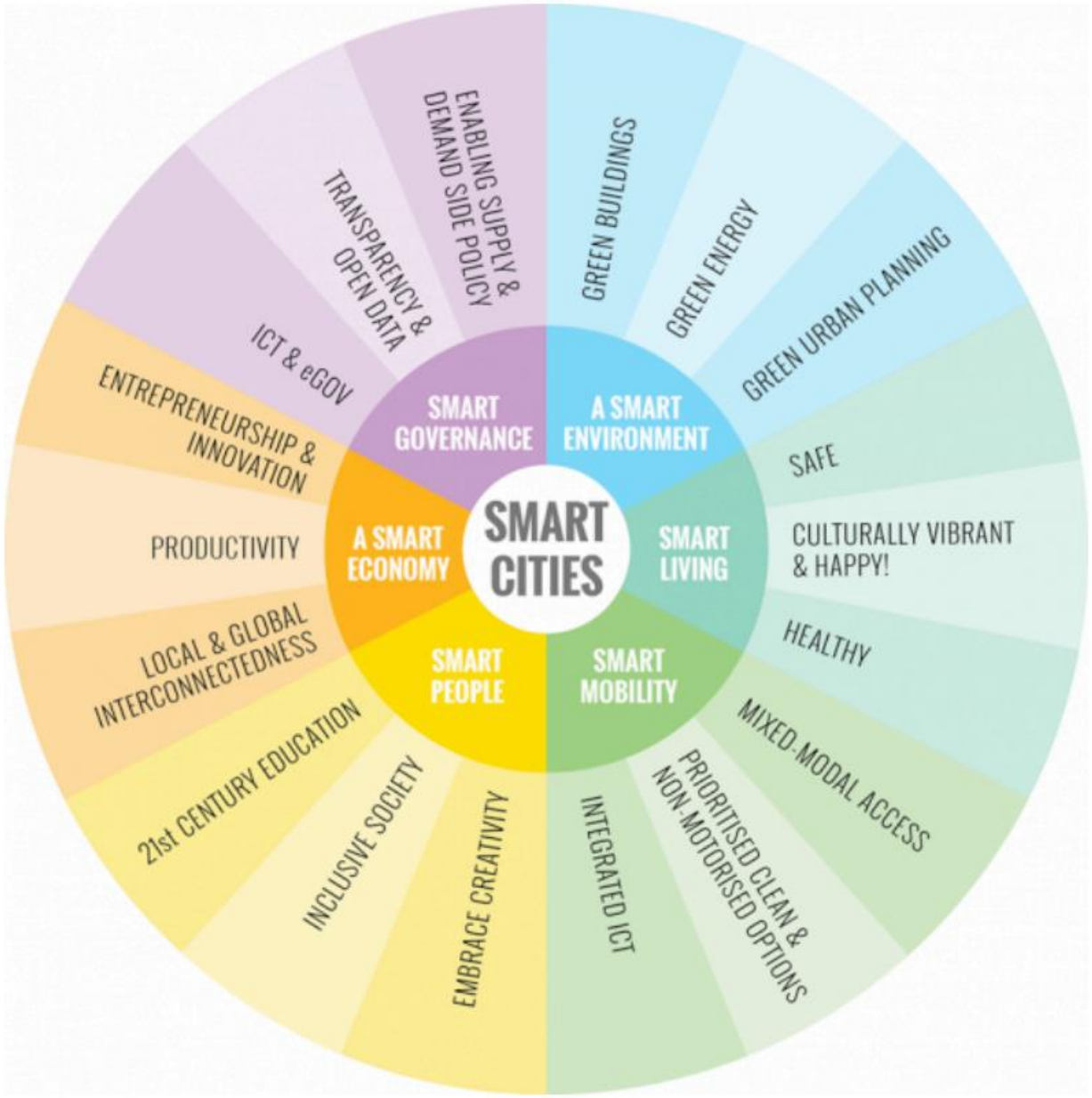
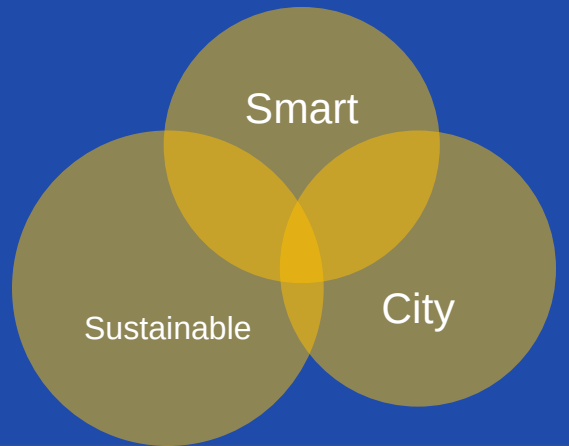
Smart sustainable cities and digital transformation: experience of Sweden

