



# Users as Actors or Factors in Smart Cities – Design For, With or By the Users

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# What is a Smart City?

- It is not only about which ICT solutions that should be implemented in the city!
- It is about being:
  - Smart
    - Compact: access for residents to achivele their daily needs
    - Complete: multi-cultural environment
    - Connected: access to transit, green space, and cultural and civic institutions
  - Safe
    - Public spaces being fronted with buildings with windows
  - Sustainable
    - Located close to potable water and fresh food resources
    - Take advantage of natural light and cross ventilation
    - Life-cycle perspective on buildings





# What is a Smart City?

But mainly it is about the  
**CITIZENS** and their  
needs!





# Challenges for smart cities

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- Jobs
  - Climate change
  - Traffic
  - Energy supply
  - Population growth
  - Water scarcity
  - Waste management
  - Increased social inequality
  - Citizens Quality of Life



# Literature study of Smart City initiatives

- Developing smart city services FOR citizens –  
"Enhancing quality of life"
  - Increasing public safety – disaster management
  - Energy saving solutions
  - Crowd sensing solutions for cities
  - Intelligent lighting
  - Systems for citizen engagement in urban processes – smart citizen apps (citizens give input)
  - Systems that support citizen engagement in policy making processes – e.g. Local decision making



# Common perspectives

- Citizens in focus – but not explicit what or why
- Citizens as sensors/monitors
- Citizens as data/content providers to city systems
- No co-creation: Citizen engagement in design processes is very rarely being reported on
- Citizen needs not in focus: Citizens needs not clearly described in development/innovation projects
- Mainly involved in testing of products and services; if even that
- Users of smart city solutions? Citizens or city leaders?







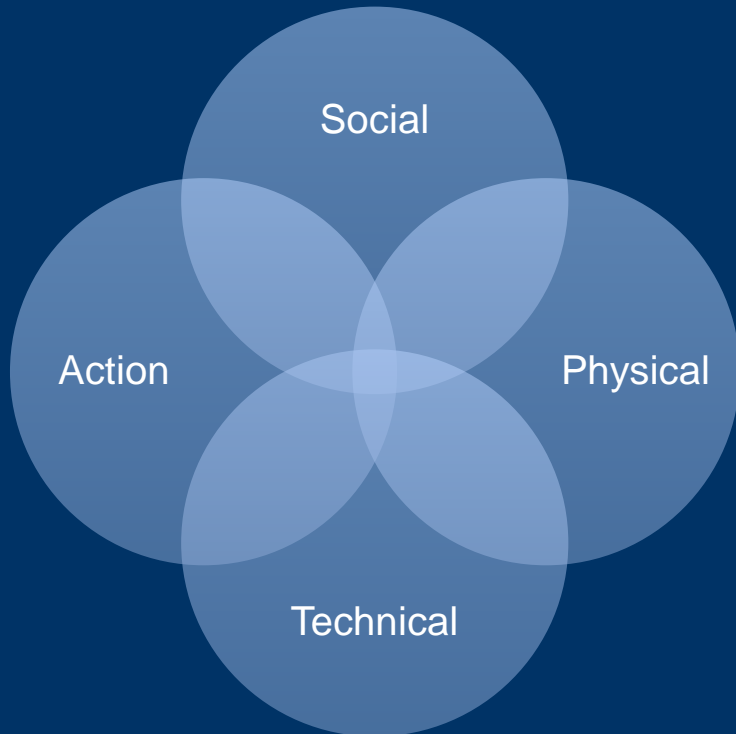
# 3 views of citizen participation in smart cities

1. Participate and contribute to the city as data providers motivated to contribute to services they can use themselves
2. Participate in urban planning initiatives and give local input to decision making
3. Participate in development of smart city services that enables the smart cities (a more uncommon approach to smart cities)





# Smart City Interacting Dimensions







# Citizen Actors or Citizen Factors?

- Citizen as actors:
  - Focus for researchers/developers: understanding human needs, actions, goals, thoughts, experiences and dreams
  - View on the citizen: Knowledgeable, important, insightful, value creator and value capturer, empowered
- Citizens as factor:
  - Focus for researchers/developers: get data to analysed to understand citizens actions, movement, temperature, location, etc
  - View on citizen: Important, data provider, sensor, value creator,



# Data driven smart city

- Connecting more end points and sensors to gather data for data's sake produces simply more data – not more value.
- Data adds value when it creates insights into unforeseen opportunities or improve quality of life for citizens
- Focus on the outcome – not the output!



# Designing FOR citizens - Citizens as Factors

- Citizens engaged relatively late in the development/innovation process
- Mainly involved to verify requirements, designs and prototypes
- Designers are active, they govern and drive the process
- Citizens are passive, data providers
- Interviews and surveys, desk-top research, sensor systems, netnography





# Design WITH Citizens - Citizens as Actors

- Co-creation is based on human behavior and needs as input for the innovation
- Citizens engaged throughout the ideation, design, implementation and evaluation process
- Designers are active, they facilitate design and development activities
- Citizens are active, they govern implementation and evaluation activities
- Living Lab approach suitable using co-creative methods



# Design BY Citizens



- Citizens initiate and drive the process
- Citizens inspire idea generation, create prototypes, produce content, develop the system/subsystem
- Lead-user methods can be used
- Open Data can be a driver for development BY citizens
- Maker Spaces can be a trigger for BY approach





## Why Important?

- People want to be involved, not only contribute
- People want to feel that their contributions matter and give results
- End-users are innovative
- Ethical right





*Ask not what you can  
do for the citizen, but  
what the citizen can do  
with you*







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# Thank You!



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