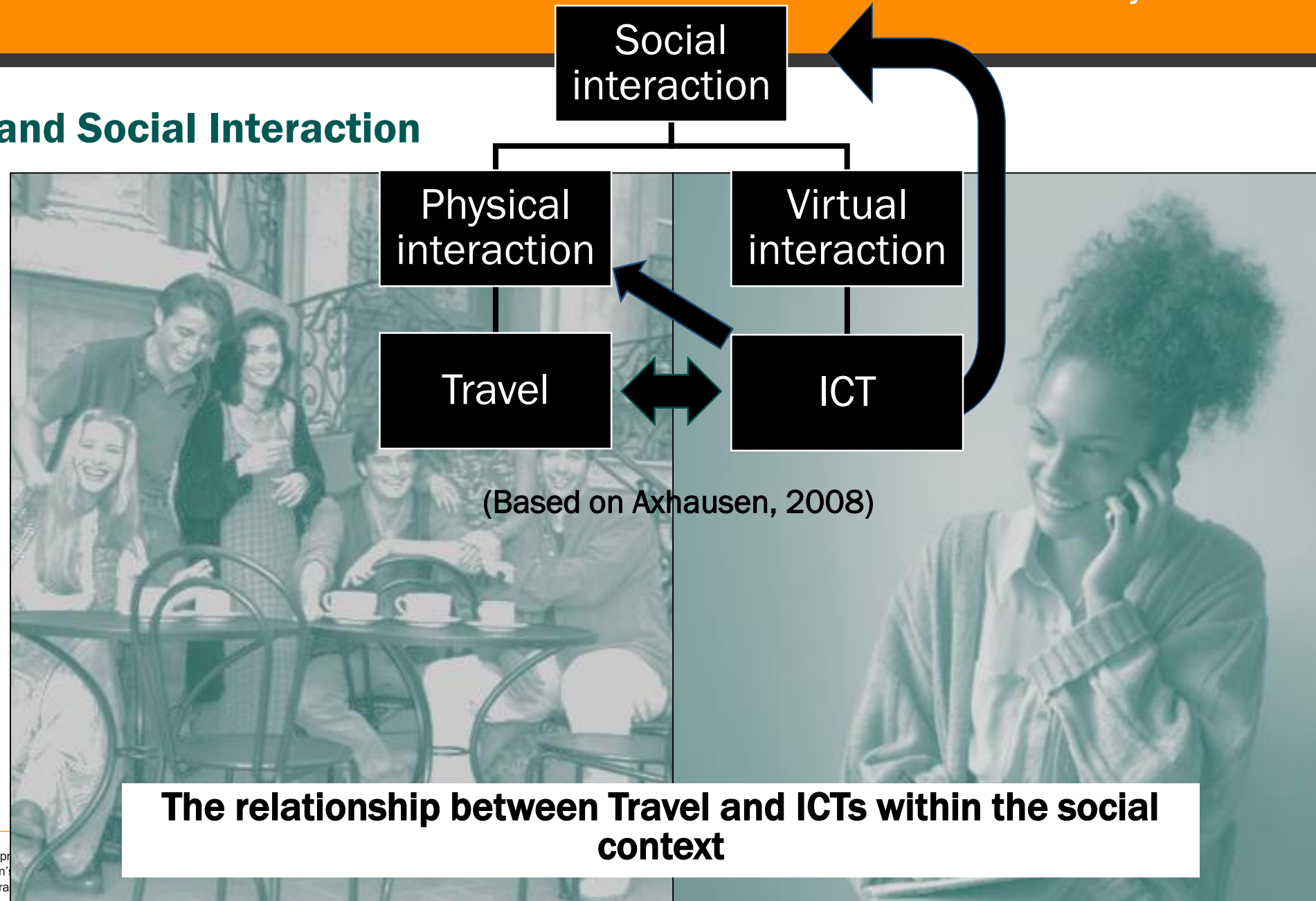
The news of the (partial) demise of travel and transportation was premature.

