

Block 1: Introduction to urban infrastructures

3. The main dimensions of urban infrastructures

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Session overview

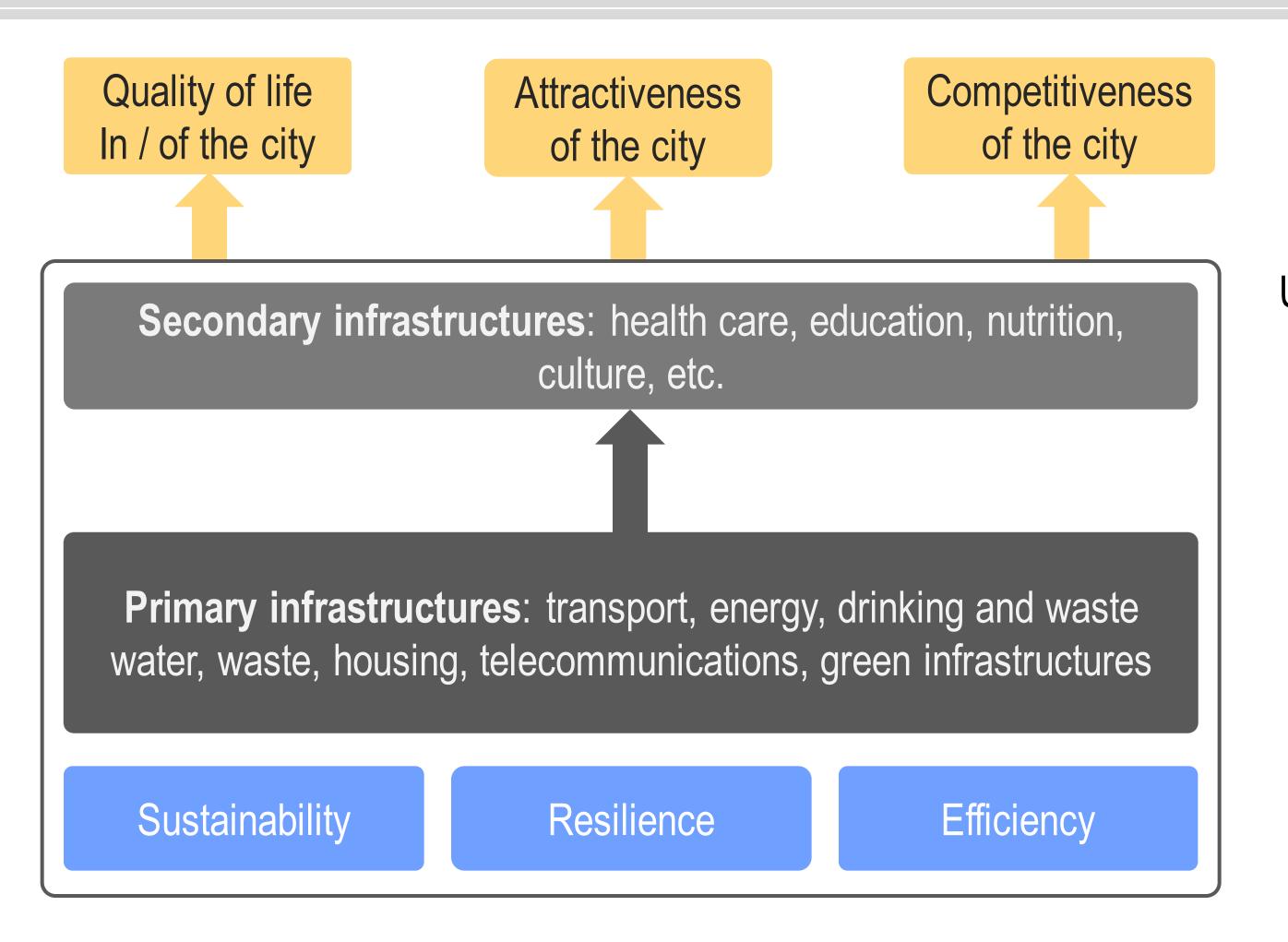


In this session, you will be introduced to the <u>main dimensions</u> of urban infrastructure systems; I will do this in three steps:

