

Introduction to the dimensions of digitalisation

Module 1.1: Introduction to Digitalisation

Agenda

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- Terms and Definitions
- Opportunities and Challenges
- Digitalisation affects all parts of our lives

Warm-Up

A short quiz!

<http://etc.ch/7K5x>



15 min





Terms and Definitions

- **ICT:** "Information and Communication Technologies" covers any product that will store, retrieve, manipulate, transmit, or receive information electronically in a digital form (e.g., personal computers, digital television, email, or robots).
- **Digitisation:** Digitisation is the process of changing from analogue to digital form” Therefore we are talking about **turning photos, movies or documents from analogue (paper based) forms into digital formats**, which is easier to replicate, share etc. It is important to distinguish digitization from digitalization.
- **Digitalisation:** One step up from digitisation and describes processes being conducted now digitally. May it be business processes or the way we interact personally and further. Example: Send emails or instant messages instead of letters.
- **Digital-Transformation:** Describing the transformative changes we see happening due to digitalization and digitization. Both lead to a complete transformation of Business Modells and the way we live and work.
- **Digital-Natives:** A digital native is a category for persons who have grown up using technology like the Internet, computers and mobile devices. This means they are accustomed to the use of ICT and are often able quickly understand and use digital tools.

Transformation, Revolution for us



Transformation, Revolution for us

we

- spend 3 hours and 15 minutes a day on our phones
- pick it up 58 times a day
- Use it on average for 1 minute and 15 seconds



ScrollStopper

Angeboten von: digitaldetangler.com



Aufhübschen



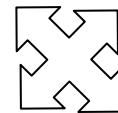
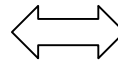
Global share of eCommerce:
7.4% in 2015 to 17.5% in 2021

Average amount of time people spent
online: 06:42h; Philippines highest: 10:02



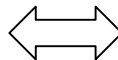
Power to the consumer:
Access to more services, more transparency
etc. puts consumers in stronger position.

Socio-political impact:
power of information vs. fake news
hate speech vs free speech



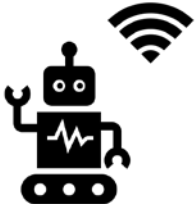
65% of our children will work on activities
that do not exist yet

AI, IoT, Robots increase potential for
automation, controlling and integration



Internet created 2.4 jobs for every job it
destroyed

Leading to:
Individualization & Efficiency



Transformation, Revolution

for the global south



Application examples



SDG 2 Farmcrowdy⁵ is a digital agricultural platform for individuals and businesses to invest in farming projects. As of March 2019, Farmcrowdy had supported more than 11,817 farmers in Nigeria. In April 2019, Farmcrowdy launched Farmgate Africa, a subsidiary of the start-up that will focus on providing major processors and international buyers with the opportunity to purchase commodities directly from local farming clusters.



SDG 3 In Cameroon, GiftedMom⁶ uses SMS and a smartphone application to provide information and reminders to its users about antenatal appointments, vaccination alerts, advice on health risks and complications, and information on family planning and breastfeeding. For users who cannot read or write, SMS messages can be sent via a voice application and translated into the local language.



SDG 4 Kenyan start-up Eneza Education⁷ uses low-cost mobile technology to give users educational lessons and assessments using SMS, web and Android platforms. Eneza has partnered with Safaricom in Kenya and MTN & AirtelTigo in Ghana, and now has nearly 4 million users on its platform across both countries.



SDG 5 Mobile technology is helping women across Sub-Saharan Africa to access the internet, broaden their learning and, in turn, improve the wellbeing of their families. For example, Kasha is an e-commerce platform in Rwanda that sells health and personal care products, such as contraceptives and tampons. Customers can access Kasha via USSD or a mobile or web app.



SDG 6 In Niger, CityTaps⁸ has developed a water utility subscriber management solution. This includes a smart prepaid water meter that uses Orange mobile money and M2M technologies. The solution allows households to make micro-prepayments for their water at any time using mobile money. CityTaps also provides a software management system and a subscriber management dashboard to monitor usage and performance of the meters remotely.



SDG 7 KopaGas,⁹ founded in 2014, makes clean, efficient liquid petroleum gas (LPG) available and affordable to low-income households through its PAYG smart metering technology, in partnership with Tanzania's leading LPG importer. As of June 2018, the company had reached more than 500 households with its pay-as-you-cook model and its gas distribution business, which accounts for 7% of LPG distributed in Tanzania.



SDG 8 In May 2019, Nigeria-based on-demand motorcycle taxi app Gokada secured \$5.3 million in Series A funding to expand its driver fleet and grow its team. In its 14 months of operation, the start-up has secured close to 1,000 bikes and established a training school for drivers.



SDG 10: Rwanda-based start-up ARED develops solar kiosks – known as Shiriki Hubs – that are run mostly by women and people with disabilities, using a micro-franchise business model. In May 2019, ARED moved into Uganda, rolling out 10 kiosks in the capital Kampala and at refugee camps, where lower income groups can charge their mobile devices, buy airtime and access the internet.



SDG 13 In Kenya, Illuminum Greenhouses' system allows smallholder farmers and farm owners to monitor and regulate conditions remotely via SMS. By controlling water via irrigation schedules, the start-up claims farmers using their greenhouses can reduce water usage by up to 60%.



SDG 16 In Tanzania and Ghana, mobile-enabled digital birth registration has seen more infants registered early or on time (within the first year), in some cases almost quadrupling registration rates (from 8.9% to 30.3% in Mbeya Tanzania). In some regions in Ghana, more than 90% of births are now registered digitally, all contributing to goal 16.9 'By 2030, provide legal identity for all, including birth registration'.

