WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Digital Communications
Dynamic Briefing

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Digital Communications

Co-curated with **Nanyang Technological University (NTU)**

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About

This dynamic briefing draws on the collective intelligence of the Forum network to explore the key trends, interconnections and interdependencies between industry, regional and global issues. In the briefing, you will find a visual representation of this topic (Transformation Map – interactive version available online via intelligence.weforum.org), an overview and the key trends affecting it, along with summaries and links to the latest research and analysis on each of the trends. Briefings for countries also include the relevant data from the Forum's benchmarking indices. The content is continuously updated with the latest thinking of leaders and experts from across the Forum network, and with insights from Forum meetings, projects communities and activities.

Executive summary

The digital communications industry is facilitating unprecedented levels of global internet use, online social interaction, and financial inclusion. As the industry is transformed, effective policy and regulation that support businesses could boost productivity. At the same time, the industry must be open to new models of collaboration and governance, in order to better address challenges like data privacy and growing demands on infrastructure.

This briefing is based on the views of a wide range of experts from the World Economic Forum's Expert Network and is curated in partnership with A S Madhukumar, Associate Professor, School of Computer Engineering, Nanyang Technological University (NTU), Singapore.

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Policy Uncertainty

Change affecting the digital communications sector is outpacing existing regulation

The global playing field for the digital communications industry has changed significantly over the years, due to advancing digitalization. We have moved well beyond the time when the focus for regulators was simply on the competitive dynamic between individual telecommunications industry players. Now, regulators must understand and assess a complicated landscape populated by both ageing incumbents and the younger, digitally-focused players interacting with the industry and providing unprecedented access to an array of services. About 71% of the world's population will have a mobile phone subscription by 2025, according to a report published in 2018 by the trade group GSMA, and nearly 1.8 billion people will begin using the mobile internet over the next eight years. The explosive growth of social media use, together with the advent of new smart devices, is exponentially increasing demand for wireless data. A fundamental resource needed to meet this demand is spectrum - which is relatively scarce, and subject to the significant influence of policy-makers. In 2017, mobile spectrum auctions raised about $25 billion in funding for the public sector, according to the GSMA report.

Conventional spectrum management strategies are based on so-called static allocation, where spectrum is licensed in discrete portions according to a radio standard. In recent years, developments in digital signal processing and semiconductor technologies, and the advent of artificial intelligence-based networks, have led to more agile, cooperative, and cognitive wireless platforms. The trade-offs involved in deploying these innovations must be carefully evaluated, and novel, dynamic spectrum allocation policies - which enable the ad-hoc utilization of spectrum, rather than letting it sit unused in rigid structures - must be formulated in order to unlock their potential. As standards evolve, they should also better accommodate the changing technological landscape - in order to eliminate the fragmentation of development, and to help to reduce capacity bottlenecks. Policy-makers must incentivize incumbent telecom industry stakeholders, to enable the faster adoption of new technologies. Regulators need to tread carefully, however, in order to ensure fair play among service providers. The ultimate performance indicator is sustainability; policy-makers should play a proactive role in promoting energy-efficient, sustainable technologies so that industry transformation can have a positive impact on society.

Related insight areas: Fourth Industrial Revolution, Corporate Governance, Agile Governance, Global Governance, Sustainable Development, Internet Governance, Values, Public Finance and Social Protection

Asian Development Bank

It's not just about the financing. Infrastructure needs to be well built.

27 January 2020

The delivery of services – such as clean water, reliable public transport, schools and hospitals – through economic and social infrastructure is among the most important functions of government. Resources must be well spent to ensure quality.

Asian Development Bank

Enhancing Financial Connectivity between Asia and Europe: Implications for Infrastructure Convergence between the Two Regions

22 January 2020

If Asian countries agree to offer 50% of their spillover revenue to infrastructure investors from Europe, this might increase the rate of return of long-term investment funds.

World Economic Forum

Here's how to improve access to healthcare around the world

15 January 2020

Digital technology, inclusive innovation and progressive partnerships can transform primary healthcare services for all.

Australian Strategic Policy Institute

The 11th Madeleine Award: best and worst of times

12 January 2020

'It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of …

Harvard Kennedy School – Journalist's Resource

Research finds challenges in access to treatment for opioid use disorder

08 January 2020

A federal government database of doctors who provide medication-assisted treatment for opioid use disorder is rife with inaccurate contact information, research shows. The post Research finds challenges in access to treatment for opioid use disorder appeared first on Journalist's Resource .

