

# Digital Transformation and Development - Haiti

STRATEGIC INTELLIGENCE BRIEFING

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# Contents

3	Executive summary
4	1 Latest insights
4	1.1 Current perspectives
8	2 Strategic context
8	2.1 Business Model Innovation
9	2.2 Cross-Border Trade and Cooperation
10	2.3 Entrepreneurial Ecosystems and Platforms
10	2.4 Disrupting Jobs, Demanding New Skills
11	2.5 Development Institutions as Mediators
11	2.6 Critical Infrastructure and Cyber Resilience
12	2.7 Agile Technology Governance
12	2.8 Technology Access and Inclusion
14	References
16	About Strategic Intelligence
18	Acknowledgements

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# Executive summary



Explore the interactive version online

The digital transformation of business and enterprise in Haiti involves addressing risks and fostering public-private collaboration to design secure, responsible, trusted, and culturally-relevant digital technologies. This requires shaping data policies, protocols, and partnerships among stakeholders, and building public trust to enable a truly digital identity. Additionally, governments should invest in digital infrastructure and address issues arising from digital trade. Furthermore, the role of social entrepreneurs and the impact of platforms and ecosystems in enabling more entrepreneurs to succeed, and the deployment of pay-as-you-go (PAYG) technology, are essential for social innovation. Business model innovation, driven by advanced information and communication technologies, plays a significant role in reshaping the global economy, while development finance institutions must assume a leadership role in incorporating private capital into the broader development finance landscape to achieve the United Nations' Sustainable Development Goals.

The key issues shaping and influencing Digital Transformation and Development - Haiti are as follows:

### Business Model Innovation

Developing new business models can rewrite the rules of an industry

### Cross-Border Trade and Cooperation

Increasing the extent to which information can be shared across borders will help limit further economic fragmentation

### Entrepreneurial Ecosystems and Platforms

More entrepreneurs can succeed if they are able to more freely collaborate

### Disrupting Jobs, Demanding New Skills

People losing jobs due to technology-related disruption must receive help to gain new skills

### Development Institutions as Mediators

Governments and international institutions can play a critical role in transitioning development finance away from foreign aid

### Critical Infrastructure and Cyber Resilience

The systems essential for sustaining a modern economy are increasingly interconnected and under attack

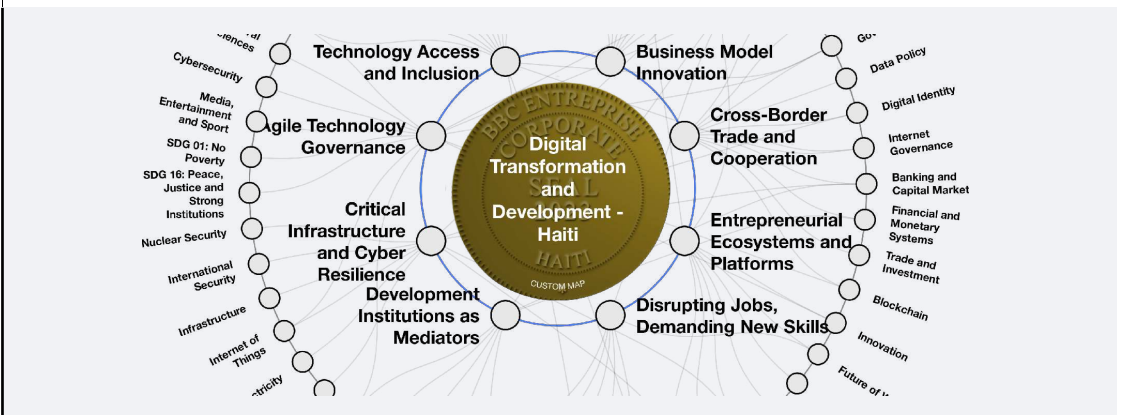
### Agile Technology Governance

Some reinvention may be necessary to better understand new technologies requiring regulation

### Technology Access and Inclusion

COVID-19 exposed digital inequality globally and exacerbated the digital divide

Below is an excerpt from the transformation map for Digital Transformation and Development - Haiti, with key issues shown at the centre and related topics around the perimeter. You can find the full map later in this briefing.



# 1

# Latest insights

A synthesis of the most recent expert analysis.

Below are your latest updates on the topic of Digital Transformation and Development - Haiti spanning 21 different sources.

## 1.1 Current perspectives



London School of Economics and Political Science

### New data protection and privacy laws have changed the regulatory landscape for researchers in the Global North

15 April 2024

New data protection and privacy laws in the Global North, including the EU, UK, Switzerland, and the US, have created a more complex regulatory environment for researchers. These changes reflect a trend towards stricter data protection standards. The EU has introduced the GDPR Procedural Regulation to enhance cooperation between Data Protection Authorities (DPAs), streamline investigations, and ensure procedural rights. In the UK, the Data Protection and Digital Information Bill introduces new definitions, changes to data protection officers, and increased fines. Switzerland's revised Federal Act on Data Protection mirrors GDPR principles and strengthens individual rights while imposing stricter compliance requirements. These developments pose challenges for researchers and require compliance with jurisdiction-specific regulations.