Irina Kolupaieva

Smart cities wheel





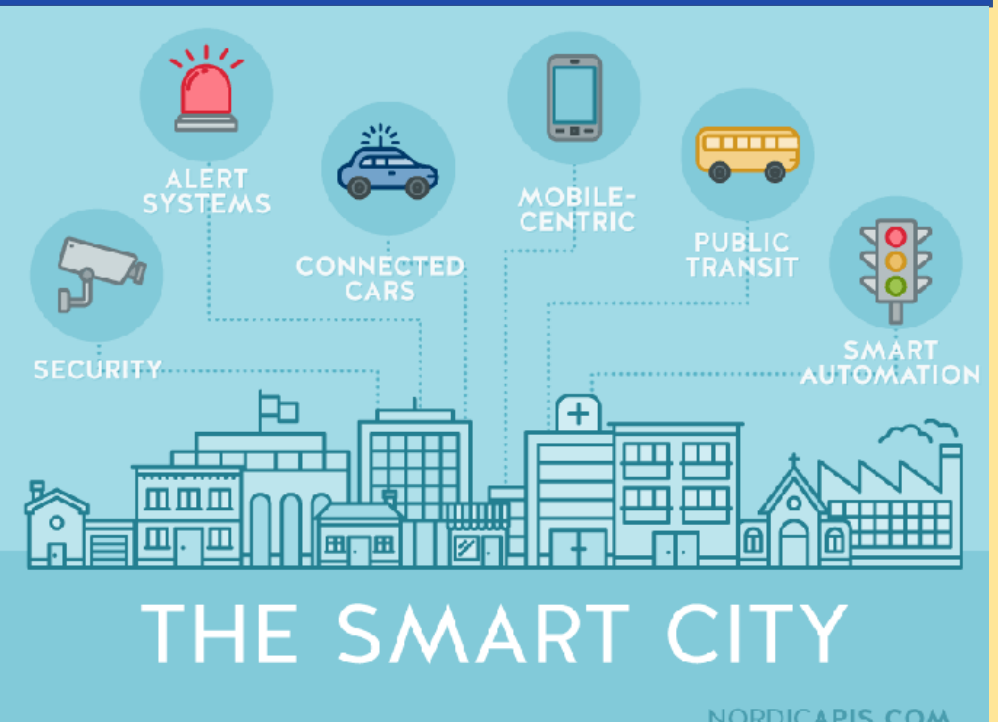
Smart city

- A smart city is a place where traditional networks and services are made more efficient with the use of digital solutions for the benefit of its inhabitants and business.

- A smart city goes beyond the use of digital technologies for better resource use and less emissions. It means smarter urban transport networks, upgraded water supply and waste disposal facilities and more efficient ways to light and heat buildings. It also means a more interactive and responsive city administration, safer public spaces and meeting the needs of an ageing population.

Source: https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/city-initiatives/smart-cities_en

Smart sustainable city characteristics



1. The use of networked infrastructure to improve economic and political efficiency and enable social, cultural and urban development
2. An underlying emphasis on business-oriented urban development
3. A strong focus on the goal of realizing the social inclusion of different kinds of urban residents in public services

4. A stress on the significant role of high-tech and creative industries in long-term growth
5. Profound attention to the function of social and relational capital in urban development
6. Social and environmental sustainability as a major strategic component of urban development