- Outline of <u>our framework</u> of city management and governance
- Presentation of the <u>main dimensions</u> of urban infrastructures, namely:
 - the <u>technical</u> dimension
 - the economic dimension
 - the <u>jurisdictional</u> dimension
 - the social dimension
 - the environmental dimension
- I will conclude by defining cities as dynamic <u>socio-technical</u> <u>systems</u>

Our framework of city management and governance





Urban system

The technical dimension



The services layer: transportation services (truck, car, bus, taxi, bike, train, metro, tram); energy services (electricity, gas, district heating); water, wastewater and waste services; communications services (telecom, cable), environmental services (greens)



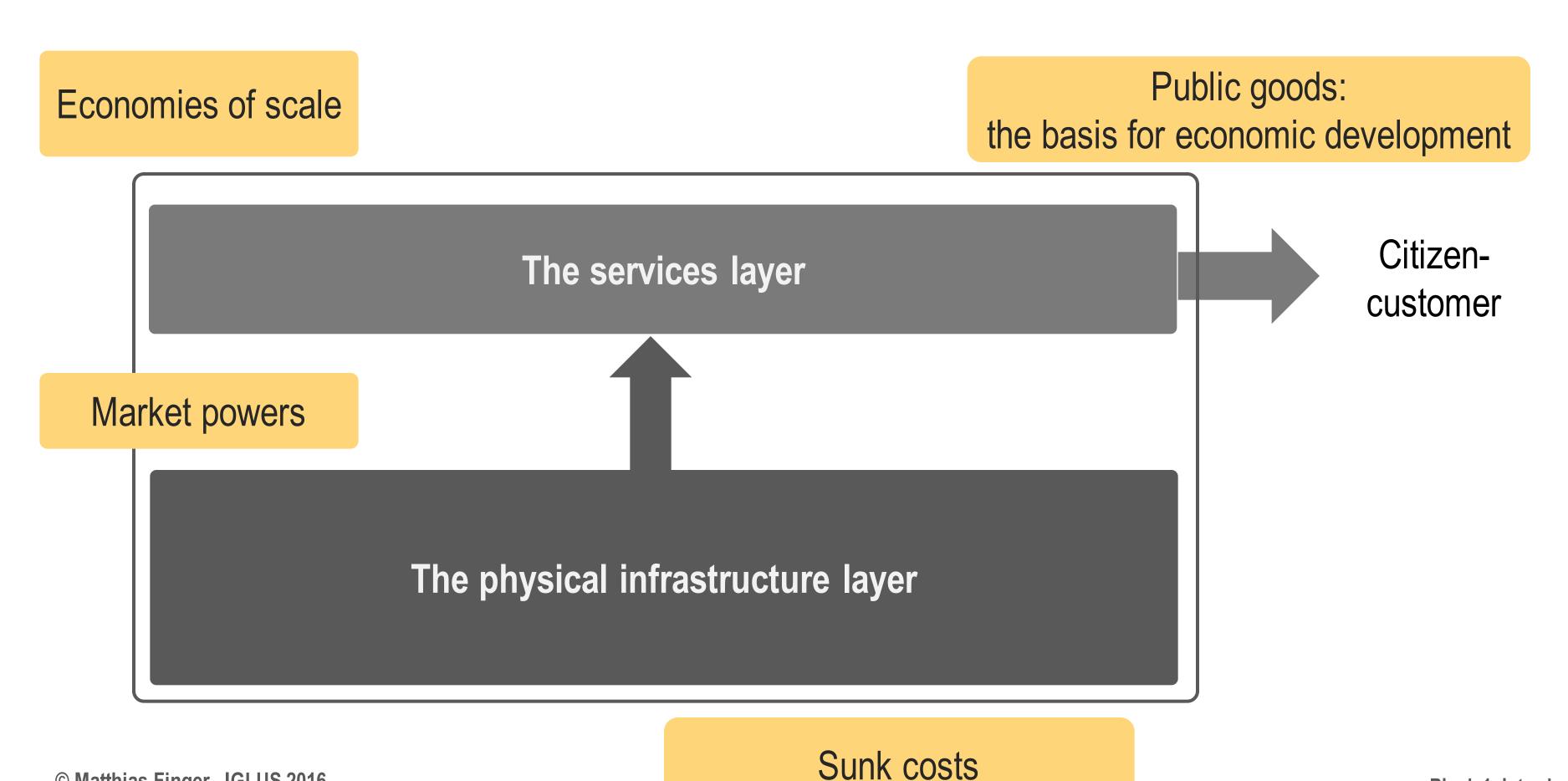
The physical infrastructure layer: roads (truck, car, bus, taxi, bike), tracks (train, metro, tram), cables (electricity, telecom), pipes (gas, water, wastewater), greens, buildings

