

newTRENDS

Stakeholder workshop

Focus group | Digitalization in
the services sector

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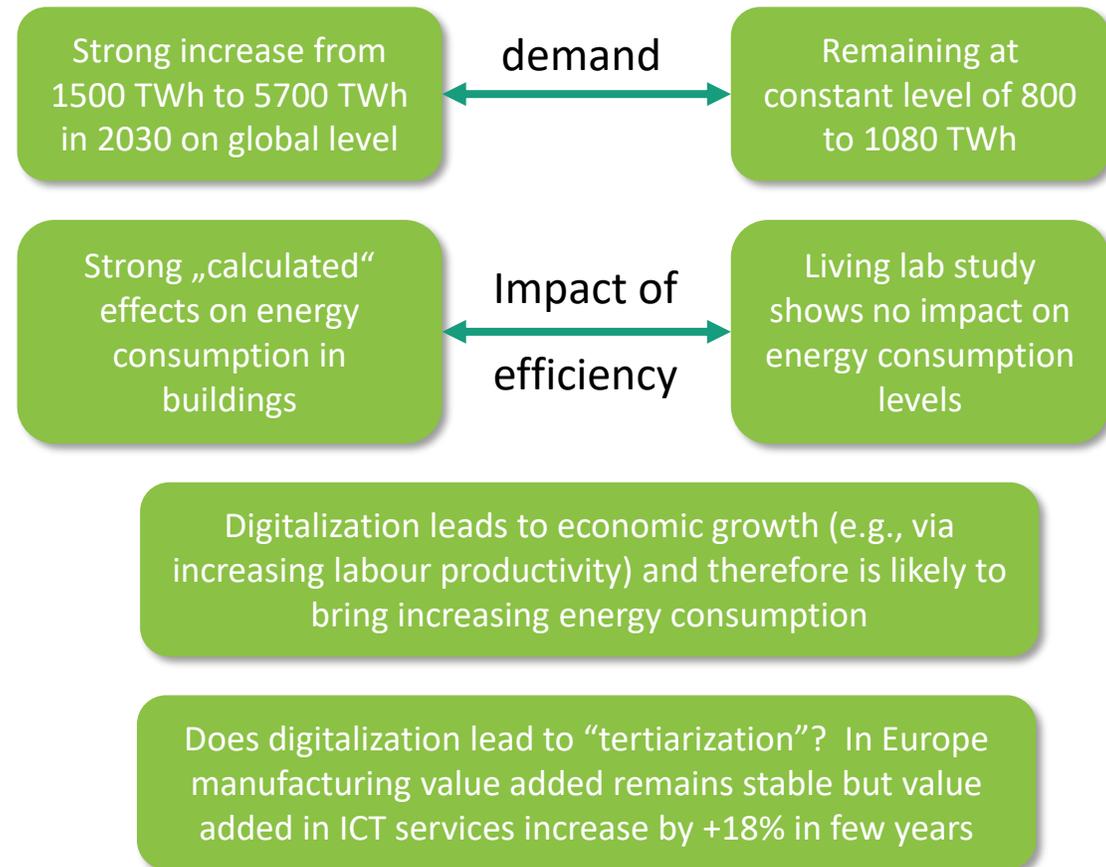
AGENDA

- Introduction (~ 10 minutes)
- Policies affecting the services sector (~ 10 minutes)
- MIRO – Discussion (~ 15 minutes)
- Break (~ 5 minutes)
- Modelling digitalization in the services sector (~ 10 minutes)
- MIRO – Discussion (~ 15 minutes)



FRAMING DIGITALIZATION

- Energy consumption of the ICT sector
 - E.g., manufacturing, ICT services, telecommunication
- Energy efficiency and rebound effects
 - Reduce demand due to better information
- Digital growth cycle or stagnation
 - Economic effects
- Sectoral and inter-sectoral change
 - Shift of demand between sectors and sub-sectors



DIGITALIZATION ON FAST TRACK

2015 EU Digital single market

- Free flow of non-personal data (e.g., to support cross-border e-commerce)
- Open data directive and Cybersecurity act