Cities Today

### Sunderland launches community hubs to reduce digital divide

01 February 2024

The UK city of Sunderland is launching community 'digital health' hubs to address the digital divide. The hubs will provide free access to devices and Wi-Fi to improve digital literacy and promote inclusion. The initiative is part of Sunderland's Links

for Life scheme, aimed at enhancing physical and mental health in communities. The project has received funding of £581,893 (\$741,328) from the UK Government's Shared Prosperity Fund. With a hyper-local approach, the hubs will offer doorstep digital services, particularly targeting communities with limited connectivity and high susceptibility to digital exclusion.



The Conversation

### Internet of Things: tech firms have become our digital landlords – but people are starting to fight back

08 November 2023

From smart toasters to fitness collars for dogs, we live in a world where everything around us is gradually being connected to the internet and fitted with sensors so that we can interact with them online.

Many people worry about the privacy risks of using these devices because they may allow hackers to listen to our conversations at home. The contracts for using them are so long we don't understand which other rights we might be signing away.

During research for my book, I found that using Alexa's voice command triggers 246 contracts that we have had to accept in order to use it. These contracts transfer our rights and data to countless, often unidentified, parties.



The Hague Centre for Strategic Studies

### The Promise and Peril of Emerging Disruptive Technologies for Joint and Combined Multi-Domain Operations Experts Related Research

06 November 2023

What are the implications of incorporating Emerging Disruptive Technologies (EDTs) into Multi-Domain Operations (MDO)? How does a critical and skeptical approach aid in evaluating the ethical and strategic aspects of merging EDTs with MDO? Find out in a new HCSS paper by guest author Dr. Nina Kollars



Boston Consulting Group

### Winning Formulas for E-Commerce Growth

31 October 2023

Leading Online Shoppers to the Finish Line

BCG and Shopify looked at 1 billion data points across more than 220,000 sites to determine the best ways for sellers to optimize their e-commerce conversion rates.

Many retail and CPG companies today are fighting the e-commerce blues. No wonder: 2022 brought a marked slowdown of online sales growth—after tremendous acceleration during the first years of the pandemic. Yet, despite consumers returning to brick-and-mortar shops and malls following the pandemic-driven e-commerce surge of 2020, e-commerce growth hasn't stopped.



Harvard Business Review

### How Digital Technologies Could Boost Tiny Retailers in Developing Countries

03 October 2023

Micro-retailers are vitally important to the economies of developing countries and to consumer packaged goods companies. But their full potential is not being realized. The adoption of digital technologies could help change that. But for that to happen, obstacles must be overcome. Three strategies can address them.



Carnegie India

### Understanding India's New Data Protection Law

02 October 2023

In early August 2023, the Indian Parliament passed the Digital Personal Data Protection (DPDP) Act, 2023. This working paper analyzes the law and evaluates its development over more than half a decade of deliberations.



Nepal Economic Forum

### Central Bank Digital Currency: The World and Nepal

26 September 2023

Introduction

In recent years, a noteworthy trend in the financial world has been the remarkable rise in the popularity of cryptocurrencies. Cryptocurrencies, characterized by their decentralized nature and lack of government regulation, have presented unique challenges in terms of oversight and security. In response to these challenges, governments have begun exploring the creation of their own digital currencies .

Central Bank Digital Currencies (CBDCs) represent digital versions of a nation's official currency, issued and guaranteed by the central bank.



The Strategy Bridge

### Applying Behavioral Economics to Improve Cyberspace Strategy

29 August 2023

Addressing cybersecurity through an economic lens highlights the impact of market failures—information asymmetries and misaligned incentives. Some entities fail to invest in adequate security controls because they do not incur the full costs associated with a security incident. The current public an



The Conversation (French)

### Pourquoi les sites qui proposent des calculs d'indemnisations après un accident ne sont pas forcément fiables

10 January 2024

Les sites qui proposent des calculs d'indemnisations après un accident ne sont pas fiables car ils négligent de nombreux paramètres importants. Ces calculateurs en ligne donnent des résultats peu sérieux, sont souvent à la limite de la légalité et peuvent conduire les victimes à prendre de mauvaises décisions. Ces sites simplifient et négligent la complexité du processus d'indemnisation qui nécessite l'intervention d'experts médicaux et juridiques formés. De plus, ils ne prennent pas en compte la spécificité de chaque cas, notamment les conséquences individuelles et les particularités de la victime.

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World Economic Forum

### These sectors are top targets for cybercrime, and other cybersecurity news to know this month

22 April 2024

Critical infrastructure, state institutions, and political systems are the sectors most commonly targeted by cybercriminals, according to data from the European Repository of Cyber Incidents. The healthcare sector is the most vulnerable, accounting for 14.2% of cyber attacks on critical infrastructure, including ransomware attacks and theft of patient records. Financial organizations, telecommunications, transport, and the energy sector are also frequent targets. In other cybersecurity news, Apple has upgraded its iMessage feature with quantum-proof encryption, and millions of telecom customers have been affected by a dark web leak. Additionally, various cybersecurity stories, including data leaks and cyber alliances, have emerged in the past month.



[GSMA - Policy Handbook](#)  
**Internet governance**  
23 February 2024

Internet governance involves various activities related to the management of the internet, including legal and regulatory issues, technical aspects, and economic considerations. Mobile service providers and other industry players are affected by decisions made about internet use, management, and regulation. The multistakeholder model is seen as essential for effective internet governance, allowing input from diverse stakeholders. The internet should be secure, stable, trustworthy, and interoperable, and no single entity should manage it. Collaborative, diverse, and inclusive decision-making models are necessary. Technical aspects should be addressed by relevant standards bodies, while economic and transactional issues can be handled through commercial negotiation.