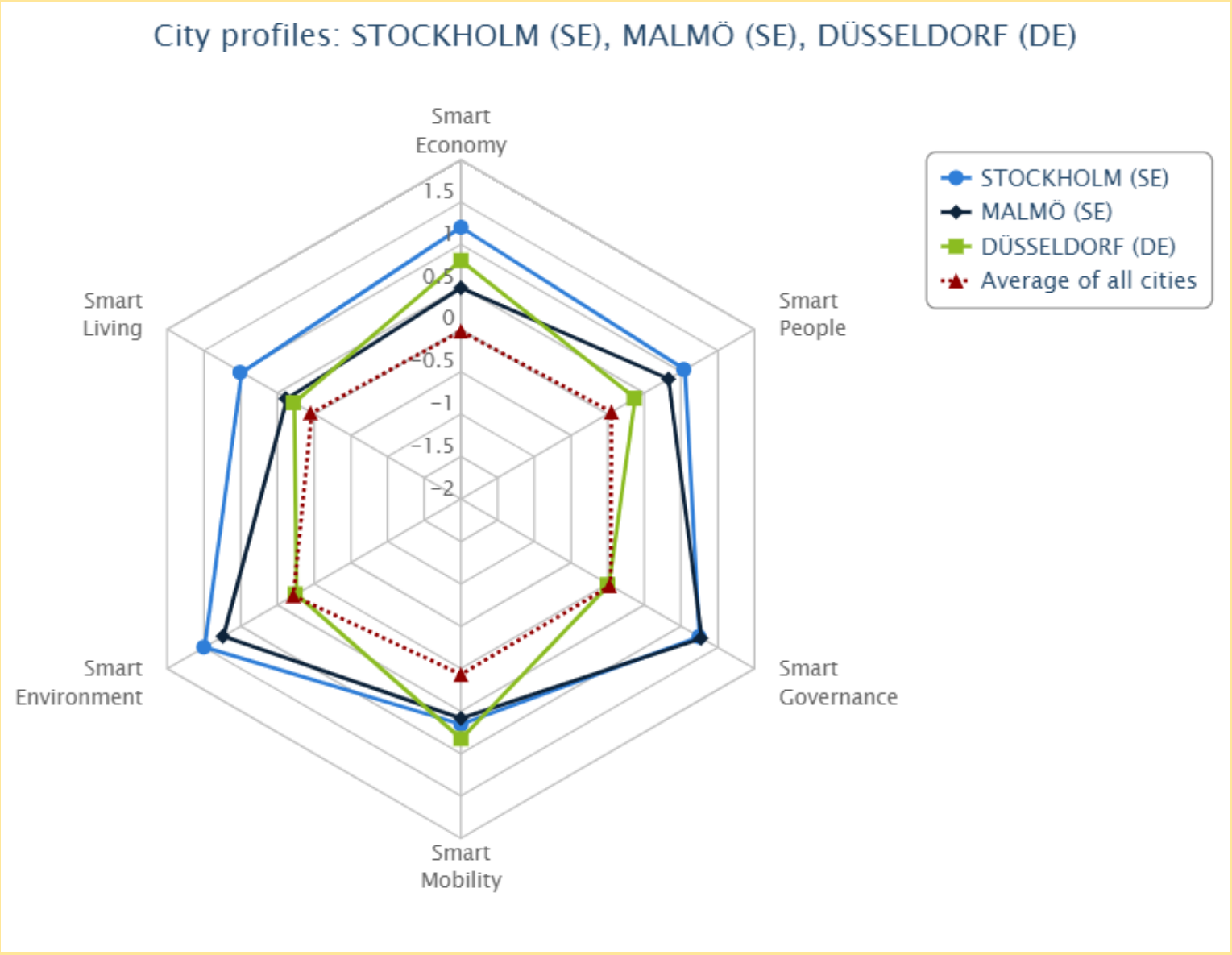
Source: Caragliu et al., 2011

Model of Smart city

SMART CITY includes **6 key** spheres city development

- smart economy,
- smart mobility,
- smart living,
- smart people,
- smart governance,
- smart environment.

Source: http://www.smart-cities.eu/index.php?cid=5&ver=4



Source: http://www.smart-cities.eu/index.php?cid=5&ver=4

European smartcities
version 4.0 (2015)

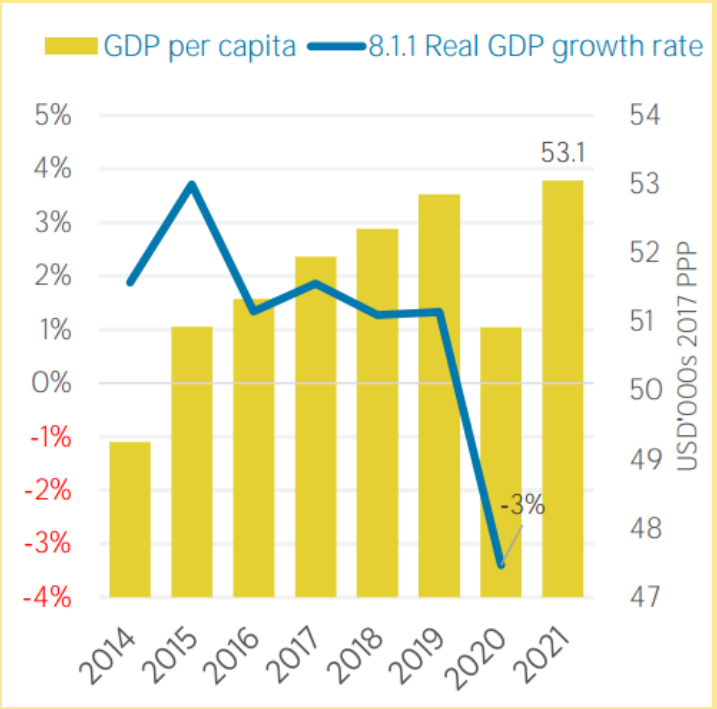
Model of Smart city in Sweden

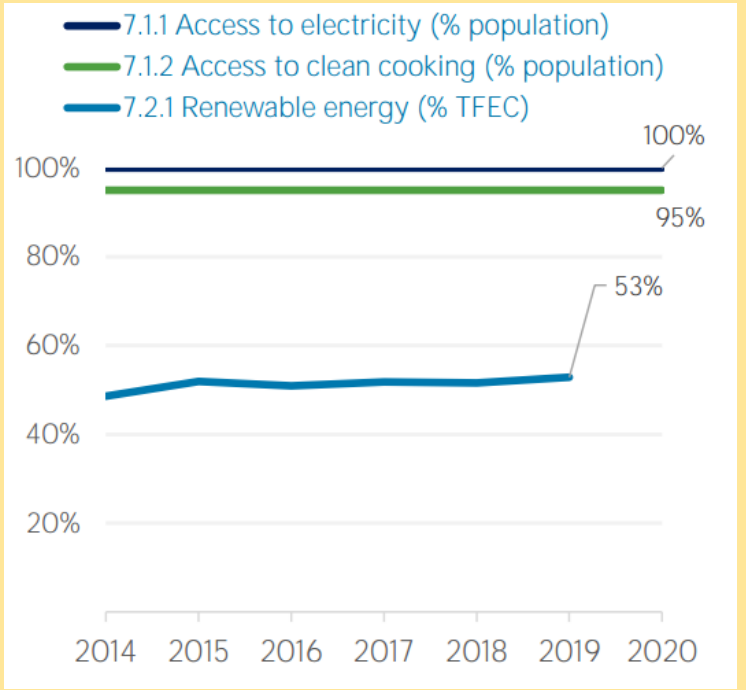
The "**smart city**" model in Sweden includes the following 5 areas:

- climate,
- energy and environment,
- mobility,
- digitalization,
- urban planning
- social sustainability.

https://smartcitysweden.com

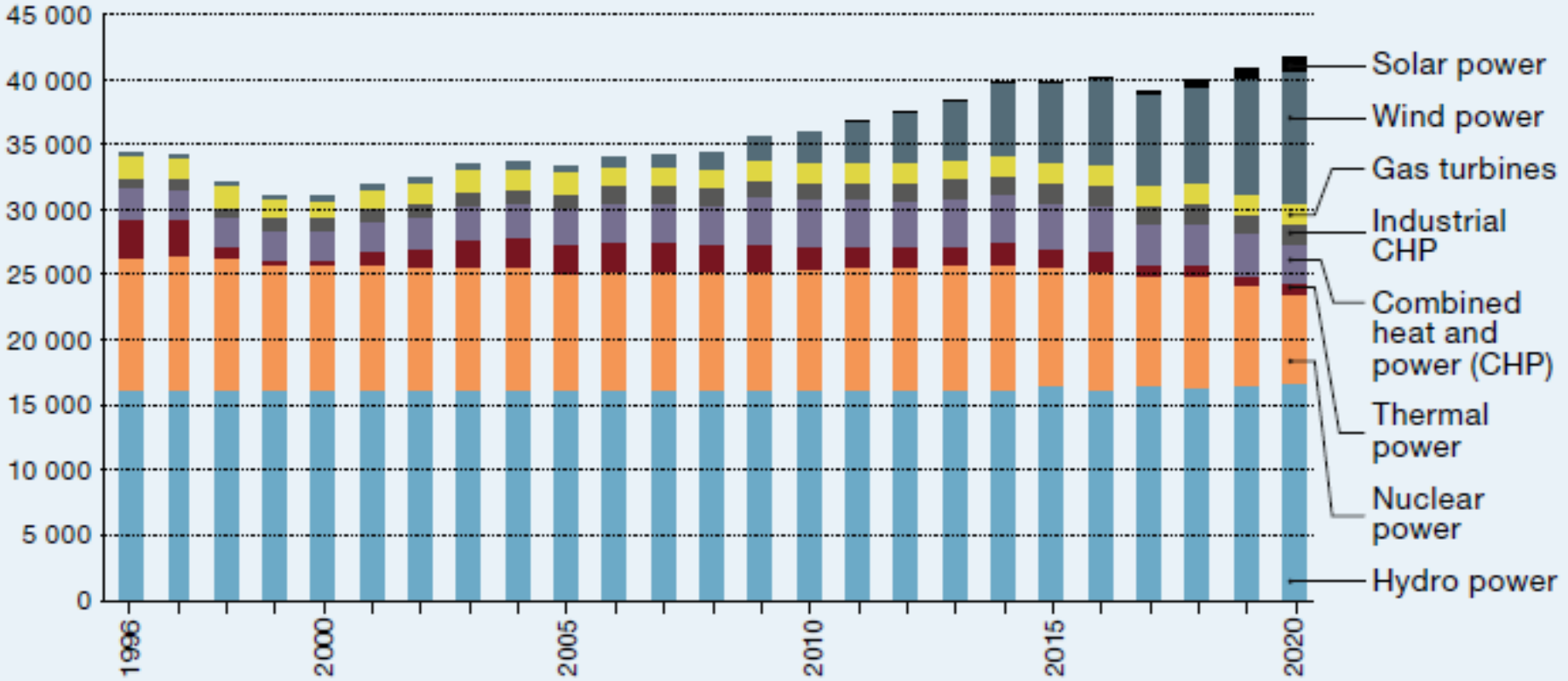
Country indicators





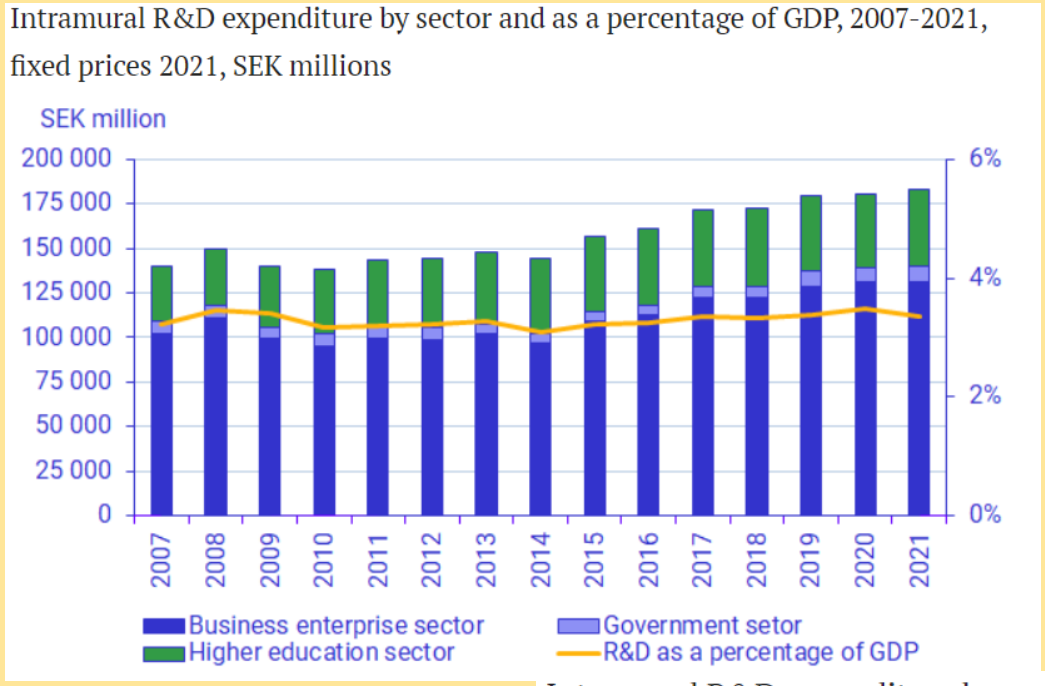
Source: International Renewable Energy Agency

