



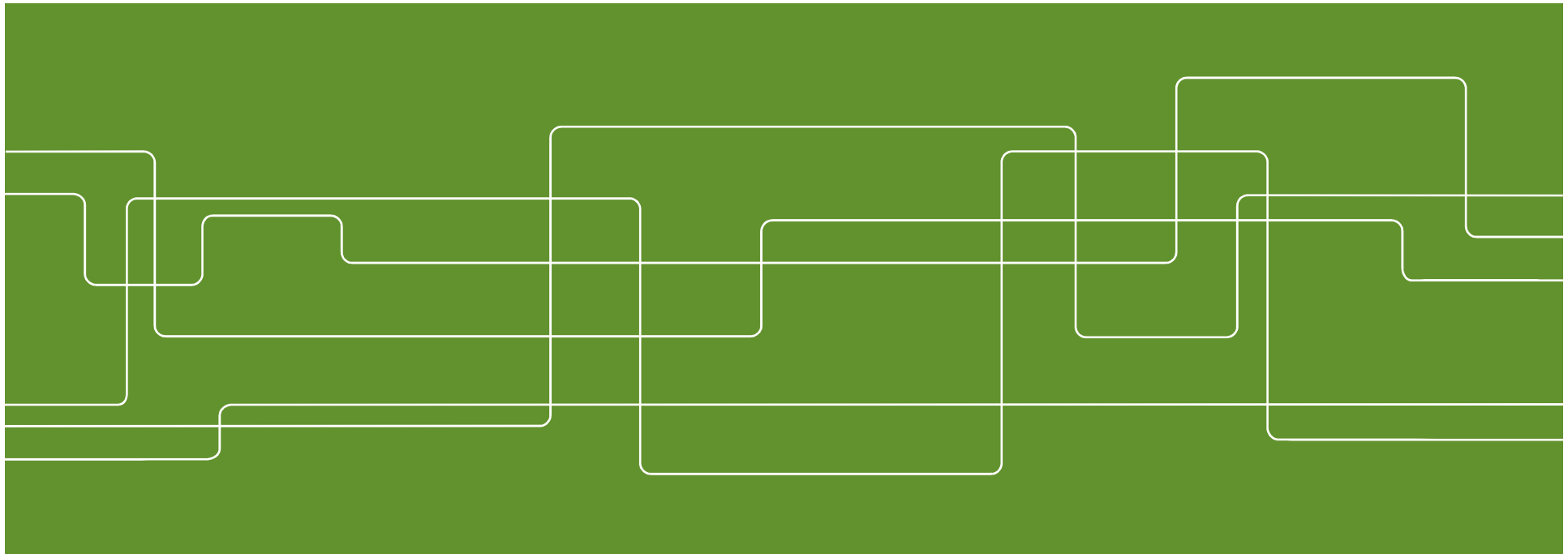
CENTRE FOR **SUSTAINABLE** **COMMUNICATIONS**

Smart Sustainable Cities: Definition and Challenges

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Historical backdrop

- Globalisation of environmental problems & sustainable development
- Urbanisation and urban growth
- Sustainable urban development & sustainable cities
- Information and communication technologies
- Smart cities



Defining the Smart Sustainable City

An aggregate concept: smart + sustainable + city

Inductive and descriptive, bottom-up, based on what is “out there”.

Deductive and normative, top-down, based on what the concept should be.

(Often these blend.)





Defining the Smart **Sustainable** City

- Sustainable as the normative, desired outcome
- Sustainable speaks of performance rather than features (how)
- Interpreted based on the Bruntland definition, combined with the Swedish generational target.



Defining the Smart **Sustainable** City

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.” (Bruntland report)



Defining the Smart **Sustainable** City

“the overall goal of Swedish environmental policy is to hand over to the next generation a society in which the major environmental problems in Sweden have been solved, *without increasing environmental and health problems outside Sweden’s borders*” (miljomal.nu)

A diagram illustrating the relationship between a city and its hinterland. A dark brown silhouette of a city skyline is shown within a semi-circular frame. The text 'The City' is written in teal above the skyline. To the left of the frame, the text 'The hinterland' is written in teal. The entire scene is set against a green background that represents the ground, with a white step-like shape on the left side.

