BITKOM CLIMATE STUDY

STUDY RESULTS FROM 2020/21 CREATED BY BITKOM AND ACCENTURE

Alexander Holst - Accenture sustainability strategy lead
Leonie Reulecke – Senior sustainability strategy consultant

YOUR HOSTS FOR TODAY

Alexander Holst

Alexander Holst is Managing Director of the Management & Technology Consultancy Accenture and is part of the European Leadership Team of the Sustainability Strategy & Services practice. He supports clients for more than 23 years and supports them to integrate sustainability into their core business ensuring their future viability. With his background of working in the specific field of Digital and Sustainability since 2015 and leading more than four studies and numerous client engagements, Alexander is a thought leader in this field.

Leonie Reulecke

Leonie Reulecke is a Senior Consultant in Alexander Holst's team in Accenture. Leonie is specialized in the interface between sustainability strategy and technology, supporting clients to uncover the potential of digital for sustainability since more than four years. Leonie has been the project lead and is one of the main authors of the climate study on carbon reduction potential of digital technologies in Germany published by BITKOM & Accenture in 2021.

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Agenda

Our Past Work on Digitalization & Sustainability

Overview about BITKOM Study Findings

Findings in Selected Clusters & Footprint of Digitalization

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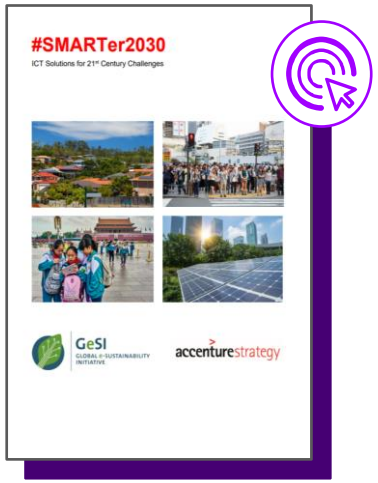
WE HAVE CONDUCTED THREE STUDIES IN THE FIELD OF TECHNOLOGIES FOR SUSTAINABILITY SINCE 2015

GeSI
GLOBAL e-SUSTAINABILITY INITIATIVE

#Smarter 2030



GeSi 2015

#System Transformation

GeSI 2016

Enabling the Global Goals

GeSi 2018

Climate study Germany

Bitkom 2021

Climate study Belgium

COMING SOON

Agoria 2022

The studies were conducted at a global level

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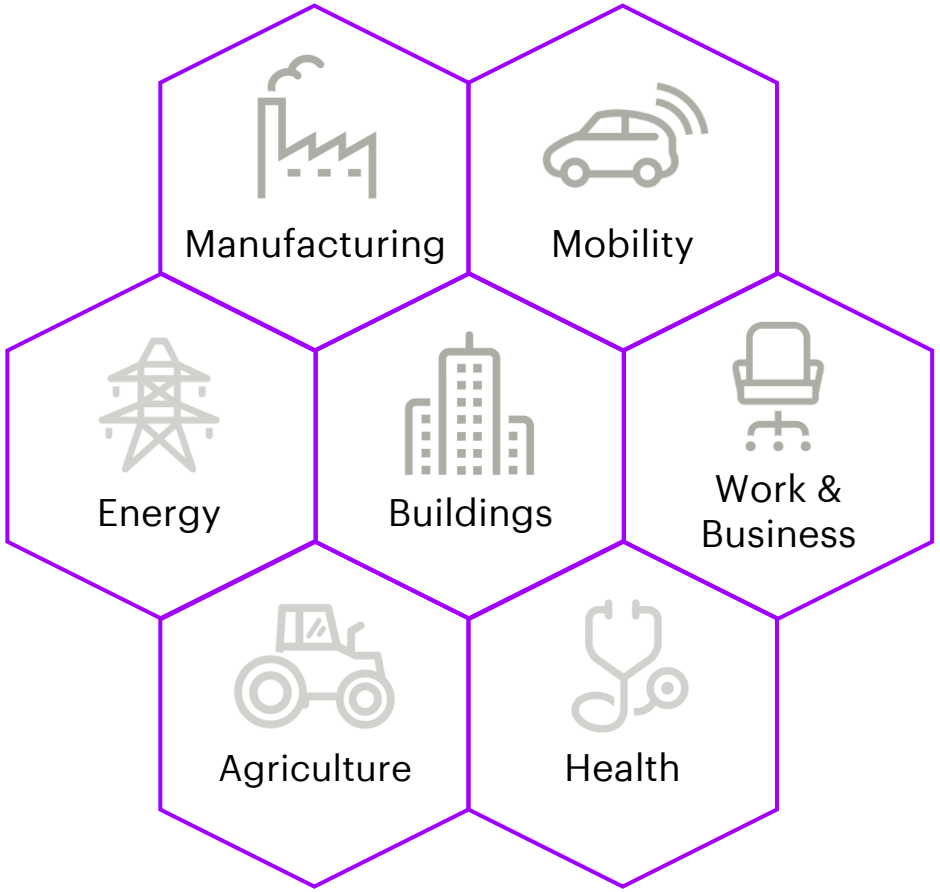
THE AIM OF THE CLIMATE STUDY IS TO COMPARE THE CARBON SAVING POTENTIAL AND FOOTPRINT OF DIGITAL TECHNOLOGIES IN GERMANY