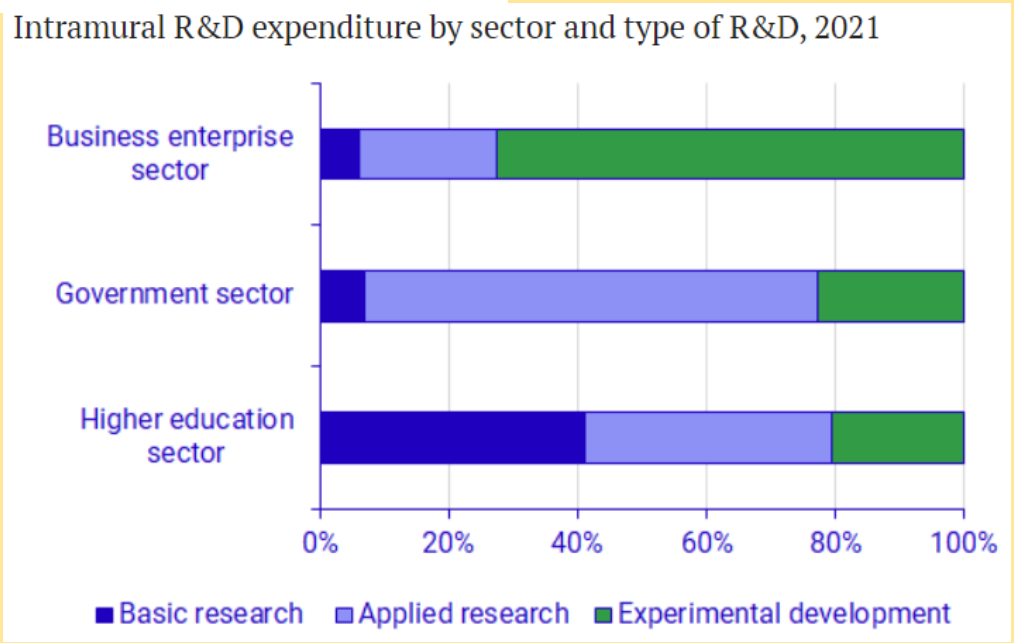
Installed electricity generation capacity by type of power, MW



Source: Swedenergy – Energiföretagen Sverige. Note that not all installed electricity generation capacity is available at the same time. Availability also varies between the different types of power, as they are weather-dependent in a variety of ways.