The City

The hinterland



Defining the **Smart** Sustainable City

- Smart as instrumental rather than normative – smart does not equal sustainable!
- Smart as a feature rather than a sign of performance (Neirotti et al. 2014)
- An empirical category of products, services and product-service systems, distinguished by being or being dependent on ICT to fulfill its intended function.

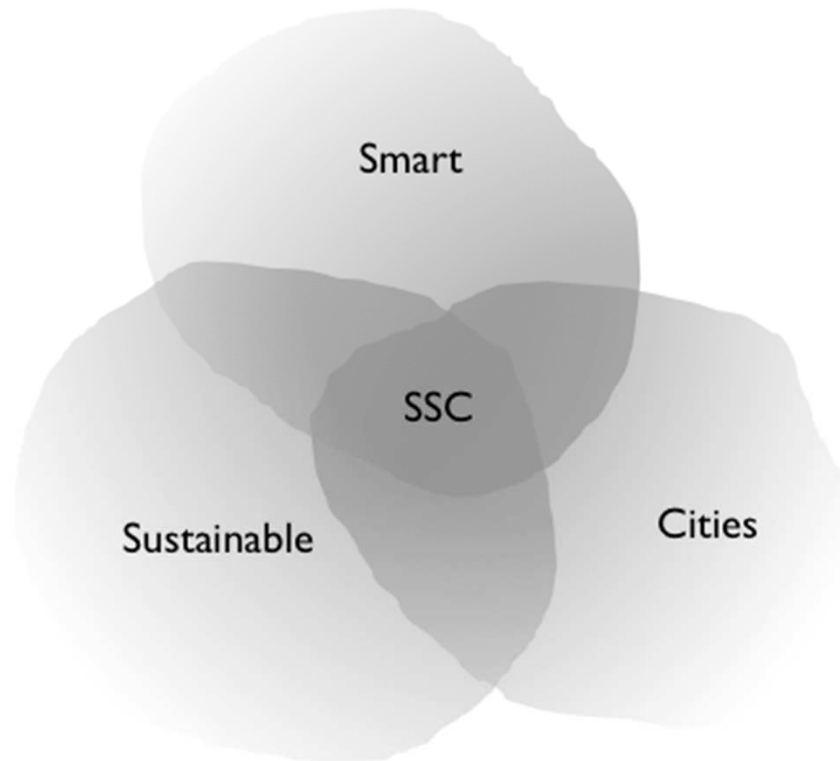


Defining the Smart Sustainable **City**

- Describing the types of human structures and environments where smart solutions for sustainable development may be identified and used.
- I.e. we are not speaking of industry, national parks and rural areas.
- However, definitions of “urban” varies.



The Smart Sustainable City





The Smart Sustainable City

A Smart Sustainable City is a city that

- meets the needs of its present inhabitants
- without compromising the ability for other people or future generations to meet their needs, and thus, does not exceed local or planetary environmental limitations, and
- where this is supported by ICT.



Five Challenges for Smart Sustainable Cities

- Strategic assessment – are we doing the right thing?
- Mitigating measures – addressing rebound effects
- Top-down and bottom-up – large scale or small scale: can these be combined?
- Competence – cities as customers
- Governance – not only devices but also organisations need to be connected



Thank you!

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Learn more about CESC:

www.cesc.kth.se

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Defining the **Smart Sustainable City**

“A Smart City is a place where the traditional networks and services are made more efficient with the use of digital and telecommunication technologies, for the benefit of its inhabitants and businesses” (European parliament Policy Dep. A 2014)

“when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance” (Allwinkle & Cruickshank (2011, p. 50)

“places where information technology is combined with infrastructure, architecture, everyday objects, and even our own bodies to address social, economic and environmental problems” (Townsend 2013, p. 15)