Seven clusters of digital technologies



Two scenarios

Moderate scenario: The pace of digital technology adoption in Germany is evolving as it has over the past 5 to 10 years.

Accelerated scenario: The pace of adoption, diffusion and use of digital technologies in Germany is picking up significantly with appropriate policy incentives.

Contextualization of findings:

- Identifying saving potential is one side of the coin - realizing it is the other.
- Maintaining realized efficiency gains is complex.
- Sustainability is more than climate protection - also in the context of digitalization.

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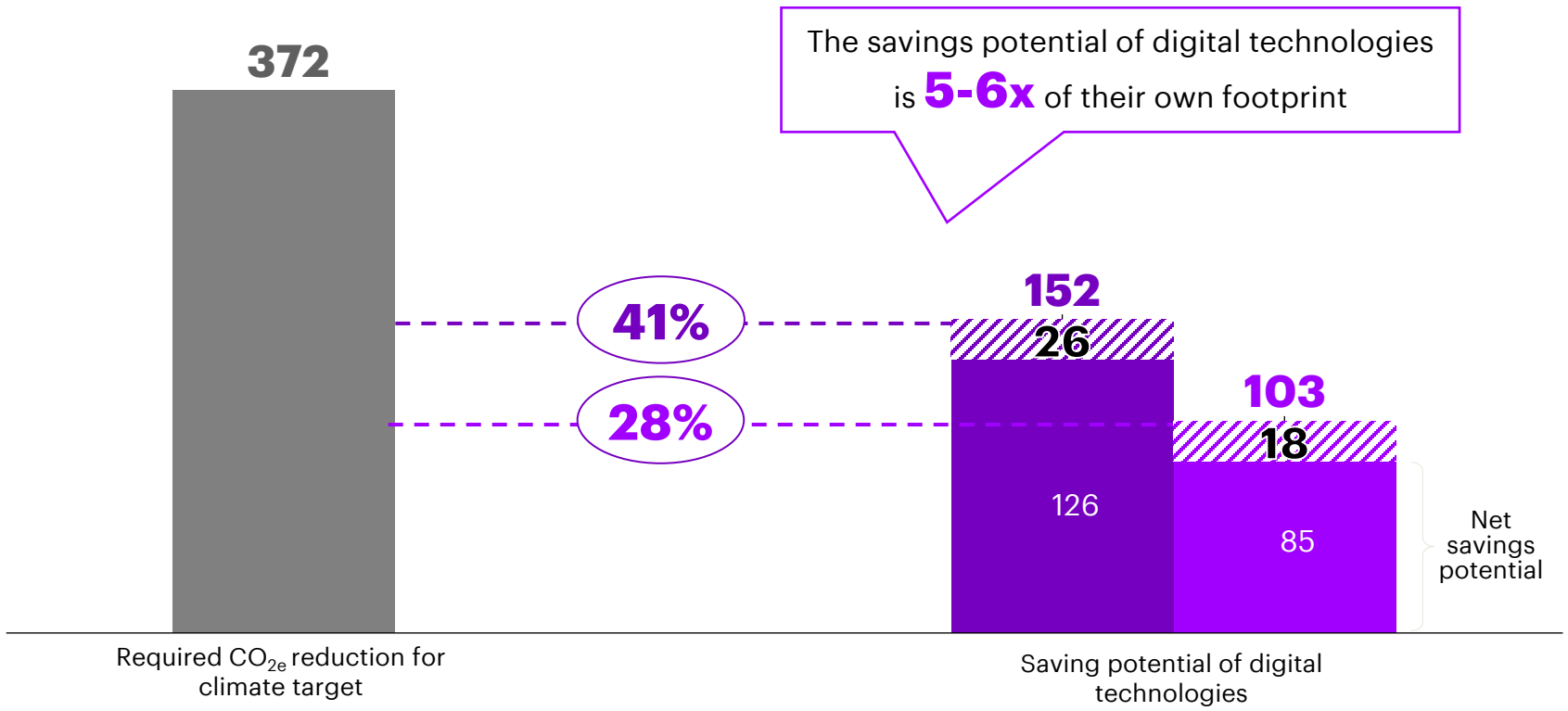
THE FINDINGS PROVE THAT DIGITAL TECHNOLOGIES ARE A DECISIVE LEVER FOR CARBON REDUCTION IN GERMANY