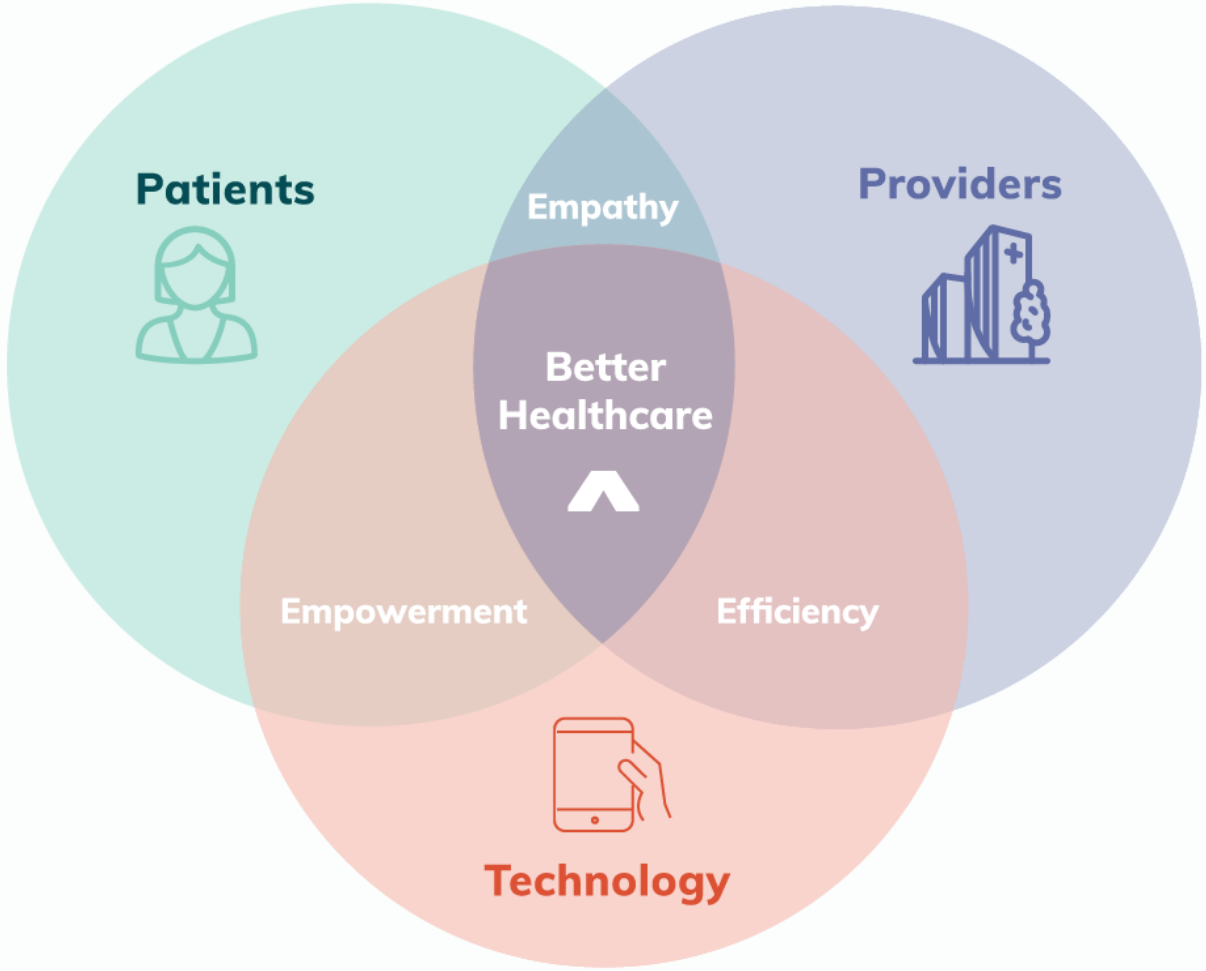
Expenditures for R&D in Sweden





Source: https://www.scb.se/en/finding-statistics/statistics-by-subject-area/education-and-research/research/research-and-development-in-sweden/pong/statistical-news/research-and-development-in-sweden-2021/