[The Conversation \(Spanish\)](#)  
**Es necesario redoblar los esfuerzos para cerrar las brechas digitales en América Latina**

07 November 2023

Este artículo publicado originalmente en la revista Telos analiza por qué los avances en conectividad durante los últimos diez años en América Latina y el Caribe no han resuelto las desigualdades en el acceso a la tecnología e internet.

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[Stiftung Neue Verantwortung](#)  
**Official Public Political Attribution of Cyber Operations: State of Play and Policy Options**

11 October 2023

When states become the target of malicious cyber activity, they have various options for responding politically. Which option states pursue depends primarily on whether they know who is behind a cyber operation. It is therefore essential to identify

the perpetrator(s) of a cyber operation, a process also known as attribution. While states can engage in different forms of attribution, official public political attribution—a government entity's public disclosure of information tying malicious cyber operations to another state through official channels—represents the most significant form from a cyber diplomacy standpoint.

[Try translating with Google](#)



[GovLab - Living Library](#)  
**What Big Tech Knows About Your Body**  
27 September 2023

Article by Yael Grauer: "If you were seeking online therapy from 2017 to 2021—and a lot of people were—chances are good that you found your way to BetterHelp, which today describes itself as the world's largest online-therapy purveyor, with more than 2 million users. Once you were there, after a few clicks, you would have completed a form—an intake questionnaire, not unlike the paper one you'd fill out at any therapist's office: Are you new to therapy? Are you taking any medications? Having problems with intimacy? Experiencing overwhelming sadness?"



[Foundation for Political, Economic and Social Research](#)  
**Republican candidates grapple with escaping the shadow of Trump**  
08 August 2023

The world is changing, just as once visualized by the Lord of the Rings author J.R.R. Tolkien. Financial systems, payment systems, and transfers are all going digital. Cash usage is in decline all over the world. As an additional (but totally new generation) payment choice, central bank digital currency (CBDC) is the future of money and payment systems.



[GSMA - M4D](#)  
**What challenges do African MSMEs face in adopting e-commerce?**  
09 November 2023

MSMEs play a critical role in creating livelihoods and generating economic value in Africa. E-commerce is increasingly enabling more MSMEs to compete, facilitating access to wider markets and making business operations more efficient. On 17 October, we launched our new report E-Commerce in Africa: Unleashing the opportunity for MSMEs at MWC Kigali. According to the [...]

The post [What challenges do African MSMEs face in adopting e-commerce?](#) appeared first on [Mobile for Development](#).





UN Women Africa

## E-commerce platform bridges the digital gender divide in Rwanda

02 October 2023

During the COVID-19 pandemic, with many confined to their homes and businesses forced to shutter, digital systems became essential across all parts of life. This moment exposed a stark gender divide: many women-owned businesses operated offline and faced significant challenges when they suddenly needed to transition. But it also presented an opportunity to increase their engagement and participation within the e-commerce sector.



Wired

## The NSA Seems Pretty Stressed About the Threat of Chinese Hackers in US Critical Infrastructure

10 November 2023

The United States National Security Agency is often tight-lipped about its work and intelligence. At the cyberwarcon security conference in Washington DC on Thursday, two members of the agency's cybersecurity collaboration center had a "call to action" for the cybersecurity community: beware the threat of Chinese government-backed hackers embedding in US critical infrastructure.

Alongside its "Five Eyes" intelligence alliance counterparts, the NSA has been warning since May that a Beijing-sponsored group known as Volt Typhoon has been targeting critical infrastructure networks, including power grids, as part of its activity.

Officials emphasized on Thursday that network administrators and security teams need to be on the lookout for suspicious activity in which hackers manipulate and misuse legitimate tools rather than malware—an approach known as "living off the land"—to carry out clandestine operations. They

added that the Chinese government also develops novel intrusion techniques and malware, thanks to a substantial stockpile of zero-day vulnerabilities that hackers can weaponize and exploit.



Australian Strategic Policy Institute

## The threat spectrum

03 November 2023

A group of scientists have issued a stark warning that the planet is being pushed into a climate crisis that could threaten the lives of up to six billion people this century. In a report released last week in the journal *Bioscience*, 12 scientists from Asia, Europe and North America said that they were 'shocked by the ferocity of the extreme weather events in 2023'.

The report provides a snapshot of the health of the earth measured against 35 'planetary vital signs'. The analysis shows that human activity has reached new extremes on 20 of these measurements, including global gross domestic product, fossil-fuel subsidies, annual carbon pollution and glacier thinning. A lead author on the report says: 'We're on our way to the potential collapse of natural and socioeconomic systems and a world with unbearable heat and shortages of food and freshwater.'



Stockholm International Peace Research Institute

## Mapping Pathways for Peace through the Composition of Official Development Assistance

01 September 2023

Mapping the changing composition of official development assistance (ODA) against peace and conflict patterns in recipient countries over time can enhance the understanding of how pathways to peace look like in practice.