Lines + nodes = networks

Citizencustomer

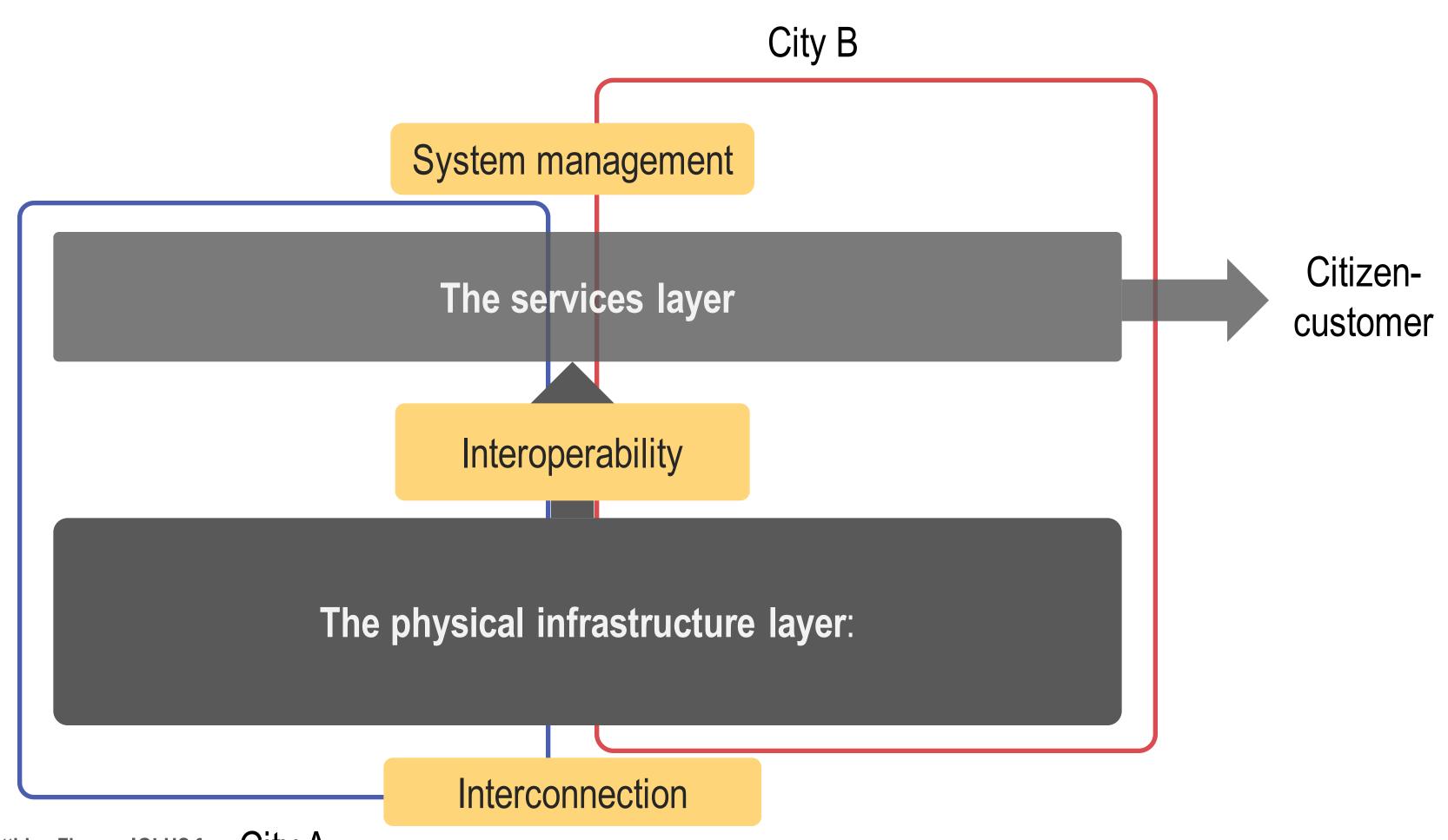
The economic dimension





