Long Term impact foresight
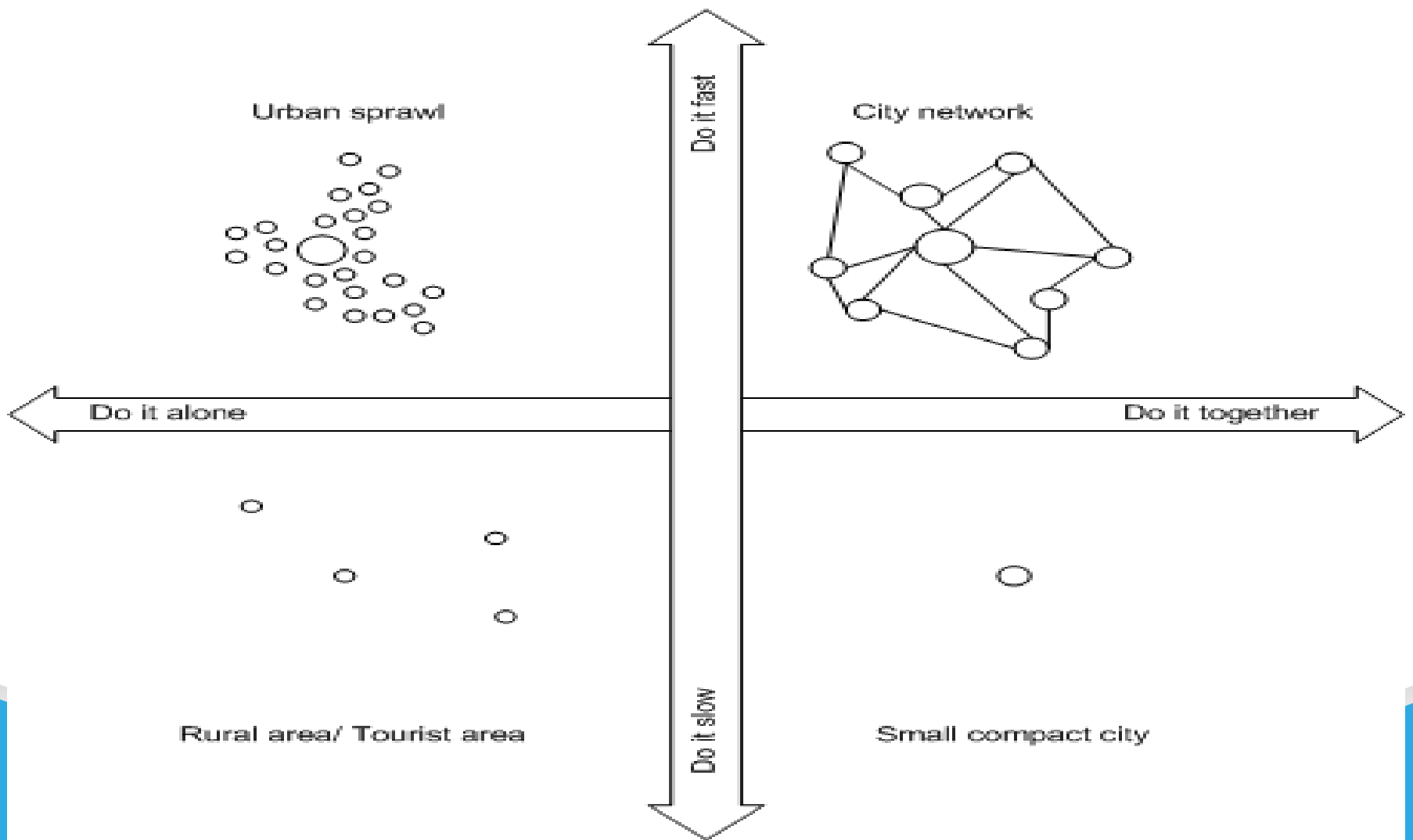
Carlo Sessa
(ISINNOVA
Institute of Studies for the Integration of Systems, IT