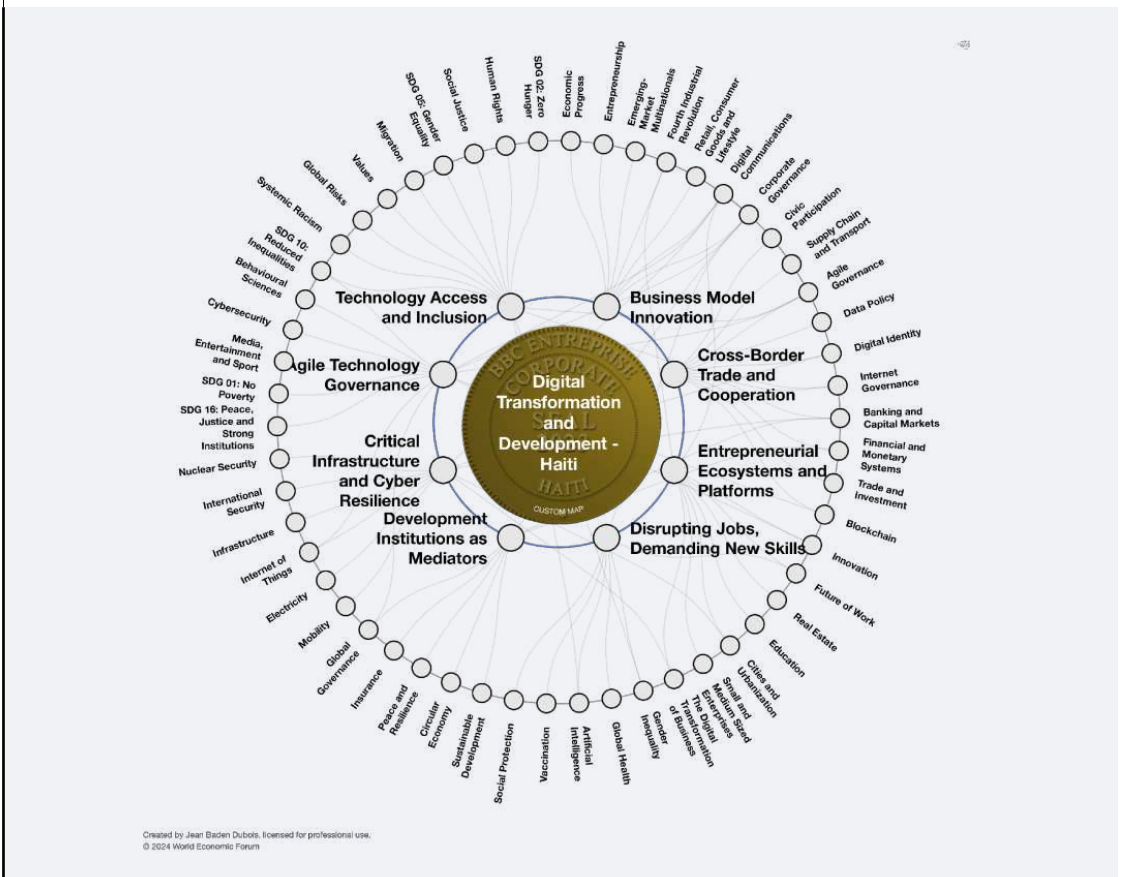
## 2

# Strategic context

## The key issues shaping Digital Transformation and Development - Haiti.

The following key issues represent the most strategic trends shaping the topic of Digital Transformation and Development - Haiti. These key issues are also influenced by the other topics depicted on the outer ring of the transformation map.

FIGURE 1 Transformation map for Digital Transformation and Development - Haiti



## 2.1 Business Model Innovation

*Developing new business models can rewrite the rules of an industry*

The internet spawned Airbnb, Amazon, Netflix, Uber and many other companies that have used business model innovation to rewrite the rules of their industry. That means they managed to change accepted ways of doing business, challenged the status quo, and served new customer needs while meeting existing needs in new ways. In doing so, they created enormous wealth for shareholders while providing useful services for



customers. They have also been sources of inspiration for more established firms like Bosch, IKEA, or Philips as they assess and update their own business models. To better understand business model innovation, it helps to define what a business model is. As noted in the 2021 book *Business Model Innovation Strategy*, these core elements characterize a business model: what, how, who and why. More specifically, what activities does a business model encompass; how are these activities linked (for example, in terms of sequencing or exchange mechanisms), who performs the activities (which are performed by the focal firm versus those performed by partners, suppliers, or customers), and lastly why does the business model create value and enhance value appropriation for the focal firm?

Firms can innovate the "what" by adding or eliminating activities (for example, when Apple began selling and distributing content for electronic devices in addition to designing and manufacturing those devices). They can innovate the "how" by linking activities in new ways (Netflix first competed against video-rental stores through postal distribution, then via online streaming). Firms can also innovate the "who" by changing who performs certain activities (Tesla performs the sales function in-house instead of outsourcing it to dealers). Lastly, firms can innovate the "why" by adopting new revenue models and value logic (for example, Dropbox makes basic file storage free but charges for additional capacity). Much business model innovation has been driven by advanced information and communication technologies that enable new ways of doing business, though it is distinct from technology and product innovation. Business model innovation often flows from a unique take on customer needs and the best ways to satisfy them. The idea of software-as-a-service, for example, represented by firms like Salesforce, was driven by a realization that customers do not necessarily care about owning software outright. Such business model innovation can be a powerful source of competitive advantage, though it requires astute implementation and simultaneous change in multiple parts of the organization.