The jurisdictional dimension

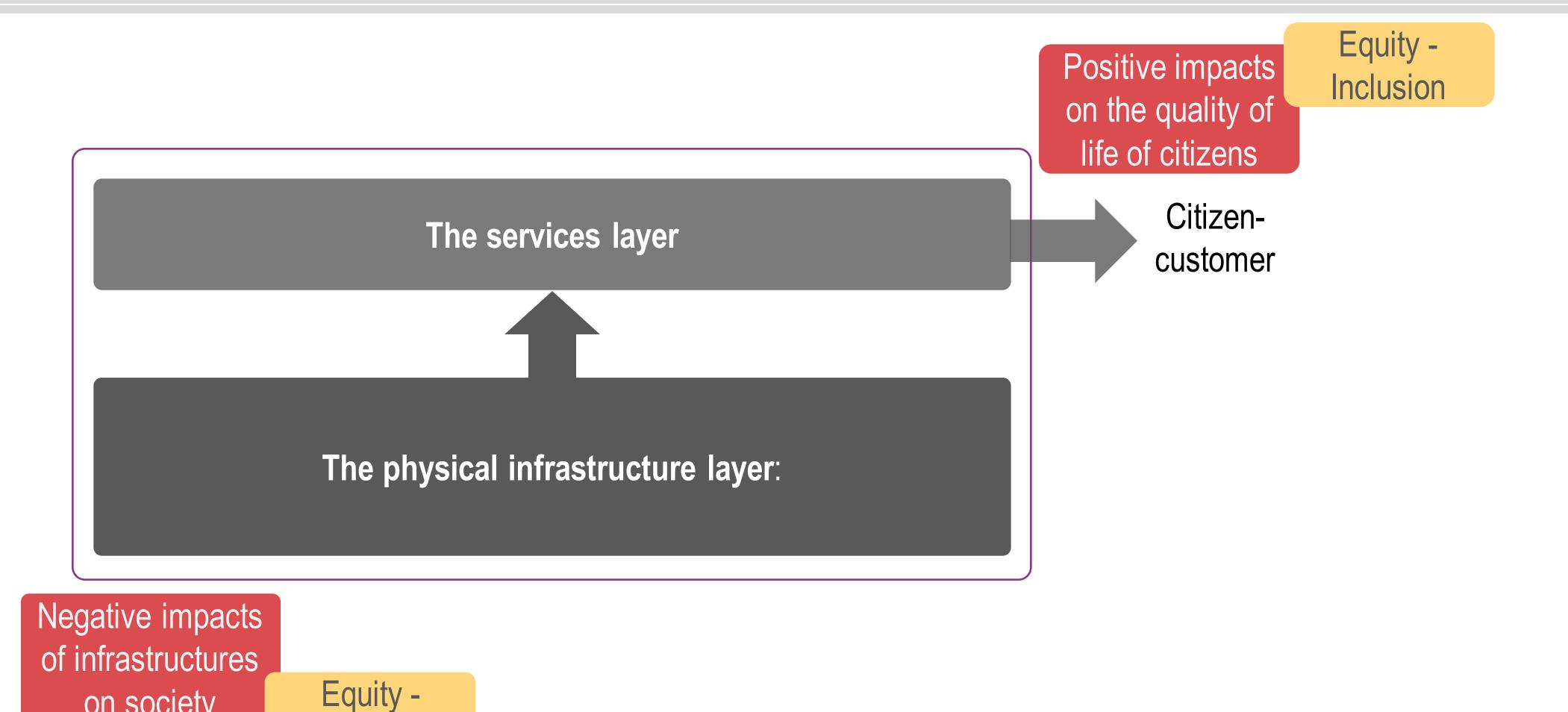




The social dimension

Exclusion