2018 EU Artificial intelligence strategy and use of big data

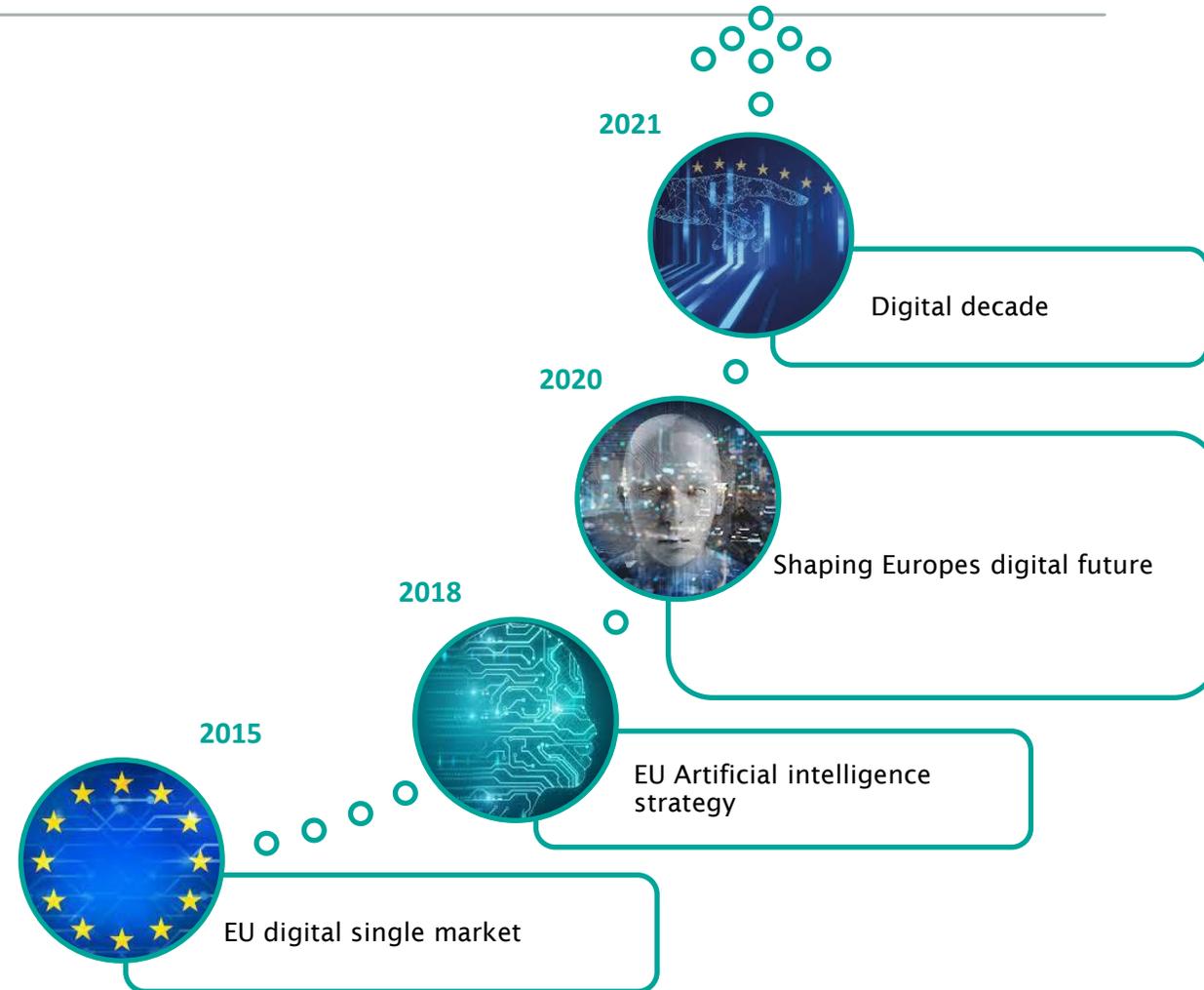
- Combine data, algorithms and computing power

2020 Shaping Europe's digital future:

- Use technology to help Europe become climate-neutral by 2050
- Reduce the digital sector's carbon emissions
- Invest in digital skills for all Europeans, incl. accelerated roll-out of ultra-fast broadband throughout the EU

2021 The 2030 Digital Compass and the European way for the Digital Decade

- Increase the number of qualified ICT professionals to reach 20 million ICT professionals in Europe (in 2019, ICT specialists in Europe were 7.8 million or 4% of the total workforce).