Mail: mc7920@mclink.it

www.citymobil2.eu

CityMobil2 – Impact scenarios framework
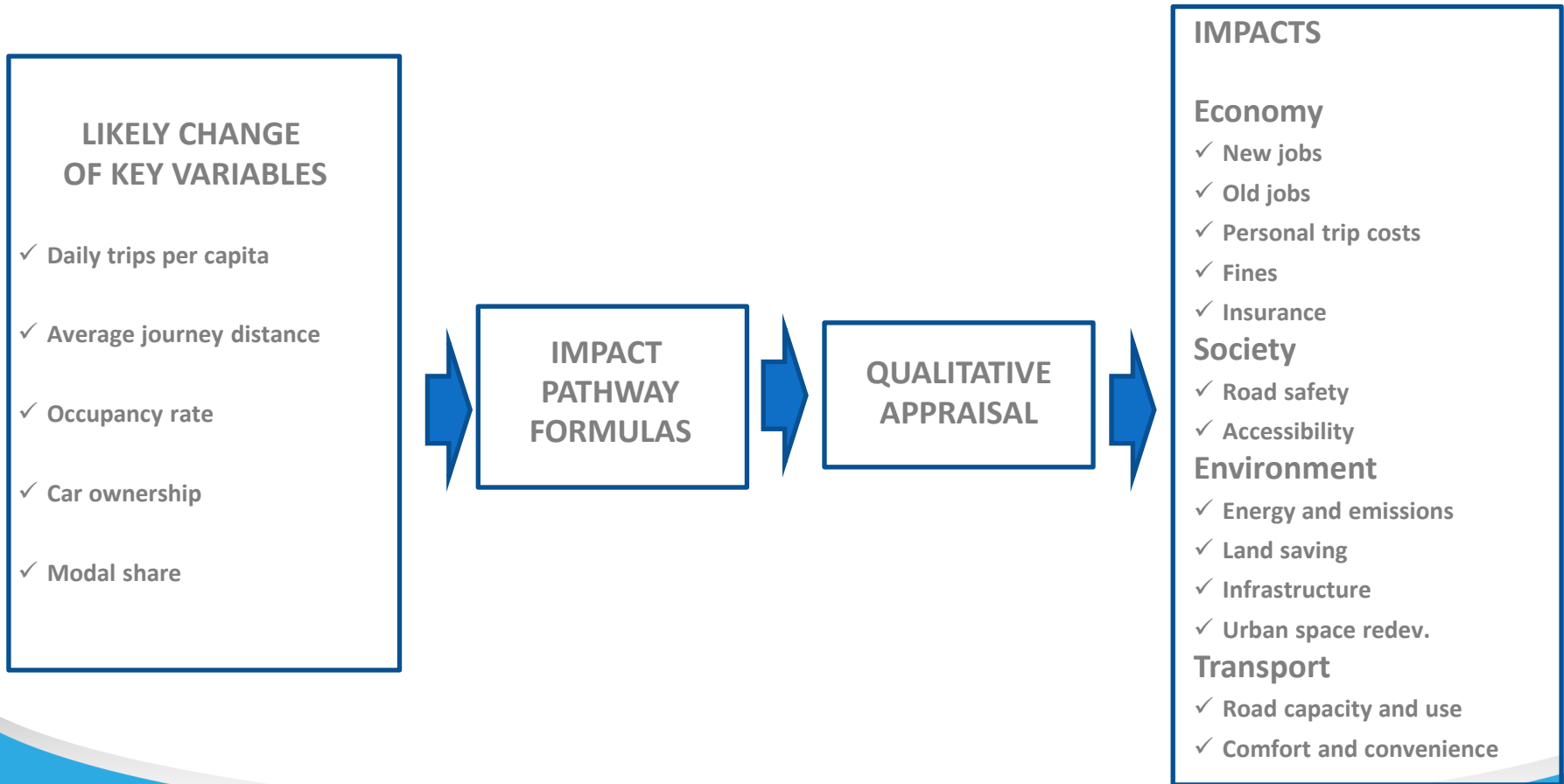
2 impact scenarios in 4 urban contexts