Related topics: [Economic Progress](#), [Entrepreneurship](#), [Emerging-Market Multinationals](#), [Fourth Industrial Revolution](#), [Retail](#), [Consumer Goods and Lifestyle](#), [Digital Communications](#), [Corporate Governance](#)

## 2.2 Cross-Border Trade and Cooperation

*Increasing the extent to which information can be shared across borders will help limit further economic fragmentation*

Technological innovation and digitization have had profound impacts on international trade. Digital trade in services is among the most dynamic sectors in the global economy, as evidenced by the growth of digital financial payments and cross-border data flows. Still, barriers persist that prevent governments from achieving their national digital-economy goals. These include outdated rules and regulations, new forms of protectionism, and a lack of international collaboration on digital governance. Governments should work together across sectors to explore ways to close the trade finance gap and promote greater interoperability of cross-border data flows. Creating appropriate digital trade rules alongside a healthy ecosystem can enable fair and sustainable growth opportunities - and should be a priority for governments.

Sufficiently investing in digital infrastructure remains one of the central prerequisites for enabling seamless data transmission. And breaking through data and digital-identity silos is key for enabling consistent data flows capable of powering a digital economy. Through greater alignment on data collection and data-sharing processes, governments can significantly increase the extent to which information can be shared across borders. In turn, this will help prevent further economic fragmentation and enable broader access to global markets.

Priorities for collaboration:

- Develop next-generation trade agreements for the digital age.
- Adopt C4IR technologies (TradeTech) to facilitate domestic resilience, global trade, and supply chains.
- Identify and address broader issues arising from digital trade.

Related topics: [Civic Participation](#), [Supply Chain and Transport](#), [Agile Governance](#), [Data Policy](#), [Digital Identity](#), [Internet Governance](#), [Banking and Capital Markets](#), [Financial and Monetary Systems](#), [Trade and Investment](#), [Blockchain](#)

## 2.3 Entrepreneurial Ecosystems and Platforms

*More entrepreneurs can succeed if they are able to more freely collaborate*

The last few decades have seen the emergence of platform business models that take a flatter, more inclusive, and innovation-centric approach to value creation. Platform-based strategies change the ways organizations conduct business by increasing openness and engaging more freely with external entities. Some of the world's biggest companies, like Uber, Amazon, and Meta (formerly Facebook), were startup platforms that grew rapidly by orchestrating value-creating interaction among independent suppliers and users. Entrepreneurial firms typically lack resources and legitimacy, and their technological, organizational, and financial resources tend to be scattered and asymmetrically distributed; this prompts them to collaborate with other, often larger and better-resourced organizations that can give them access to customers and distribution. However, such alliances are not always easy to establish and govern due to size and cultural differences. In this context, the participation of entrepreneurial firms in digital platforms can be critical for survival - as these platforms can grant entrepreneurial firms much-needed exposure to customers and business partners. Examples of this include sellers whose products become highly successful on Amazon or Etsy, or fintech firms who join a digital bank's platform to reach new users.

There are also many instances of entrepreneurial firms establishing new platforms. Airbnb, Deliveroo, and PatientsLikeMe are examples of addressing a gap in a market by connecting seekers and providers of information, services, and products. Establishing and scaling up a platform is not easy, however. Entrepreneurs sometimes need large infusions of funding to help incentivize platform members to join - by giving cash to customers opening new accounts, for example, or giving smart phones to Uber drivers. The concept of "ecosystems" has also gained traction among academics and industry practitioners as a way to boost the odds of survival for entrepreneurial firms. These are groups of firms that (co-)create and capture value through collaboration thanks to their complementary natures. Ecosystems are common in industries like advertising and automotive, and can take hold and increase value in many contexts. For entrepreneurial firms, understanding the ways they complement other firms and joining (or creating) ecosystems accordingly may be crucial - because they can provide much-needed resources for research & development, marketing, and distribution through collaboration. Ultimately, platforms and ecosystems can enable more entrepreneurs to succeed - by facilitating a collaborative, rather than purely competitive, mindset.

Related topics: [Innovation](#), [Digital Communications](#), [Future of Work](#), [Real Estate](#), [Fourth Industrial Revolution](#), [Education](#), [Cities and Urbanization](#), [Small and Medium Sized Enterprises](#), [The Digital Transformation of Business](#)

## 2.4 Disrupting Jobs, Demanding New Skills

*People losing jobs due to technology-related disruption must receive help to gain new skills*

The Fourth Industrial Revolution has had a significant impact on livelihoods, and is generating serious demand for new skills. In the United Kingdom, for example, artificial intelligence and related technologies are poised to eliminate 7 million jobs by 2038, though they are also expected to create about 7.2 million new jobs in that same country over the same period - in the healthcare sector, in scientific labs, and in education systems, according to a report published by PwC. Related business model disruptions will have a profound impact on the employment landscape in many sectors, leading to similarly significant trends in terms of both new job creation and job elimination, potentially heightened productivity, and wider gaps between existing skills and those that are most sought-after among employers. Given the anticipated depth of this technological disruption, there is a pressing need to come up with more effective ways to help people develop new skills and stem job losses. During previous industrial revolutions, it has frequently taken decades to build the training systems and labour market institutions necessary to foster new skillsets.