28-41% of the climate target can be achieved through digital technologies

(All figures are in Megatonne CO_2 e)



CO_2e saving potential
Digital technologies can contribute 28-41% to achieving the 2030 climate target.

CO_2e footprint
Through production, use and disposal, the infrastructure of these technologies generates about 18-26 MT CO_{2e} in 2030. The CO_{2e} savings potential is thus 5-6 times the footprint.

Net saving potential
The net savings potential (CO_{2e} savings potential minus CO_{2e} footprint) is 23-34% of the emissions reduction required.

Accelerated digitalization | Moderate digitalization | CO_{2e} footprint of digital technologies

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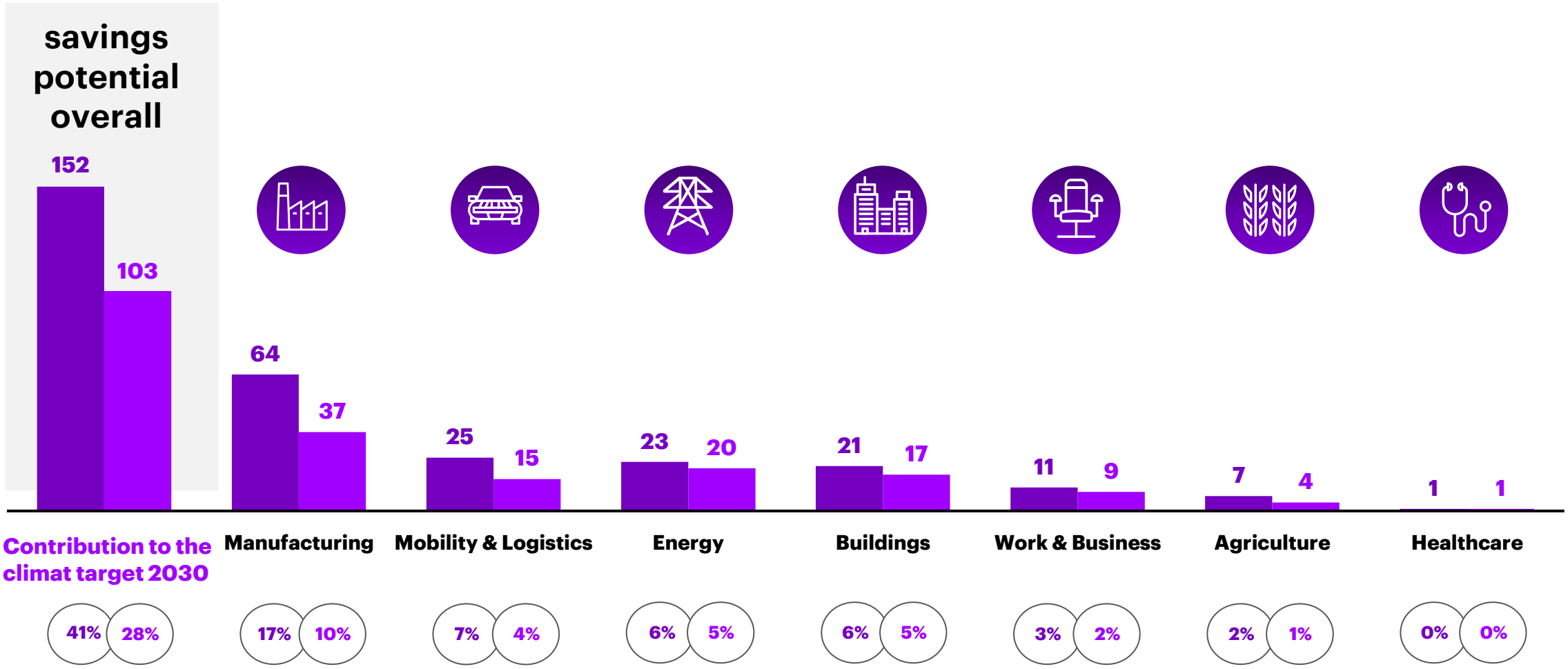
THE STUDY SHOWS THAT THERE IS A HUGE POTENTIAL OF TECHNOLOGIES FOR SUSTAINABILITY IN SEVEN CLUSTERS



