

**PATHWAY // CONNECTIVITY**

# **WE CAN CONNECT PEOPLE**



**THIS TRANSFORMATION PATHWAY FOCUSES ON THE DIGITAL TECHNOLOGIES AND PLATFORMS THAT CONNECT PEOPLE TO OTHER PEOPLE, TO INFORMATION, AND TO AN EVER-EXPANDING RANGE OF PRODUCTS AND SERVICES.**

It also covers solutions that connect and communicate with objects via the internet (the Internet of Things). By extension, this pathway also covers the infrastructure, equipment and devices – from smartphones to computers to satellites – that these solutions depend on.



# **OUR 2050 VISION**

## **FOR CONNECTIVITY**

### **RESPONSIBLE CONNECTIVITY BRINGS PEOPLE TOGETHER, ENHANCES TRANSPARENCY AND EFFICIENCY, AND DRIVES ACCESS TO OPPORTUNITY**

#### **CONNECTIVITY EMPOWERS EVERYONE**

Digital and communication technologies provide universal connectivity, allowing all people to connect with each other and to critical information and basic services including finance, education and healthcare. This, in turn, contributes to fair, prosperous and inclusive societies with radically reduced inequality around the world. People also have access to the skills needed to flourish in a digital world.

#### **DATA OPTIMIZES PERFORMANCE AND EFFICIENCY**

The Internet of Things has reached its full potential. Widespread use of connected devices enables vast amounts of information to be collected and analyzed, driving the optimization of processes and procedures across a wide range of industries. This facilitates enhanced performance and efficiency, reduced emissions, improved water stewardship and dematerialization.

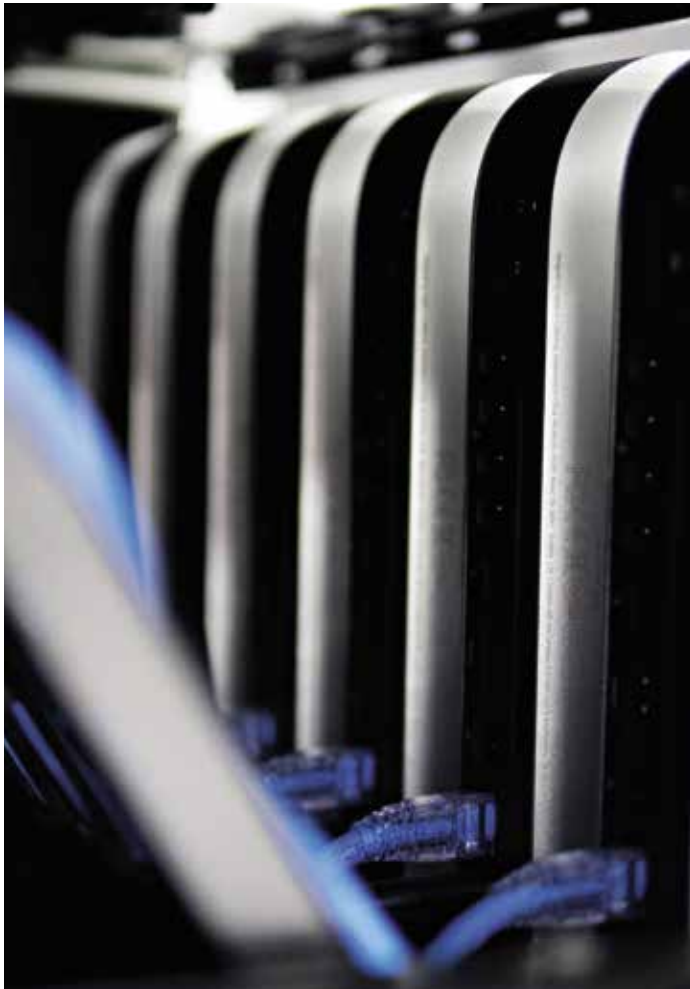
#### **SUSTAINABLE DEVELOPMENT CAN BE TRACKED AND MANAGED**

Digital advances allow real-time tracking and observation of the world and its key natural and man-made systems. This ensures transparency with regard to emerging environmental and social challenges, and enables targeted interventions to be made in a timely and coordinated manner.

#### **CONNECTIVITY RESPECTS PEOPLE AND THE ENVIRONMENT**

Environmental and social impacts along the digital supply chain have been mitigated. Raw materials are sourced responsibly, data centers are powered by clean energy, and circular and sustainable end-of-life practices are widespread. International collaboration and global standards have enabled secure networks and effective governance mechanisms, ensuring that data integrity and privacy is protected. The boundaries between freedom of expression and hate speech are clearly defined and upheld, protecting the former and eradicating the latter.

# KEY TRANSITIONS



## UNIVERSAL ACCESS TO BROADBAND AND DIGITAL SERVICES LEAVES NO ONE BEHIND

- High-quality, reliable digital infrastructure is put in place globally. Business and government collaborate to make affordable broadband and mobile access a reality for all. Connected devices become readily available, at affordable prices, irrespective of location.
- Governments and business align to address low levels of digital literacy, focusing on building skills and enhancing collaboration with the education sector.
- Connectivity and digital literacy enable individuals to use the internet responsibly and to harness its full potential for employment, communication, information and entertainment purposes. Critical services such as finance, healthcare and education are increasingly delivered through online and mobile technology solutions, driving greater social and financial empowerment, poverty reduction, improved health outcomes and reduced inequality.