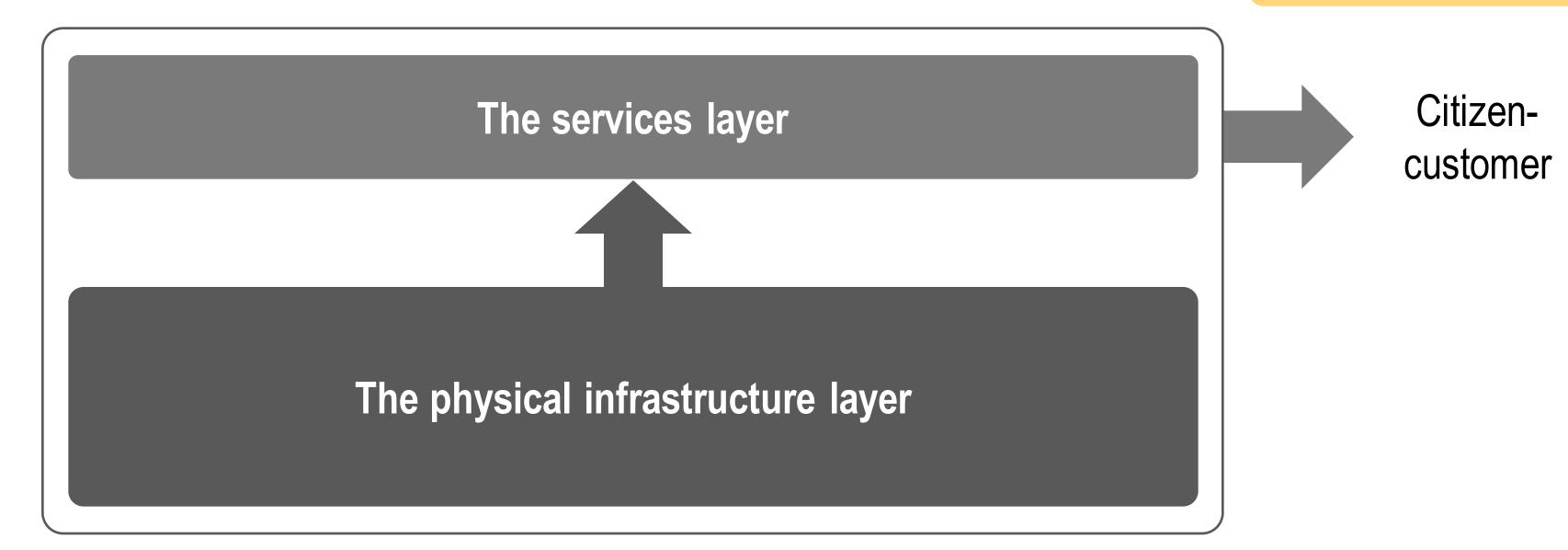
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on society