## Transport and ICT relationships The efficiency effect

Use of ICT contributes to the efficiency and logistics of the transport system and its operations, both public and private

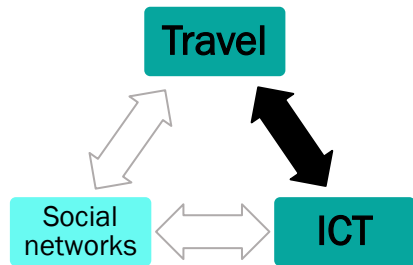
- Five ‘Olympic zeroes’  
no stock, no time lag, no fault, no breakdown, no paper
- **“Just- in –Time”** and “Total quality control “point to a new form of logistics : tighter flow management and enhanced productivity
- ‘No stock’ and ‘just-in-time’ production require smaller, but more frequent, deliveries  
Meaning- more transportation, more traffic

# Physical Mobility and Social Interaction



(Based on Axhausen, 2008)

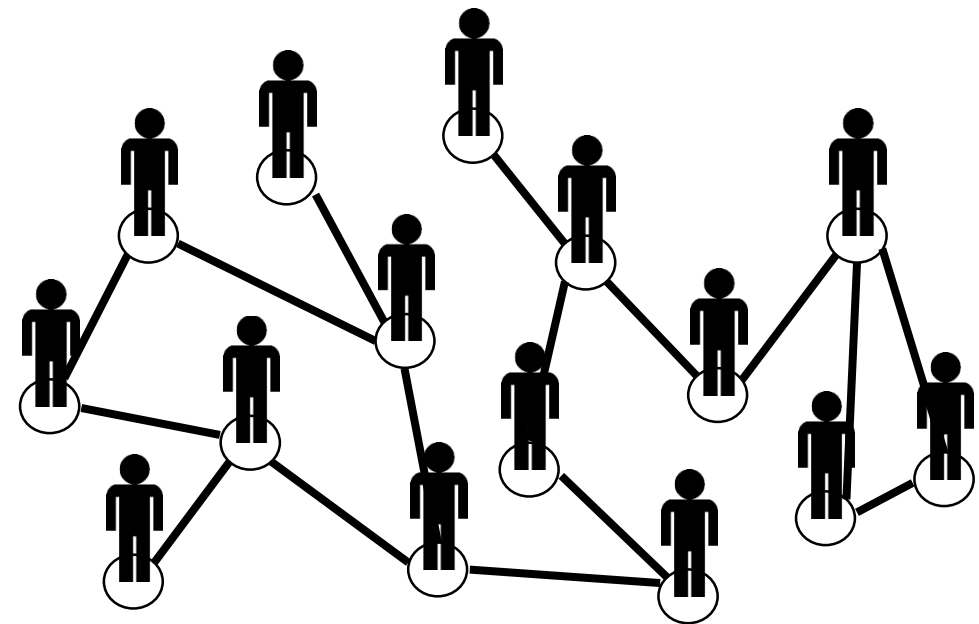
**The relationship between Travel and ICTs within the social context**



## Social Network

**Social network:** a structural representation of social relationships. each node is a person, group or organization; links between the nodes represent interactions or flows of resources

Social networks are dynamic structures. Ties are created and dissolved over the life course (Arentze & Timmermans, 2008; Sharmeen et al., 2014)