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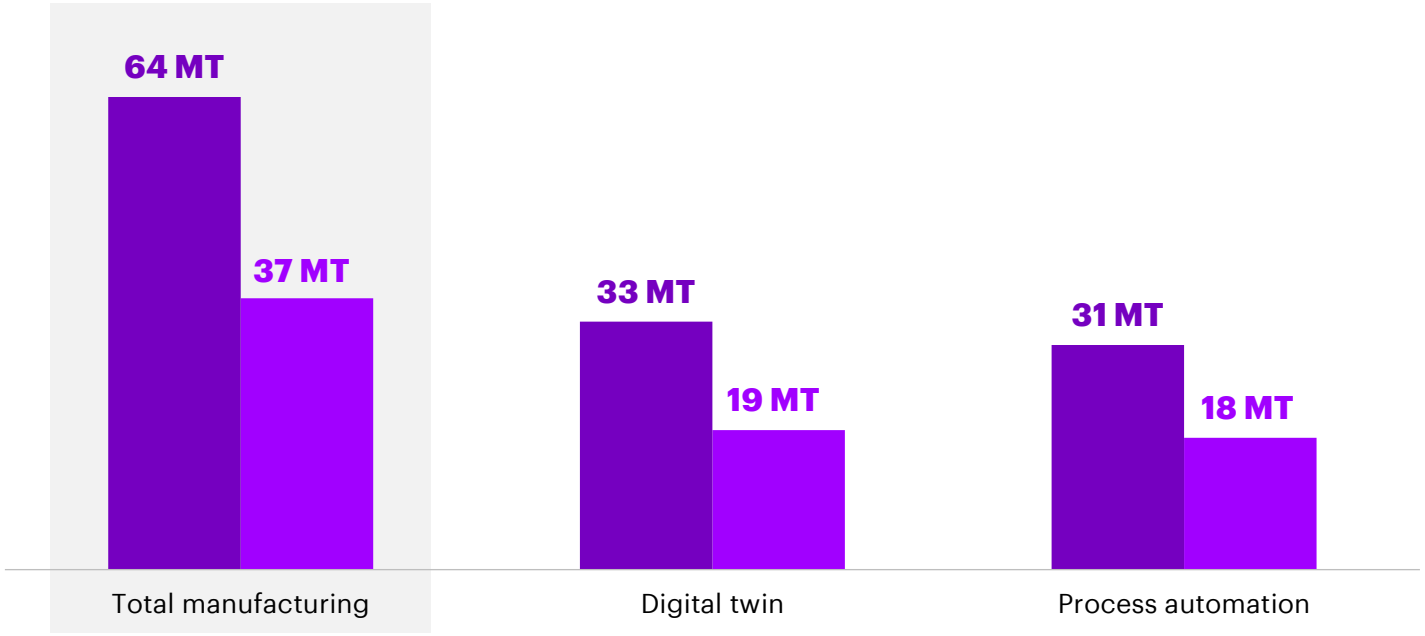
DIGITALIZATION IN MANUFACTURING CAN SAVE 37-64 MT OF EXPECTED EMISSION BY 2030

CO_2e saving potential of digital technologies in manufacturing

(All figures are in Megatonne CO_2 e)



Baseline
Expected primary energy consumption of industrial manufacturing processes in 2030 in Germany.

Digital twin – 5-8% reduction from baseline
Digital twins simulate physical products and processes using ICT throughout the entire production cycle (design, prototyping, production) to minimize physical iterations.