Given the relentless pace of the current industrial revolution, however, such a relatively extended interval to allow for adequate skills development may no longer be possible. In order to address this challenge, businesses must promptly recognize and invest in their people as a valuable asset, rather than continue to perceive them as a potential liability. This is no less true as they try to find a firmer footing amid the lingering impacts of the COVID-19 pandemic, which may prompt them to increasingly turn to Fourth Industrial Revolution technologies. Ultimately, it will require them to develop and deploy more proactive talent-management strategies, and to cultivate deeper and more consistent collaboration with both governments and education providers. In terms of dealing with workers in fields that are disproportionately faced with potential job reductions, these businesses must attempt to provide both reskilling support and

opportunities for viable occupation transitions. Any related efforts need to be firmly grounded in an understanding of the particular attributes of the country where they operate - and anticipate not only current skills requirements, but also future developments.

Related topics: [Future of Work](#), [Gender Inequality](#), [Global Health](#), [Artificial Intelligence](#), [Vaccination](#), [Social Protection](#), [Corporate Governance](#)

## 2.5 Development Institutions as Mediators

*Governments and international institutions can play a critical role in transitioning development finance away from foreign aid*

International financial institutions like the World Bank and the International Monetary Fund, multilateral development banks like the Inter-American Development Bank, and development finance institutions sponsored by national governments have formed the bedrock of development finance since World War II. They still provide the vast majority of the world's roughly \$300 billion in development finance. But development experts increasingly agree that these traditional players will fall well short of what the international community needs to achieve the United Nations' Sustainable Development Goals. Massive amounts of additional private capital are needed - and these incumbent development institutions should play a central mediation role to help make that happen. Beyond their own financing activities, they should assume a leadership role in incorporating private capital into the broader development finance landscape. They can catalyse more of this "blended finance" in several ways, for example by identifying and delivering more projects already at the "shovel-ready" phase to investors, rather than foraging for the financing of a project from start to finish.

By serving as mediators in this way, it would enable multilateral development banks to build larger project portfolios, as they grease the wheels for private capital to flow into Sustainable Development Goal-friendly activities. This would also be an optimal way for these institutions to deploy their expertise and identify more bankable projects for private-sector investors less familiar with relatively volatile developing countries. Ultimately, existing stakeholders need to redefine their role in international development in a way that allows them to get more investors like pension funds, insurance companies, commercial banks, and retail investors involved at different stages of a project. Evidence is emerging that these incumbent institutions have in fact begun to mobilize large amounts of private capital in this way. According to the International Finance Corporation, multilateral development banks and development finance institutions mobilized more than \$69 billion in private capital in low- and middle-income countries in 2018. In order for them to assume a mediation role that truly enables private financing of global development at scale, all of these institutions need to fundamentally reassess their roles in the development finance landscape.

Related topics: [Sustainable Development](#), [Banking and Capital Markets](#), [Circular Economy](#), [Financial and Monetary Systems](#), [Peace and Resilience](#), [Insurance](#), [Corporate Governance](#), [Global Governance](#)

## 2.6 Critical Infrastructure and Cyber Resilience

*The systems essential for sustaining a modern economy are increasingly interconnected and under attack*

The US Department of Homeland Security defines critical infrastructure as assets and networks - physical or virtual - considered so vital their incapacitation or destruction would have a debilitating effect on national economic security, public health, or safety. Around the world, there is a shared imperative to secure such vital systems. A study published by the Center for Strategic and International Studies in 2021 identified more than 200 significant cyber-attacks on critical infrastructure that had occurred in the prior year, affecting systems in more than two dozen countries. Finance, telecommunications, emergency response, energy, health services, transportation, water supply, and food systems are all examples of functions that must be reliable and consistent - interruption or failure in any of them could result in economic hardship, loss of essential services, and a loss of safety. Many essential activities that support critical infrastructure have been increasingly digitalized, and rely on computers and networks - including the internet - to operate. Any breakdown of cybersecurity defenses built to protect these functions could result in catastrophe, and our heavy reliance on technology demands a correspondingly concerted effort to secure it.

With adequate cyber resilience, organizations can confidently and consistently provide their products and services - without it, they risk falling short for their constituencies. Resilience demands that an organization take a holistic view of its technology, and that it focus on foundational elements including cybersecurity,

business continuity, and enterprise risk management, all coordinated around a single mission: to operate as planned, and to continue to meet expectations even in the face of cyber events that could otherwise thwart operations - and to be able to do so even when more comfortable, customary ways of operating are unavailable. Critical infrastructure resilience begins with a serious assessment that takes an unclouded view of the vulnerabilities that may exist, and of the potential for them to be exploited - followed by the development of methodical tests and resolution plans for every conceivable risk scenario and potential operational failure that can impact an organization, specific to its sector and the services it provides. Everyone has a right to expect that critical infrastructure is digitally secure and sustainable in the face of any potential cyber threat.