Pew Research Center

10 tech-related trends that shaped the decade

20 December 2019

The tech landscape has changed dramatically over the past decade, both in the United States and around the world.

Peterson Institute for International Economics

Facebook's Libra Currency Could Bring Benefits but also Risks for Developing Countries

12 December 2019

Anxiety about Libra, Facebook's proposed digital currency, continues to grow among policymakers worldwide. A recent report commissioned by the G-7 warns that stablecoins—digital currencies backed by assets with a stable value—that are adopted on a global scale could pose a challenge not only to…

Secure Data Transmission

Increased computing power may make digital communication more vulnerable to hacking

Next-generation digital networks are expected to make broadband connectivity a reality anywhere, anytime. Every facet of our lives is going to be digitalized and networked, as governments around the world push initiatives involving self-driving vehicles, environmental monitoring and online payments. This will increase the exchange of sensitive data across networks, and the networking of critical assets. The key to the success of these initiatives is therefore the protection of data integrity, and of data privacy. Since the World War II, increasingly robust and diverse cryptographic techniques, used to essentially write sensitive information in code, have been deployed to keep the data on networks secure. State-of-the-art cryptographic techniques are based on the exchange of widely available public keys, and undisclosed private keys, both of which function like passwords and are related through complex mathematical expressions. Due to ever-increasing computing power, however, these keys may become vulnerable to so-called brute-force attacks, which involve testing all the possible combinations of characters in a key through extensive trial and error, in order to decrypt information.

Traditionally, a dedicated security layer within a network's protocol stack, or the software that sets the rules for a network's interconnectivity, is used to provide secrecy - while the physical layer of networking equipment is limited to tasks related to signal processing and transmission. However, it has recently been discovered that the physical layer can also be used to potentially provide security. Emerging cryptographic techniques like quantum cryptography, which relies on physics rather than math in order to encode information using elements such as light particles, deserve attention; the first quantum transaction, in 2004, used entangled photons to transfer money into a bank account. Blockchain is another networking paradigm gaining traction, as a distributed, cryptography-based service enabler. Privacy is not necessarily guaranteed through blockchain, but the integrity of data can be ensured using the technology, which can also reduce transaction costs - and is expected to be adopted for a wide variety of applications in the near future. Policy-makers and system architects must take these new paradigms into account, when conceiving the next generation of communications infrastructure. In addition, communities focused on open source software, developers, industry groups must seek to ensure that proposed solutions are affordable, and can be widely adopted.

Related insight areas: Agile Governance, Banking and Capital Markets, International Security, Digital Economy and Society, Blockchain, Global Risks, Internet Governance, Information Technology, 5G, Cybersecurity

London School of Economics and Political Science

Gambling against the Kenyan state | Africa at LSE

24 January 2020

Gamblers in Kenya see their activity as a legitimate way to make money in a corrupt economy that offers no stable employment and where wealth is based on theft.

London School of Economics and Political Science

Fin-tech in Kenya should not cause poverty in pursuit of financial inclusion

20 January 2020

M-Pesa has been hailed for making it possible for poorly collateralised low-income borrowers, especially from remote rural areas, to access financing and short-term lending. This niche group has traditionally been out of reach, until tapped into by mobile network operator Safaricom, M-Pesa's parent company, and other small lenders. With few other alternative avenues to access loans, this market segment is highly vulnerable to exploitation.

World Economic Forum

3 ways to boost innovation in the 5G digital economy

15 January 2020

Two-thirds of the global workforce will then use the 5G platform by 2030, encouraging innovation and emerging technologies.

Asian Development Bank

How Asia can ride the digital wave to spur financial development

09 January 2020

The 'app economy' provides potential risks and benefits for developing countries. The right policies are needed to bring out the best in these emerging economic trends.

VoxEU

The innovation premium to soft skills in low-skilled occupations

02 January 2020

A growing literature emphasises that firm heterogeneity plays a large role in explaining wage differences across workers. This column highlights one channel through which firm features feed through into the wages of workers in low-skilled occupations, namely, the interplay between a firm's innovativeness and the complementarity between the (soft) skills of workers in low-skilled occupations and the firm's other assets. It shows that more R&D-intensive firms pay higher wages on average, and in particular workers in certain low-skilled occupations benefit considerably from working in more R&D-intensive firms.