## Two mechanisms through which social networks may influence travel patterns

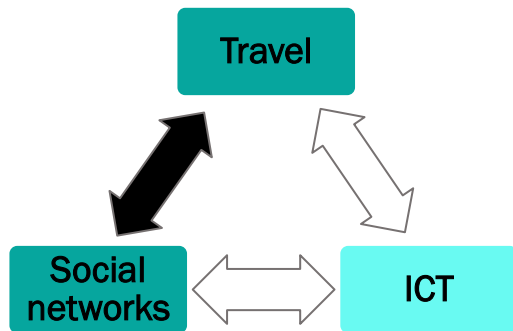
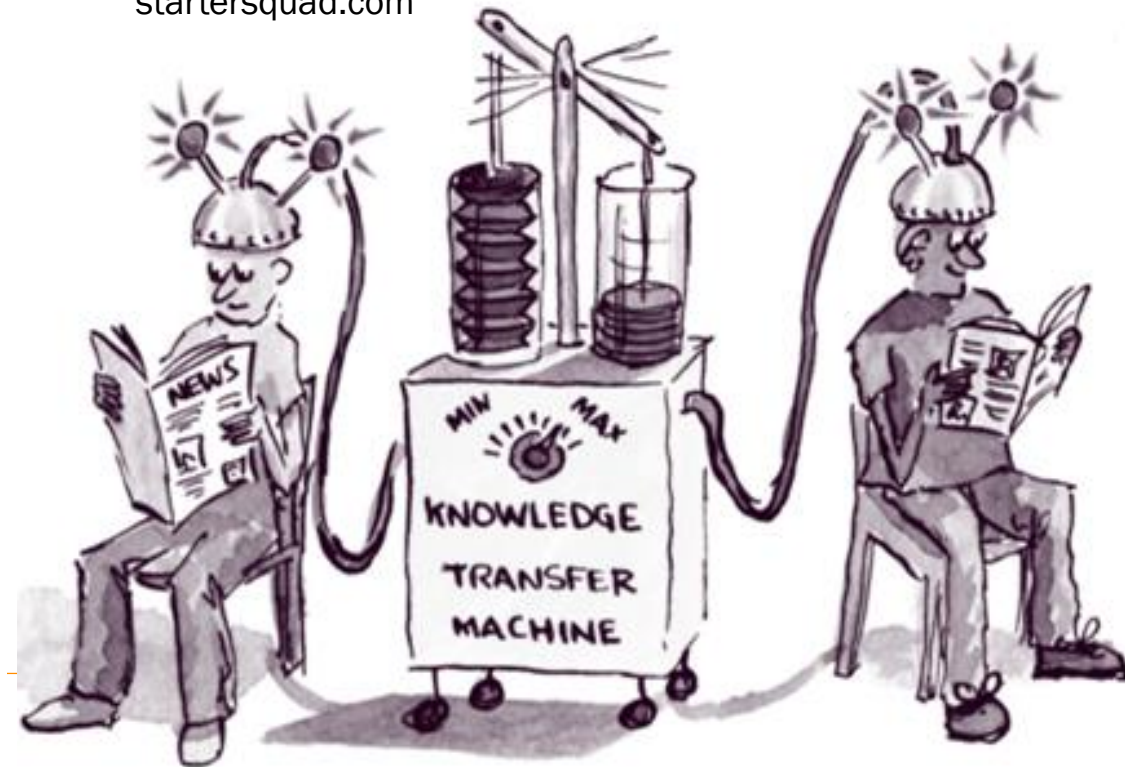
Performing joint activities with social network members

[talkbetweenpeople.wordpress.com](http://talkbetweenpeople.wordpress.com)