Related topics: [Cities and Urbanization](#), [Mobility](#), [Banking and Capital Markets](#), [Digital Identity](#), [Electricity](#), [Internet of Things](#), [Infrastructure](#), [International Security](#), [Digital Communications](#), [Nuclear Security](#), [The Digital Transformation of Business](#)

## 2.7 Agile Technology Governance

*Some reinvention may be necessary to better understand new technologies requiring regulation*

Governments may have to reinvent the ways they operate in order to keep pace with technology. Powerful digital tools like artificial intelligence are swiftly disintermediating entire markets - taking influence away from traditional regulators and unskilled workers, and increasingly handing it to corporations and skilled labour. Meanwhile public sector officials everywhere are being challenged to move beyond simply understanding major technological advances to being able to mitigate, shape, and harness them in order to better govern - by becoming more accessible, transparent, and trustworthy. Governments making this transition will have to change their approaches to creating and enforcing regulation, not least in order to safely stimulate rather than stymie innovation. These governments may have to create brand-new ways to cope with the spread of new technologies, either by nurturing internal expertise or by working together with the private sector. Those that are sufficiently agile will be able to find ways to better understand the task at hand - and to steer technological development in ways that improve the state of the world for everyone.

Faster, 5G mobile networks promise to make digital communication even more ubiquitous, and increasing levels of processing power and storage capacity are boosting the amount of knowledge readily available to just about any computer user. When coupled with the increased availability and quality of data, conveyed through increasingly rich and varied visualizations and other analytic techniques, these trends have the potential to fundamentally reshape online discourse, news reporting, and public services - in ways that can respond more directly to the needs of the public. But there are also serious related risks that need to be managed. According to Cisco's 2018 Annual Cybersecurity Report, cyber attackers targeting governments have developed increasingly sophisticated and threatening malware, and can cover their tracks with encryption while exploiting novel vulnerabilities in cloud computing and the Internet of Things. New and evolving rules of the road such as the European Union's General Data Protection Regulation, which came into effect in 2018, will be critical for managing the consequences of such threats - but will also introduce their own new complexities to governing.

Related topics: [Internet of Things](#), [Global Governance](#), [Agile Governance](#), [Digital Communications](#), [Innovation](#), [Blockchain](#), [Corporate Governance](#), [SDG 16: Peace, Justice and Strong Institutions](#), [SDG 01: No Poverty](#), [Media, Entertainment and Sport](#), [Cybersecurity](#), [Behavioural Sciences](#), [SDG 10: Reduced Inequalities](#)

## 2.8 Technology Access and Inclusion

*COVID-19 exposed digital inequality globally and exacerbated the digital divide*



















Providing people with greater internet access can potentially improve their quality of life, by enabling them to more easily tap into government and educational resources. The COVID-19 pandemic has dramatically accelerated the digitization of economies and societies - access to digital technologies enabled many people to continue to working, learning, and seeing friends and family despite mobility restrictions imposed during the health crisis. But the crisis also magnified existing gaps and inequalities for the estimated 2.9 billion people who are still not able to use the internet, according to the International Telecommunications Union. Although most of the world's population now lives in areas that are covered by a broadband network, only about two-thirds are actually online - meaning that cost, and not technical coverage, is the key barrier

preventing greater connectivity. Investing in the creation of more inclusive digital communities is essential for reducing this digital divide, by not only bolstering public access and affordability but also by increasing the average person's digital skills and awareness of important related issues.

















Greater digital inclusion can also improve public services. For example, Maputo, Mozambique, which has had a solid waste management problem and where many residents live in informal settlements, has deployed a participatory monitoring platform and encouraged citizens to use it to report waste issues, and to keep track of waste management services - in a bid to help improve service delivery. By gaining access to increasing amounts of digital content, people can become better able to understand and navigate the systems increasingly relied upon to deliver health care, education, employment services, and civic participation opportunities. Vulnerable communities like the expanding global population of refugees and internally displaced people (at the end of 2021, the UN human rights agency estimated the total number of people worldwide forced to flee their homes was 89.3 million) can particularly benefit from greater digital inclusion. Digital accessibility also presents an opportunity to better empower communities with more specific needs, like indigenous people, rural communities, people with disabilities (via assistive technologies like voice-recognition software), women and girls, and young people who have been historically disenfranchised.

Related topics: [SDG 10: Reduced Inequalities, Gender Inequality, Systemic Racism, Internet Governance, Global Risks, Values, Migration](#), [SDG 05: Gender Equality, Social Justice, Artificial Intelligence, Human Rights, Agile Governance](#), [SDG 02: Zero Hunger](#)