Interaction between patients and Health care provider



diasend.com
Easy Diabetes Communication

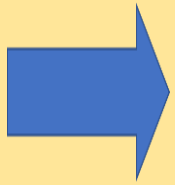
E-shopping, custom service

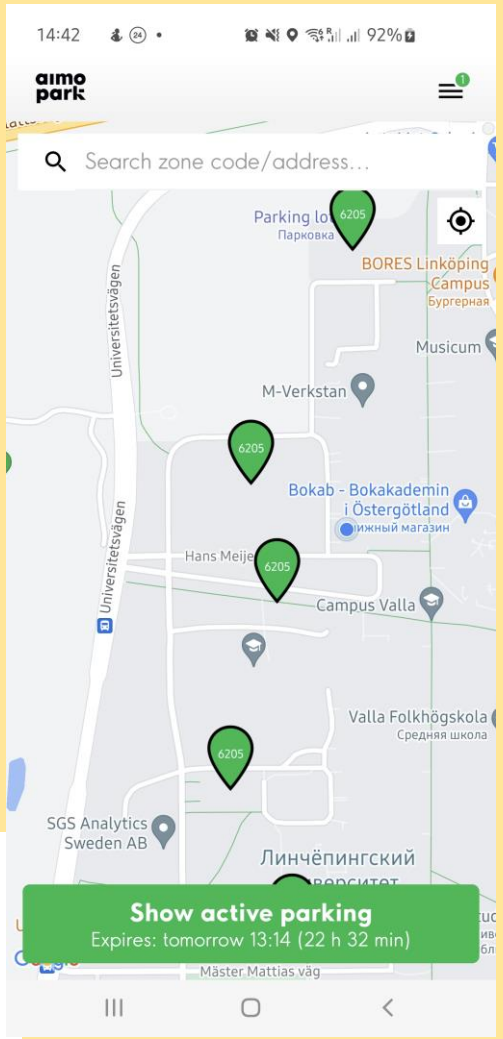
Customers on-line, not in line

CITY GROSS

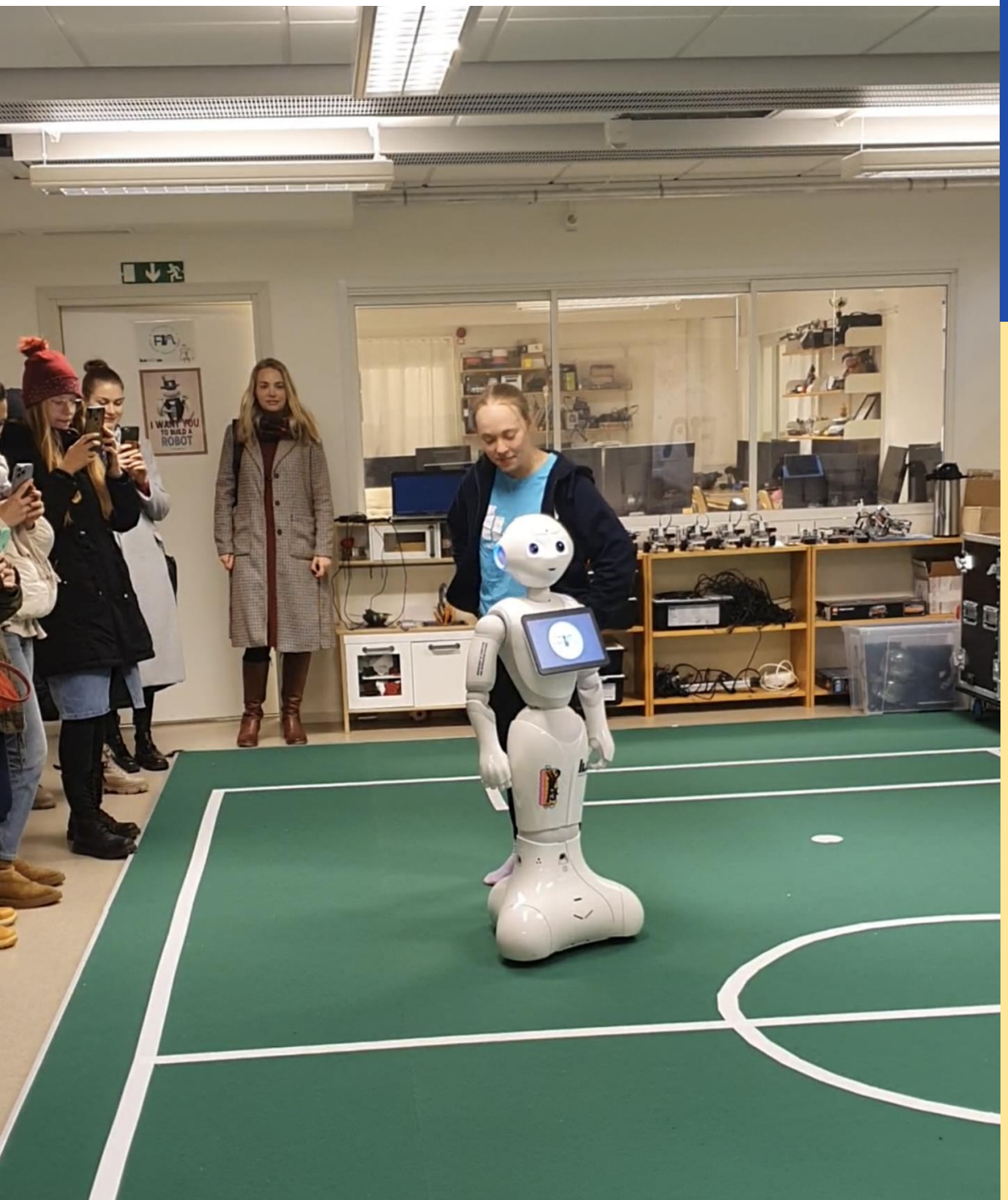
ICA

E-parking in Sweden





- Reducing local air pollution
- Improving traffic management
- Improving parking
- Improving life quality
- Improved data accessibility



Robotics at LiU

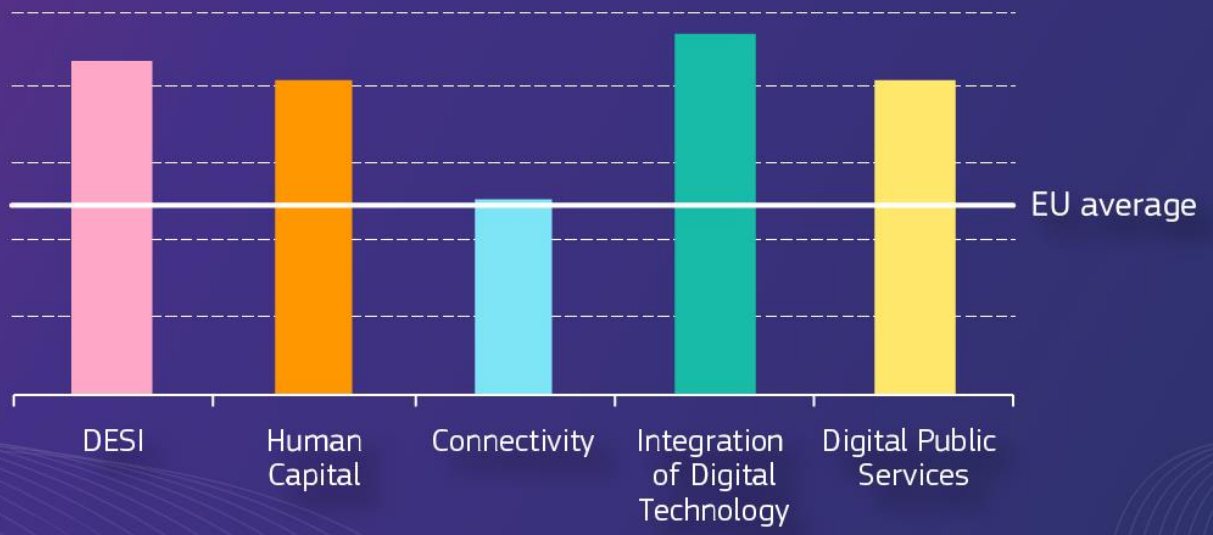
https://liu.se

DESI 2022

Digital Economy and Society Index

SWEDEN

DESI rank **4** - DESI score **65.2**



#DESIeu #DigitalEU

Jones Beach and Wantagh Parkway

Challenges of digitalization in EU

In developing EU countries, in relation to the average income of the population, Gigabit Internet is **18 times** more expensive than in developing countries.