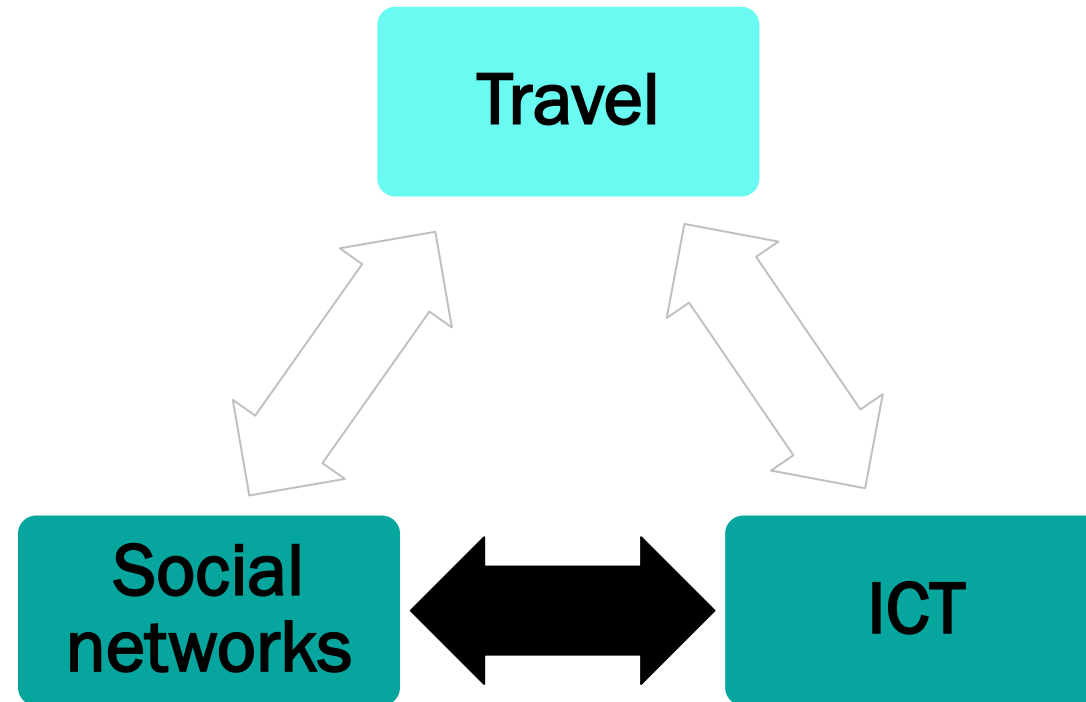
Exchanging knowledge and attitudes

[startersquad.com](http://startersquad.com)



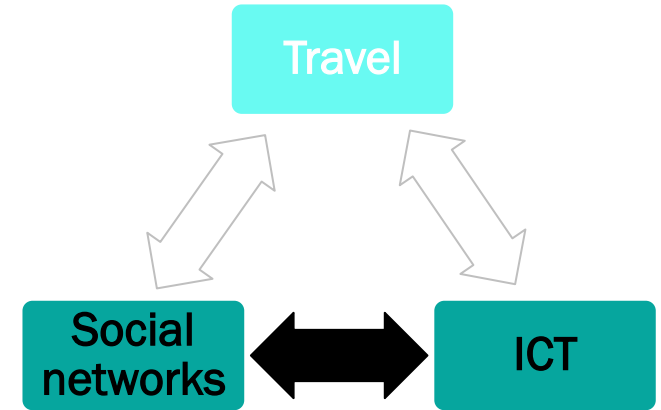
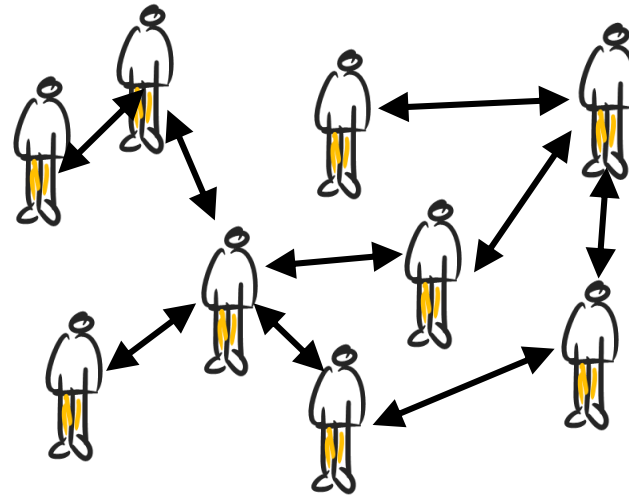
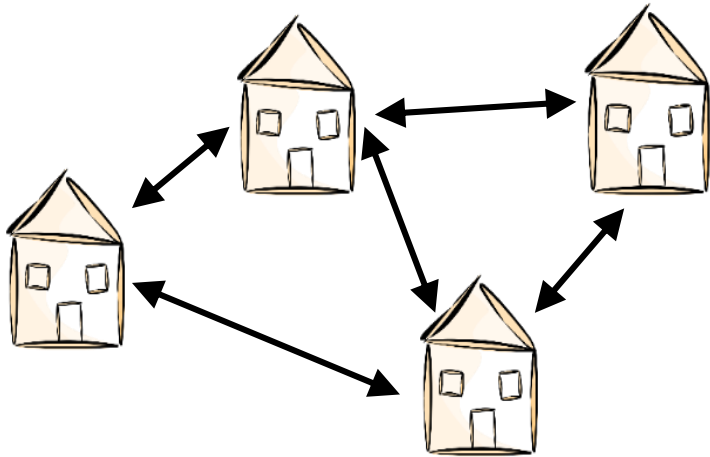
## Transport and ICT Relationships

ICT, particularly the fast adoption of mobile communication technologies, have led to fundamental changes in the spatial structure of connectivity and social networks.