Digitalization, posing many challenges



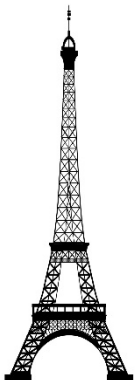
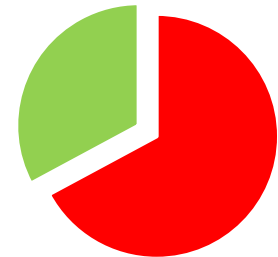
Digitalisation & Development Coop.

Threats - Facts and Figures



80% of the people in the least-developed countries are not using the Internet. Worldwide **12%** fewer women than men use the Internet – in Africa this is even **25%** less.

Up to **2/3** of all current jobs in developing countries could disappear through digitally driven automation.



In 2016, **44.7 million** tons of e-waste were generated. This corresponds to about **4.500 Eiffel Towers**. Only **20%** of these devices contaminated with toxic substances are properly disposed of and recycled.

ICT & Climate



- **Energy consumption**
- **Consumption of resources** (e.g. „rare earths“)
- **Electronic waste** is polluting the environment + „recycle“ under extremely bad circumstances
- **eCommerce** increasing postal deliveries



- **Smart devices:** reduce energy need for devices
- **Smart-grids** allow for flexible and decentral energy-grids + renewable energy sources
- **Teleconference-systems** reduce need for travel
- **Control and transparency**



The dual nature of digitalization

Bonus question:

will autonomous driving in- or decrease CO2 emissions from the transport sector?

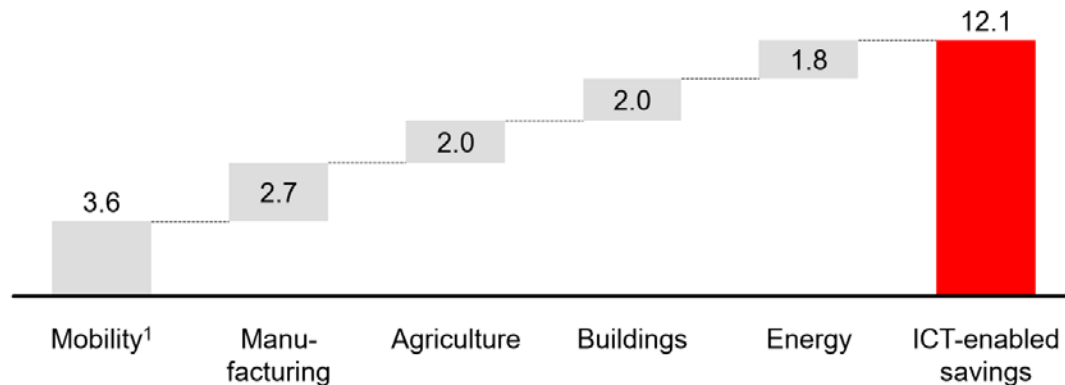
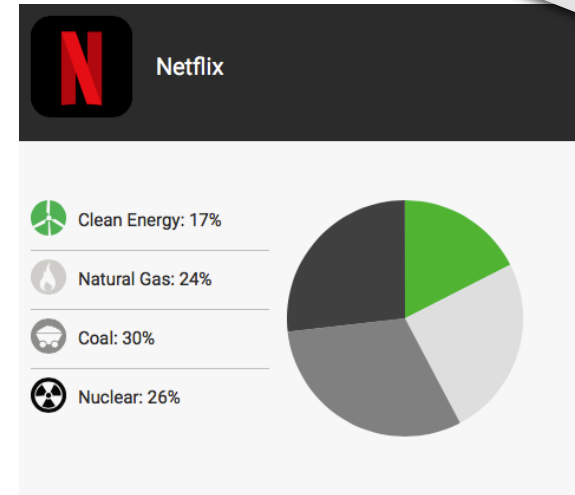
ICT & Climate

What is the effect?



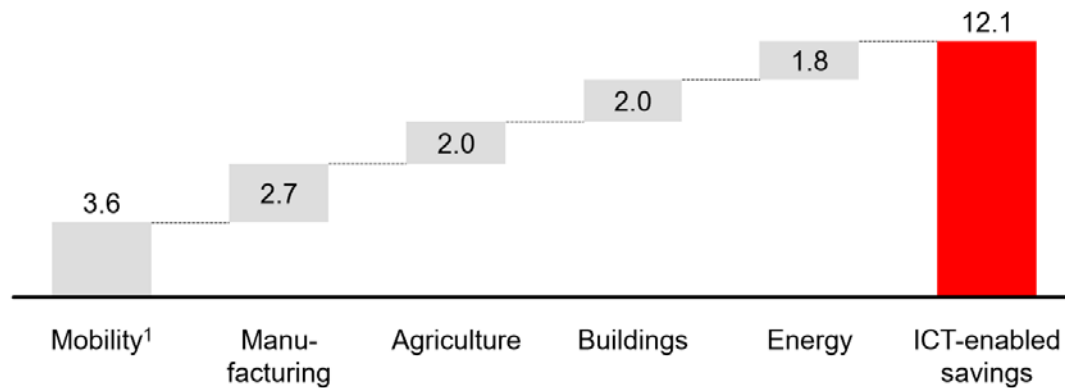
Across the tech sector we need to recognize that data centers will rank by the middle of the next decade among the large users of electrical power on the planet."

- Brad Smith, President Microsoft -



**CO2 abatement
potential by sector
(2030)**

ICT & Climate Research



**CO2 abatement
potential by sector
(2030)**

- Too little research available
- Available studies come to very different figures
- Overall a positive effect of digitalization on the climate is expected