Process automation – 5-8% reduction from baseline
In process automation, ICT is used to operate and control production processes in order to minimize manual intervention throughout the entire production cycle.

Accelerated digitalization Moderate digitalization

Key Sources: UBA. As well as other sources such as: ACEEE, Detecon, Statista, Accenture internal „Subject Matter Experts"

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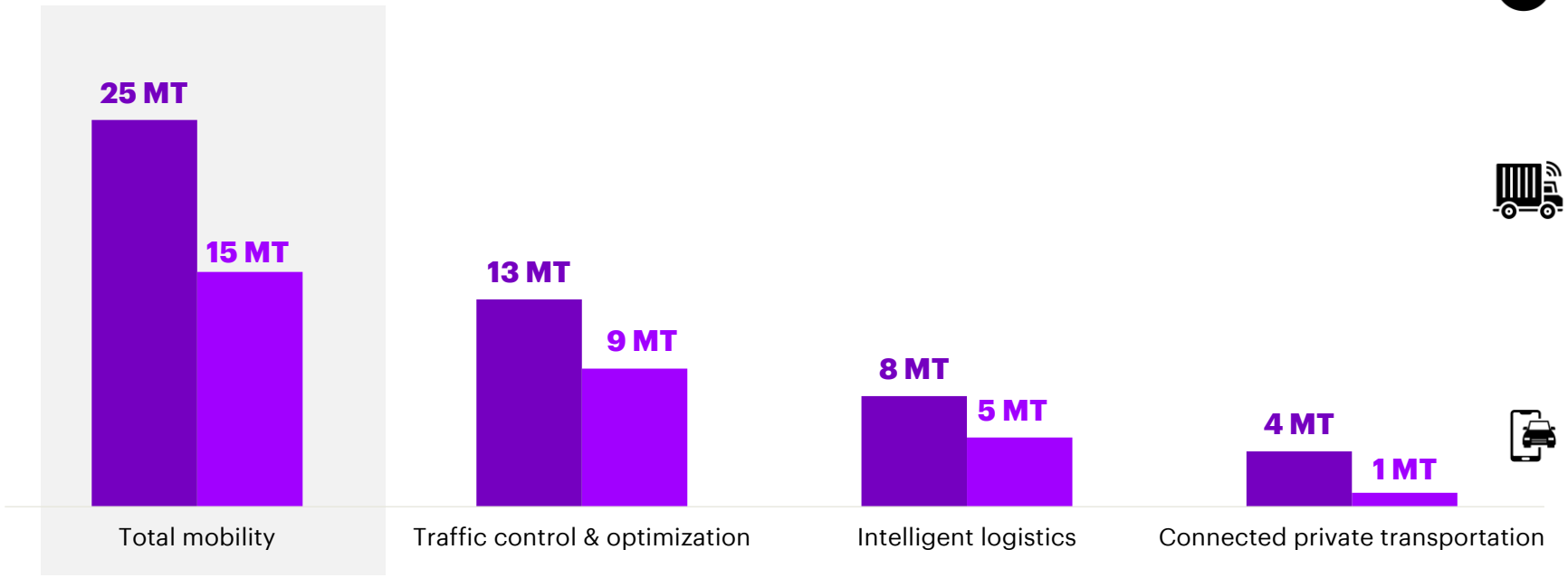
DIGITALIZATION IN MOBILITY CAN SAVE 15-25 MT OF EXPECTED EMISSION 2030

CO_2e saving potential of digital technologies in mobility

(All figures are in Megatonne CO_2 e)



Baseline

Emissions are based on the expected consumption of fuel for private and public mobility as well as on freight transport.

Traffic control & optimization – 9-14% reduction from baseline

Digital technologies can be divided into two levers: applications for eco-efficient driving and ICT-based public transport.

Intelligent logistics – 10-16% reduction from baseline

Intelligent logistics can be divided into two levers: Route and freight optimization technologies and additive manufacturing that enables on-demand, local production.

Connected private transportation – 1-3% reduction from baseline

Connected individual transport uses ICT to make vehicles from private, public and commercial providers available as a flexible means of transport. Ride-sharing and car sharing are taken into account.

Accelerated digitalization Moderate digitalization

Key Sources: KBA, BMVI, Statista, EEA, Industrial Report, GeSI 2030 as well as experts from Accenture and Bitkom.