SpringerOpen

LCBPA: two-stage task allocation algorithm for high-dimension data collecting in mobile crowd sensing network

23 December 2019

Mobile crowd sensing (MCS) is a novel emerging paradigm that leverages sensor-equipped smart mobile terminals (e.g., smartphones, tablets, and intelligent wearable devices) to collect information.

Indian Council for Research on International Economic Relations

Liberalising Satellite Communications in India: Opportunities for Enhanced Economic Growth

09 December 2019

Cross-border data flows have become indispensable to international trade. Data is experiencing a new found and unprecedented role as input to global trade and commerce, impacting not only the information technology (IT) sector, but also traditonal industries. …

Sustainable Communications Infrastructure

Technologies like blockchain and software-defined networking can cut both costs and energy use

The amount of electricity consumed by information and communications technology networks rose 31% between 2010 and 2015, while related operational carbon emissions rose 17%, according to a study published in 2018 by the Centre for Sustainable Communications at the KTH Royal Institute of Technology. That trend is expected to continue unabated, as internet users, devices, and data rates increase, and networks expand. More energy-efficient infrastructure can directly result in a reduction in carbon emissions; this is a particularly pressing need as the world braces for the fourth industrial revolution, which is a result of a combination of emerging technologies related to digital communications, including cloud computing, data analytics, artificial intelligence, and drones. This mix of technologies may also lead to a related mix of standards - and to a resulting fragmentation of valuable resources and capacity. Greater adaptability of infrastructure, in a world of diverse wireless standards, is essential; however, current, state-of-the-art communications networks, including emerging Long Term Evolution (LTE) networks, are based on rigid, centralized architecture.

Blockchain-style distributed networking, where users are able to communicate through direct, peer-to-peer links, could improve service quality by reducing latency, and cut energy costs. Software-defined networking, which enables a network administrator to quickly manipulate traffic and services independent of hardware, and network functions virtualization, where things like intrusion detection can be done through software rather than having to rely on hardware, are being touted as the future of networks. According to a white paper published by the World Economic Forum in 2017, these technologies are being used to replace traditional, hardware-based platforms, and increase efficiency while reducing both operating costs and energy consumption. Another way to cut energy consumption, and to increase environmental sustainability, is to replace telecom networks powered by the electricity grid and batteries. Renewable energy can be problematic due to the intermittent nature of the related energy supply. However, due to the evolution of advanced power storage technologies, sustainable power generation is expected to emerge as a reliable alternative to fossil-fuel-based power in the near future. When it comes to Internet of Things networks, for example, energy harvesting sensors can provide a sustainable alternative to battery-powered sensors. The digital communications industry should make efforts to optimize accordingly.

Related insight areas: Environment and Natural Resource Security, Climate Change, Oil and Gas, Future of Energy, Cities and Urbanization, Sustainable Development, Electricity

World Economic Forum

The world is failing miserably on access to education. Here's how to change course

20 January 2020

At current rates of progress, Sustainable Development Goal 4 - to ensure inclusive and equitable quality education for all - will be missed by 88%.

World Economic Forum

Countdown to Davos: what we need to do to scale up access to children's surgical care

17 January 2020

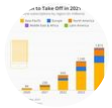
Six million children die a year due to lack of access to surgery. But there are solutions - and they'll be discussed at Davos.

World Economic Forum

How to save the planet, one mobile device at a time

13 January 2020

Mobile phones have transformed millions of lives for the better - but they carry an enormous environmental cost. Here are some of the changes we can - and must - make to reverse this.



World Economic Forum

How 5G and the Internet of Things can create a winning business

08 January 2020

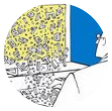
New technologies will impact every market and every industry in a way that many of us have not yet begun to consider. Here is how to make the most of it.

LSE Business Review

What leads financial and non-financial firms to adopt corporate social responsibility?

08 January 2020

In an era when the voice of customers, environmentalists and other interest groups is getting stronger and stronger, corporate social responsibility (CSR) is increasingly adopted by firms and other organisations as a strategy to reduce business risks and achieve results that satisfy both shareholders and stakeholders. CSR is associated with a large number of related concepts such as business ethics, […].