### **DIGITAL PLATFORMS ENRICH SOCIAL INTERACTION AND CIVIC ENGAGEMENT**

- People leverage platforms to build and strengthen relationships with family, friends, customers and colleagues alike. The global nature of the digital environment fosters rich cultural and normative diversity.
- Governance structures emerge to address challenges such as cyber-bullying, hate speech, violent extremism and discrimination online.
- Digital tools empower individuals to participate in civil society actions and to contribute to democratic processes more broadly.
- Platforms and content providers adopt stringent policies and practices that prioritize transparency and truth, and mitigate the risk of undermining democratic processes, including by addressing the spread of disinformation leading to misinformation.
- Checks are put in place to protect against the emergence of digital monopolies and ensure that individual platforms do not possess undue levels of influence.

### **CONNECTIVITY ENABLES COLLABORATION, INNOVATION AND THE EMERGENCE OF NEW BUSINESS MODELS AND WAYS OF WORKING**

- Digital platforms and technologies enable collaborative networks within and across industries, driving new partnerships and opportunities for innovation.
- In many areas, digitalization enables a shift from traditional business models to platforms and networks that form the heart of a new digital economy, enhancing product and service offerings and creating a host of new economic and employment opportunities.
- New ways of remote working, learning and collaborating, which became mainstream during the COVID-19 pandemic, continue to be embraced by employers and employees.

### **CONNECTED DEVICES LEAD TO IMPROVED PERFORMANCE AND EFFICIENCY**

- Companies benefit from maturing technologies which make the Internet of Things (IoT) easier to implement across a variety of environments. Sensor technologies become cheaper, more advanced and more widely available. Computing power increases and applications shift toward cloud and edge computing solutions.
- As connectivity between things and organizations improves, vast amounts of data are collected and analyzed, enhancing productivity and efficiency, and optimizing energy, material and water use across a broad range of sectors.
- New standards emerge to tackle data privacy issues around connected devices.

### **THE HEALTH OF NATURAL AND SOCIAL SYSTEMS IS CONTINUOUSLY TRACKED**

- Connectivity takes on a critical role in enhancing global capacity to monitor the status of the natural world, and emerging impacts upon it. Partnerships between governments, businesses and civil society emerge to track the conditions of global forests, watersheds, fisheries and other critical natural systems in real time.
- Continuous monitoring also enables negative impacts and illegal or harmful practices to be identified early, empowering people everywhere to take timely action to protect the natural environment.
- The processing of complex datasets facilitates more targeted and impactful support for poverty and hunger alleviation, healthcare, education and disaster recovery efforts in the communities that need them most urgently.
- Companies leverage new levels of data quantity, quality and sharing, as well as blockchain technology, in order to monitor and manage supply chain risks and ensure responsible, sustainable sourcing.



**GOVERNMENTS AND BUSINESS STRENGTHEN DIGITAL SECURITY, RESPONSIBILITY AND TRUST**

- Recognition of the importance of data privacy and security grows exponentially throughout society, and organizations are increasingly held accountable.
- International guidelines that enable the flow of data and services while protecting the right to privacy are widely adopted. Businesses take the lead in ensuring the right to privacy is upheld.
- Companies partner with government, civil society and innovators to develop norms and practices that enhance trust in the digital economy.

**IMPACTS OF DIGITAL GROWTH ARE MITIGATED THROUGH RESPONSIBLE MODELS OF PRODUCTION AND CONSUMPTION**

- Technological innovation and decarbonization significantly reduce the environmental impact of both digital infrastructure and hardware.
- Electronic products are designed to be repaired, recovered, recycled and reused. Cross-sector collaboration, investment and standardization drive massive reduction, and enhanced stewardship, of electronic waste.
- Regulators, companies and civil society groups align to ensure that human rights are protected and respected throughout connectivity value chains, from minerals and metals sourcing to content oversight.
- Multi-stakeholder initiatives are convened to monitor and address the impacts of digital disruption on job markets. Companies empower workers to benefit from new technologies and provide appropriate learning, training and support.
- Consumers are made increasingly aware of the environmental and social impacts of their digital behaviors.

**RELEVANT SDGs**



- 1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
- 3.8** Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
- 4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- 5.B** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.
- 8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
- 8.7** Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers and, by 2025, end child labor in all its forms.
- 8.8** Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
- 9.C** Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.
- 10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
- 12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
- 12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.
- 13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- 13.2** Integrate climate change measures into national policies, strategies and planning.
- 13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
- 16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels.
- 16.10** Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.
- 17.8** Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.

# CONNECTIVITY

## ACTION AREAS FOR BUSINESS 2020 – 2030

01

Collaborate with governments, sector peers and financial institutions to deliver the infrastructure and service offerings needed to ensure affordable, reliable internet connectivity for all.

02

Collaborate with governments on wider initiatives to expand digital literacy and address the digital skills gap, particularly for underrepresented groups.

03

Collaborate across the ICT sector, and with civil society and governments, to build transparent and impartial infrastructure for monitoring the state of the natural world and understanding impacts in real time.

04

Harness the power of emerging digital technologies to advance supply chain transparency and traceability mechanisms, and drive open access to data.

05

Implement and help shape emerging best practices to ensure that data is safeguarded throughout connectivity value chains and that people's right to privacy is protected.

06

Convert all data centers to 100% net-zero energy.

07

Continue to implement and enhance efforts to conduct human rights due diligence throughout connectivity value chains in line with the UN Guiding Principles for Business and Human Rights.

08

Embrace circular economy principles to prevent exponential growth in e-waste and depletion of natural resources.

09

Engage with workers in the process of designing, adopting and working with new digital technologies, and equip them with the skills they need to benefit from these technologies.

10

Adopt stringent policies and practices to stem the spread of disinformation and take concrete steps to protect users from online crime, extremism, hate speech, discrimination and cyber-bullying.