The environmental dimension



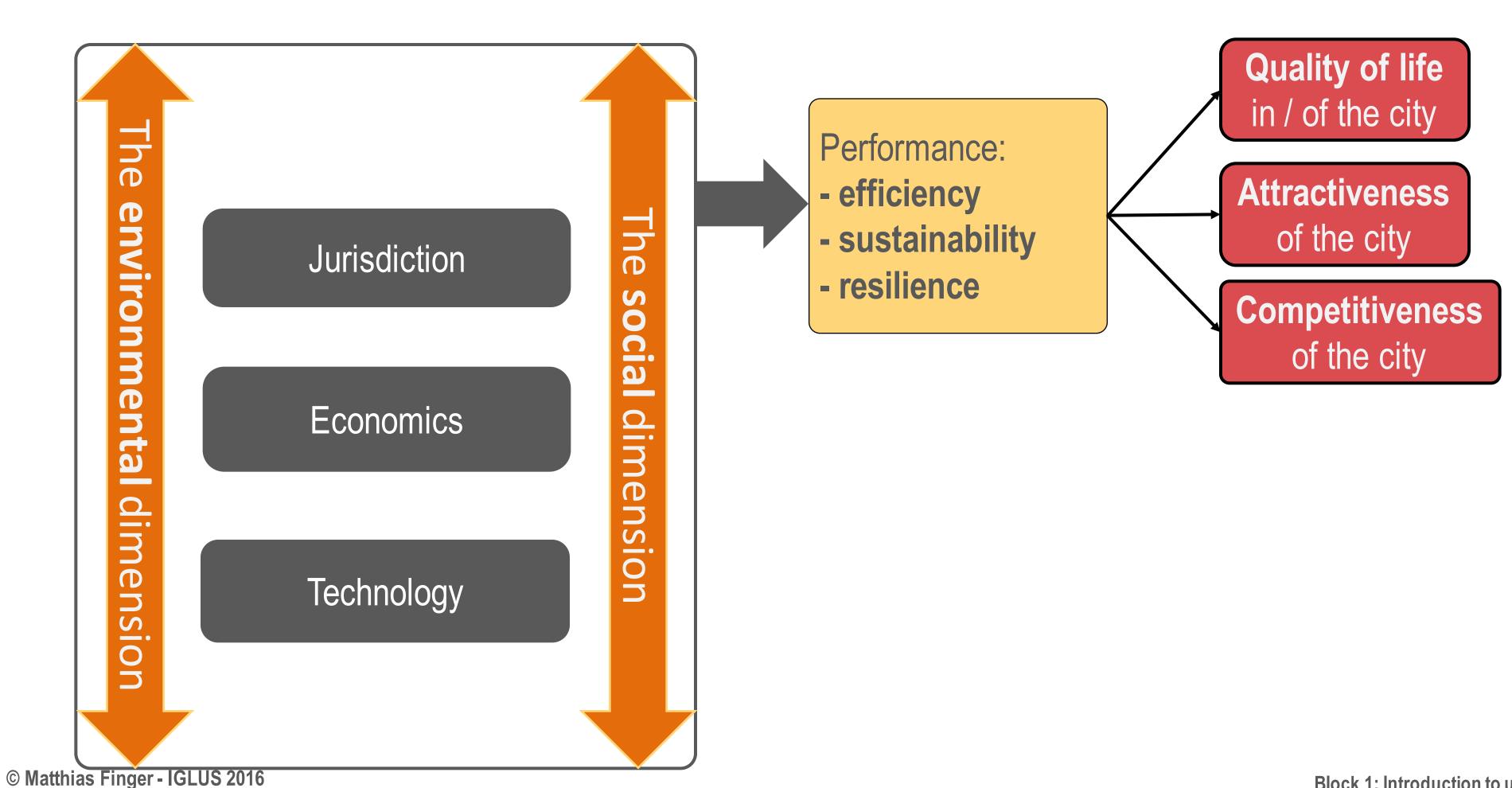
Positive environmental impacts (e.g., green infrastructures; clean energy)



Negative impacts of infrastructures on the environment (e.g., CO₂ emissions, noise, pollutants, land use)

The city as a complex socio-technical system





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Conclusion



- In this session we have seen the different <u>dimensions</u> of urban infrastructure systems
- In the next session, you will hear from a <u>practitioner</u> how this all plays out in reality
- I will then come back to present the two main <u>analytical perspectives</u> for approaching urban infrastructure systems