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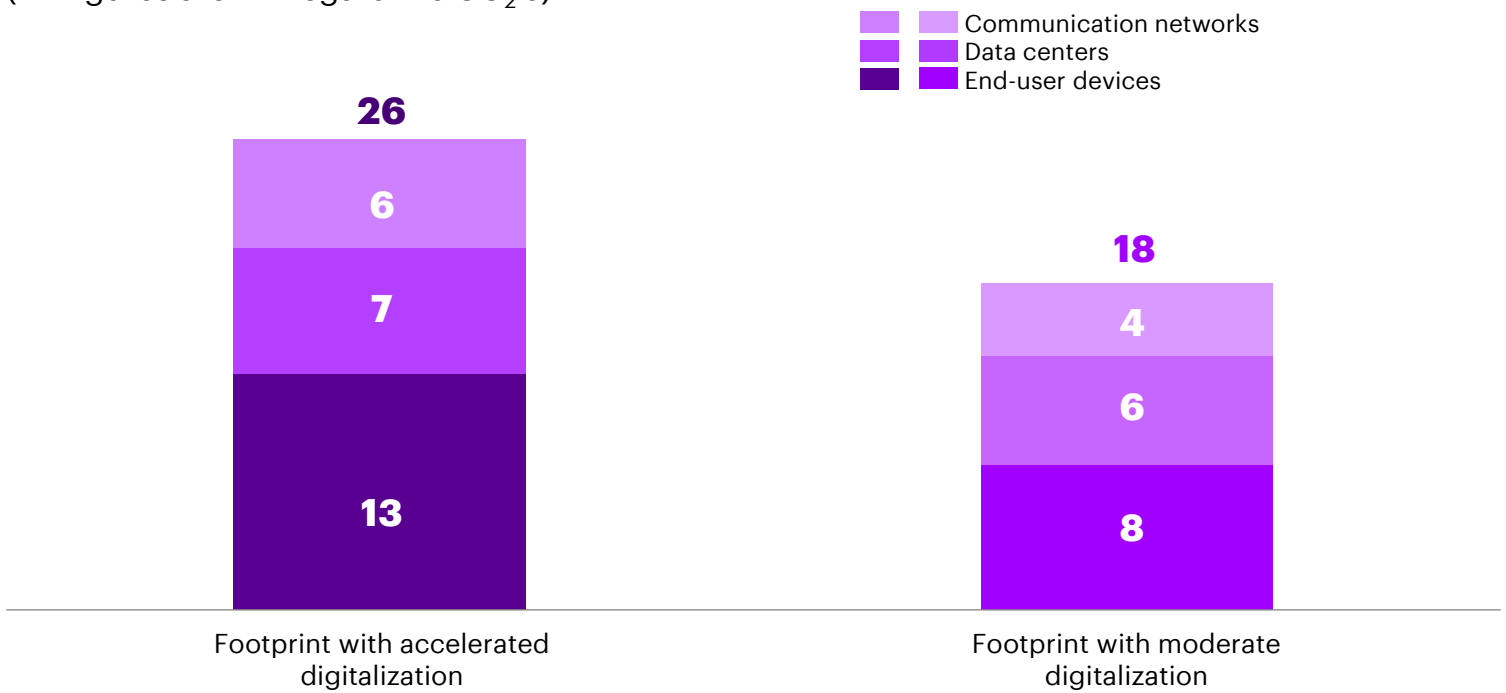
DIGITAL INFRASTRUCTURE WILL GENERATE 18-26 MT CO2E EMISSIONS IN 2030

CO_2e footprint of the digital infrastructure

(All figures are in Megatonne CO_2 e)



End-user devices

The production and use of devices and IoT sensors is responsible for nearly half of the total CO_{2e} footprint in 2030 at 8-13 MT CO_{2e}, i.e., 25.9-40.4 TWh.

Data centers

The use of data centers accounts for about one-third of the CO_{2e} footprint in 2030 with 6-7 MT CO_{2e}, i.e., electricity consumption of 21.6-25.6 TWh.

Communication networks

The use of telecommunication networks causes the smallest share of emissions with 4-6 MT CO2, i.e., electricity consumption of 13.3-19.6 TWh in 2030.

Key Sources: Fraunhofer 2017; A.S.G. Andrae & T. Edler 2015; HEMIX 2020; US Environmental Protection Agency 2016; BMWi 2015

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TIME FOR QUESTIONS

Thank you!

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