Scenario 1: Private self-driving cars (autonomous vehicles)

Private automation may increase accessibility to remote areas and facilitate urban sprawl, increase the distance and also the number of trips

Scenario 2: Fleet of shared cyber-cars (automated urban environment)

May increase deconcentrated urbanisation (poly-centricity) and nomadism by attracting citizens to live in places when and where flexible mobility options and living opportunities are available

CityMobil2 – Impact scenarios methodology

**LIKELY CHANGE
OF KEY VARIABLES**

- ✓ Daily trips per capita

- ✓ Average journey distance

- ✓ Occupancy rate

- ✓ Car ownership

- ✓ Modal share

**IMPACT
PATHWAY
FORMULAS**

**QUALITATIVE
APPRAISAL**

IMPACTS

Economy
- ✓ New jobs
- ✓ Old jobs
- ✓ Personal trip costs
- ✓ Fines
- ✓ Insurance

Society
- ✓ Road safety
- ✓ Accessibility

Environment
- ✓ Energy and emissions
- ✓ Land saving
- ✓ Infrastructure
- ✓ Urban space redev.

Transport
- ✓ Road capacity and use
- ✓ Comfort and convenience

CityMobil2

Energy and emissions

Scenario 1

- ✓ Increased VKM could not be compensated by better vehicle performances, use of platoons and lower cruising speeds

Scenario 2

- ✓ Waste from relocation of empty vehicles could be balanced by pervasive car/ride sharing which becomes a kind of flexible public transport system

CityMobil2

Land use

Scenario 1

- ✓ Limited saving of parking space
- ✓ High demand on land use outside city areas
- ✓ Higher infrastructure and city running costs

Scenario 2

- ✓ Very low need for car parks everywhere
- ✓ Easier to manage the interface with the public transport and car sharing fleets

CityMobil2

Urban Requalification

Scenario 1

✓ Most of the urban infrastructure expenditure still goes to maintain a urban road network. Not much impact on urban requalification

Scenario 2

✓ More liveable cities, thanks to the opportunity to use parking facilities for other purposes leading to new high quality urban fabric

✓ Opportunity to rethink and renovate the urban environment for pedestrians, automated vehicles and deliveries

CityMobil2

Safety

Scenario 1

- ✓ Society will not allow a system on the road that is less safe than today. So, at worse, safety will be neutral

Scenario 2

- ✓ Reduction in accidents caused by drinking-driving and fatigue
- ✓ On rural roads, the current main causes of accidents (overtaking & intersection crossing) will cease to exist

Accessibility

Scenario 1

- ✓ Accessibility for disabled & elderly people as well as ease of access to reach a destination will improve

- ✓ Forced relocation - accessible areas could push up property prices, thereby pushing poorer people out of the city

- ✓ One automated car can do the job of two conventional cars in remote locations

Scenario 2

- ✓ Automated vehicles will improve significantly accessibility in rural areas. A shared service could involve placing a couple of vehicles at the disposal of village for different purposes: transport people, mail, groceries, etc.

- ✓ High seasonal demand in touristic areas = huge potential for automated shared transport to make areas accessible and manage visitors flows

- ✓ Accessibility enabling economic development of remote suburbs

CityMobil2

Other impacts (common to both scenarios)

- ✓ **Affordability** is a key issue: How much will the new vehicle cost? What business model for new collective fleets? If based on cost per minute, service could be unaffordable. Need to consider subsidies.

- ✓ **Health**: what impact will automated demand responsive vehicles have on our health? Will we cease to walk or ride a bike? Cities are promoting active travel today for first/last mile.

- ✓ **Personal security**: Interface will make a huge difference to acceptability and perception of personal security. Some feel safer in their own car rather than a 'sharing car' (comparison with the introduction of lifts).

- ✓ **Perception of travel time** will change – use travel as opportunity to work or sleep.

CityMobil2

CityMobil2

THANKS FOR LISTENING

Carlo Sessa

mc7920@mclink.it