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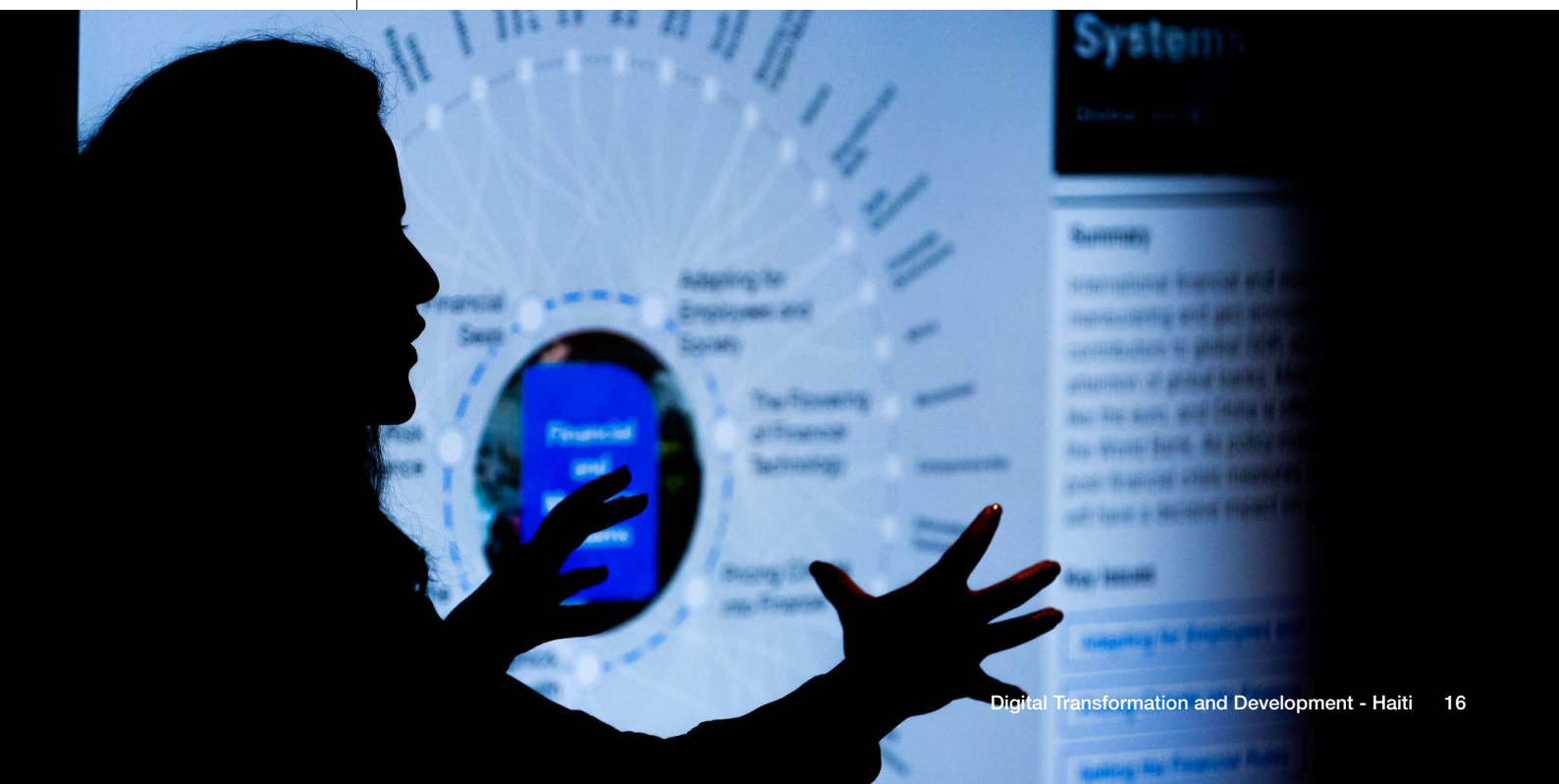
## Our approach

In today's world, it can be difficult to keep up with the latest trends or to make sense of the countless transformations taking place. How can you decipher the potential impact of rapidly unfolding changes when you're flooded with information - some of it misleading or unreliable? How do you continuously adapt your vision and strategy within a fast-evolving global context? We need new tools to help us make better strategic decisions in an increasingly complex and uncertain environment.

This live briefing on Digital Transformation and Development - Haiti, harnesses the World Economic Forum's [Strategic Intelligence](#) platform to bring you the very latest knowledge, data and context from our 300+ high quality knowledge sources. Its aim is to help you understand the global forces at play in relation to Digital Transformation and Development - Haiti and make more informed decisions in the future.

Each day, our Strategic Intelligence platform aggregates, distills and synthesizes thousands of articles from around the world. We blend the best of human curation with the power of machine learning to surface high-quality content on over [two hundred global issues](#) to our one million users globally. Our hand-picked network of [content partners](#) from around the world means that we automatically exclude much of the noisy clickbait, fake news, and poor quality content that plague the Internet at large. We work with hundreds of think tanks, universities, research institutions and independent publishers in all major regions of the world to provide a truly global perspective and we are confident that our data are well positioned when it comes to the intrinsic biases inherent to open text analysis on uncurated content from the Internet. For further context on our approach, you may be interested to read [Strategic trend forecasting: anticipating the future with artificial intelligence](#) and [These Are The 3 Ways Knowledge Can Provide Strategic Advantage](#).

↓ A leading expert presenting a transformation map at our Davos Annual Meeting



# Transformation maps

Our [Transformation Maps](#) are dynamic knowledge visualisations. They help users to explore and make sense of the complex and interlinked forces that are transforming economies, industries and global issues. The maps present insights written by experts along with machine-curated content. Together, this allows users to visualise and understand more than 250 topics and the connections and inter-dependencies between them, helping in turn to support more informed decision-making by leaders.

The maps harness the Forum network's collective intelligence as well as the knowledge and insights generated through our activities, communities and events. And because the Transformation Maps are interlinked, they provide a single place for users to understand each topic from multiple perspectives. Each of the maps has a feed with the latest research and analysis drawn from leading research institutions and media outlets around the world.

At the centre of each map is the topic itself. This is surrounded by its "key issues", the forces which are driving transformation in relation to the topic. Surrounding the key issues are the related topics which are also affected by them. By surfacing these connections, the map facilitates exploration of the topic and the landscape within which it sits.

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