Source: Eurostat, 2022a

The gap within the EU in digital technology use is even greater compared to Internet access. In 2022, only **50%** of the EU population had digital skills. Not addressing such problems will aggravates inequalities in economic development, access to health services, education, etc., which will adversely affect the implementation of the EU goals in the Sustainable Development Agenda.

Source: Van Kessel, R., Wong, B.L.H., Rubinić, I., O'Nuallain, E., & Czabanowska, K., 2022.

Digital exclusion

It's not today's technology that causes digital exclusion.

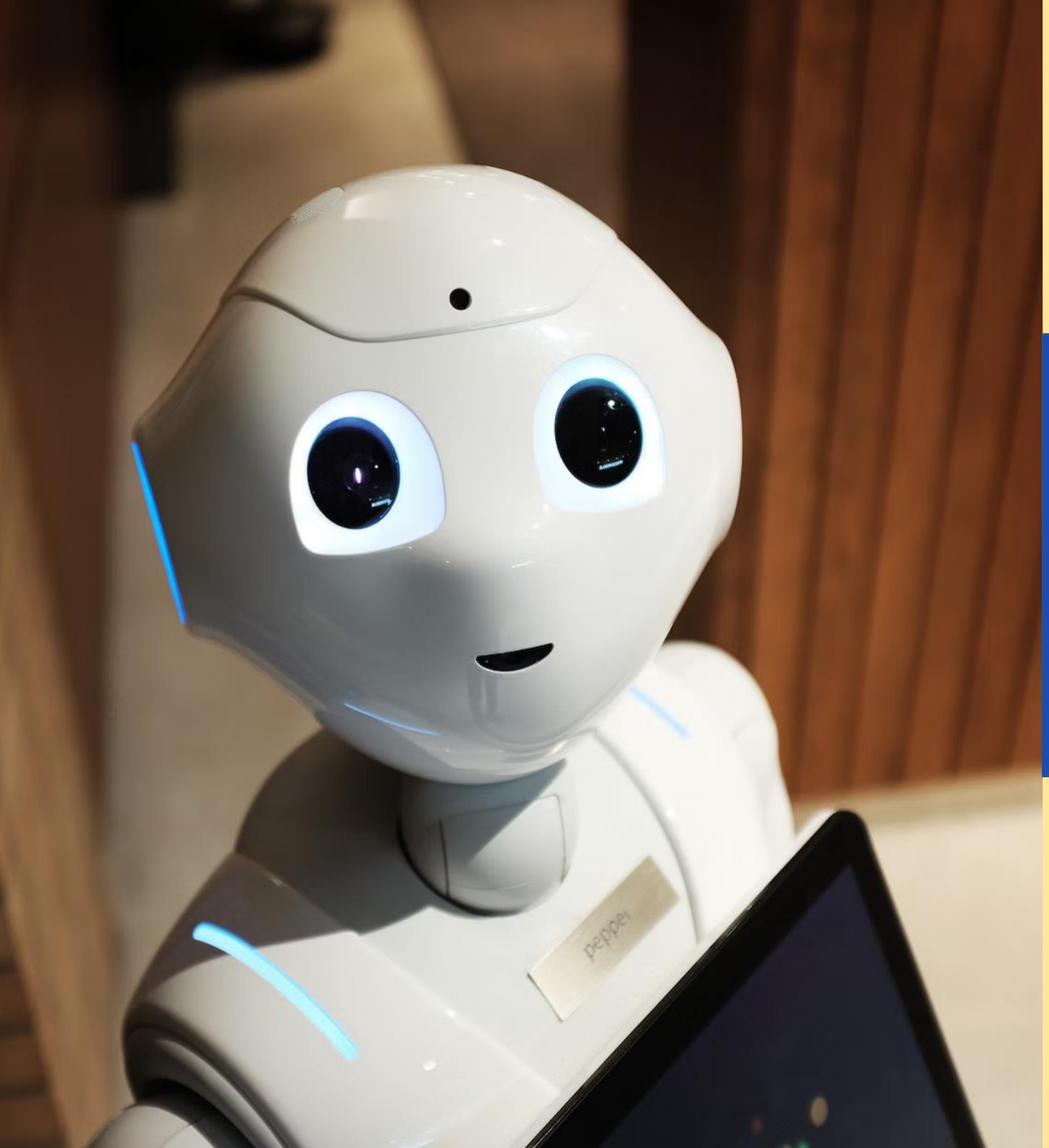
Technology is a bridge, not a barrier.

Instead, today’s exclusion is due to the lack of urgency by those who drive the digitalization agenda of Swedish society and those who are responsible for the development and delivery of those digital services.

Sara Hedman

UX designer, TietoEVRY Innovation and Design unit - d|lab

Source: https://www.tietoevry.com/en/blog/2020/05/one-million-swedes-affected-by-the-digital-divide/



Do you have any recipe to the digital future?

Who bears the responsibility?

Acknowledgment

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