DIGITALIZATION AND TERTIARIZATION

Digitalization of services is a broad description of new services which change our way of interactions, doing business and spend our leisure time.

These services have been trending in the recent past and are likely to influence future energy demand.

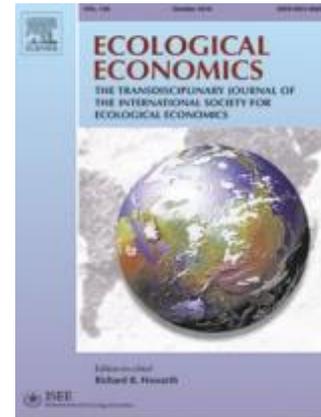
We consider the following digitalization aspects for the further discussion:

- Data streaming and cloud services (grid based)
 - Online shopping and impact on shops, storage, cooling and others
 - Online conferencing vs. real meetings;
 - Working from home, coworking space and regular office work
 - Online services for public administrations, registrations, etc.
- Telecommunications (mobile applications)
 - 5G (automated driving), Internet of things,



CONTRIBUTION OF DIGITALIZATION

- Vast amount of indicators and studies available but poorly linked to energy demand
 - DESI index
- Studies **vary significantly** regarding scope, method and ambition level
- New **Empirical data** scarce
 - Projections number of employees
 - Number of servers installed, PUE, etc.
- Rebound effects
 - **Efficiency gains / new demands**
 - **Energy intensity of goods for digitalization**



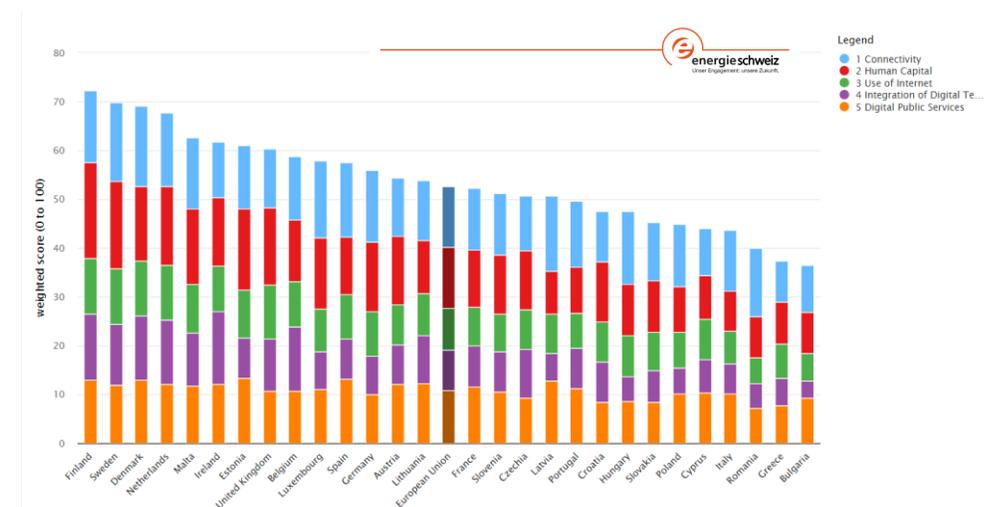
HOCHSCHULE
LÜZERN

TEP

Rechenzentren in der Schweiz
Stromverbrauch und Effizienzpotenzial

Schlussbericht
Zum finalen Review zuhanden
Mihaele Grigoriu, BFE

6. Februar 2021



newTRENDS FOCUS STUDY

Research objective

Improvement of existing modelling techniques for tertiary energy demand and CO₂ emissions to support the impact analysis of digitalization on ambitious GHG reduction.

Research questions

- Which are the dominant new trends in digitalization and how can they be incorporated into existing bottom-up models?
- How do these new trends affect the demand pattern or other demand indicators in the future?
- How do we address cross-sectoral and intra-sectoral impacts in sector-specific models?
- How could different digitalization scenarios look like?
- Which policies are in place, and which are needed, impacting and / or supporting the digitalization processes