A shift from place-to-place connectivity to person-to-person connectivity (Carrasco et al., 2008a; Kwan, 2007)



Social media as networking spaces and information resources may change the impact of the social dimension on travel behavior.

## New Social Structure

People have a wider spatial distribution of social networks than in the past.

A larger set of social contacts are active today than in the past and they overlap less in spatial terms.

The appearance of virtual social networks such as Facebook and changes in working patterns (home/hub-based, shorter working week days) have resulted in intertwining of leisure activities with other daily routines.

## New Social Structure

Advances in ICT systems, in recent years, are now redefining the way we connect and communicate between ourselves.

**These changes clearly have an impact upon travel and mobility within the urban space.**

We live in a world that is fast becoming digital in all its dimensions

People are now generating **new (large) data sets - tagged to space and time.**

Current transportation models are not equipped to deal with this flexibility



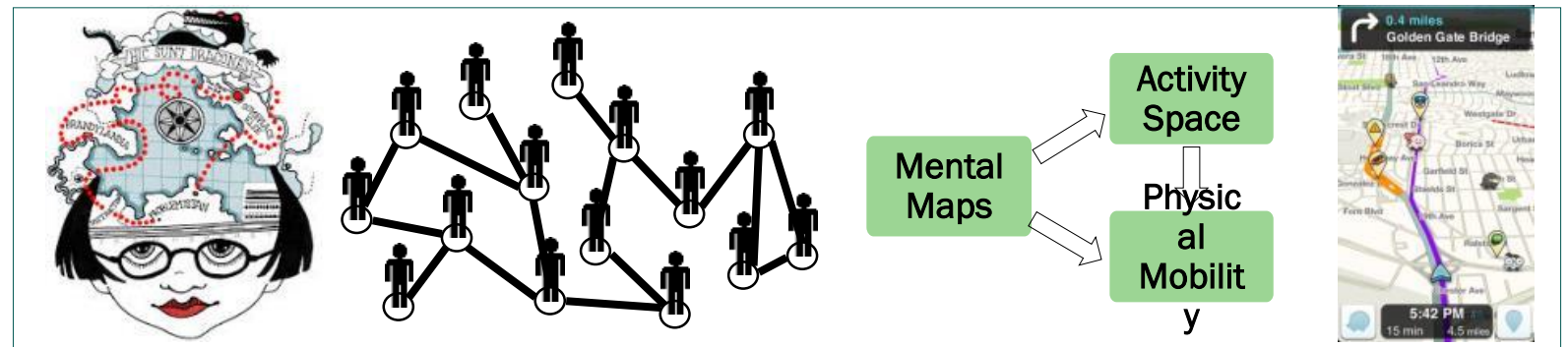
## We focused on how to:

- collaborate for Big Data sharing
- better inform the public and policy makers as to Big Data exploitation
- foster Big Data reliant smart and sustainable mobility.



## CHALLENGE

- Develop **standardized shared protocols** for transport authorities – taking into account **cultural diversity**.
- Develop a **geographical platform** which uses **integrated mobility data** to visualize all mobility aspects for individual users, transport operators and policy makers – online.
- **Philosophical questions:**
  - **Who gathers the data?**
  - **Who controls the data?**
  - **How to use the data?**



# THANK YOU!



*Mobility is freedom*

## For more information please contact:

Pnina Plaut (Prof.)

Technion – Israel Institute of Technology

[pninatech@gmail.com](mailto:pninatech@gmail.com)

Dalit Shach-Pinsly (Dr.)

Technion – Israel Institute of Technology

[pninatech@gmail.com](mailto:pninatech@gmail.com)



TECHNION – IIT



This project has received funding from the European Union's Horizon 2020 research and innovation Programme under grant agreement No 640401.