Project Syndicate

How Trolls Overran the Public Square

09 December 2019

Since the invention of writing, human innovation has transformed how we formulate new ideas, organize our societies, and communicate with one another. But in an age of rapid-fire social media and nonstop algorithm-generated outrage, technology is no longer helping to expand or enrich the public sphere.

Wired

A Remote Tanzanian Village Logs Onto the Internet

08 December 2019

The Danish company Bluetown installed a hot spot in Sagara B, with download speeds fast enough for Netflix and for local life to change.

An Expanding Internet of Things

Waves of connected devices are blurring the boundary between the physical and digital worlds

The Internet of Things facilitates a flow of information between smart devices, cars, and home appliances; an estimated 8.4 billion physical objects were actively connected via the technology in 2017, according to the research firm Gartner, or an increase of nearly a third compared with the prior year. The impact this has on peoples' daily lives is considerable. One can now cut travel time by making better decisions and taking an optimal route with less traffic, for example, while remote health monitoring for elderly patients is now more feasible. The spread of connected devices, and increased social media use and general online activity, have paved the way for new marketing techniques and customization, and play vital roles in new wealth creation. However, an increasing number of connected devices may make it difficult for wireless service providers to guarantee quality; one way to reduce cost and latency for the Internet of Things might be to deploy decentralizing blockchain technology.

The advancement of the Internet of Things and artificial intelligence has triggered a major shift in the interaction between machines and humans. Intelligent human-machine interfaces could be deployed among connected devices, as could virtual reality and augmented reality technologies, in order to enhance efficiency. The potential for blending these technologies is tremendous; examples of related application areas include real estate (where property could be "visited" by someone virtually), architecture (where someone could tour a building before its construction), and healthcare (enabling the remote monitoring of patients). However, there are challenges that need to be addressed before mass adoption is possible. The cost of devices needs to become cheaper, for example, and data privacy and protection must be addressed. Human-machine interface technology could also be hampered by the bulky size, price, and compatibility of virtual reality and artificial reality devices. Still, there are exciting possibilities. According to a report published by the trade group GSMA in 2017, about 30% of smartphone owners in Pakistan, Bangladesh, and India had never used the internet on their phones due to a lack of digital literacy; Internet of Things-based human-machine interfaces could help overcome such challenges, by enabling the use of simple human gestures to access digital services.

Related insight areas: Bangladesh, Pakistan, India, Internet Governance, Fourth Industrial Revolution, Internet of Things, Blockchain, Healthcare Delivery, Virtual and Augmented Reality, Artificial Intelligence and Robotics, Real Estate

World Economic Forum

DAVOS 2020 | An Insight, An Idea with Sundar Pichai

22 January 2020

A dialogue with Alphabet chief executive Sundar Pichai on quantum computing, artificial intelligence and the future of technology governance.

World Economic Forum

From medicine to milk, this is Russia's plan to make every good traceable

19 January 2020

6 billion codes are already tracked in Russia's ambitious digital scheme which aims to tackle the shadow economy.

The Atlantic

Why Do People Still Love Consumer Tech?

14 January 2020

At the Consumer Electronics Show, the only solution for technology-induced stress is more technology.

Ecole Polytechnique Fédérale de Lausanne

2020 Youth Olympic Games: a testing ground for new technologies

09 January 2020

09.01.20 - Almost 2,000 athletes aged 18 and under will descend on Lausanne and the surrounding area for the Youth Olympic Games. EPFL, in partnership with the University of Lausanne (UNIL) and Lausanne University Hospital (CHUV), will use this unique opportunity to test a series of technologies developed in the lab before bringing them to the general public. Some 1,880 young athletes aged 15–18 will flock from every corner of the globe to Lausanne and the surrounding area for the 2020 Youth Olympic Games (YOG), which run from 9 to 22 January. They will stay at UNIL's Dorigny campus, in the purpose-built Vortex village which, once the games are over, will become student accommodations. The venues – Lausanne, Les Diablerets, Villars, Champéry and St. Moritz – will host eight sports in total over the two weeks of the games.

Project Syndicate

Make Europe Relevant Again

27 December 2019

The competition between the US and China for technological supremacy has revealed Europe's fundamental weakness in the twenty-first century. A community of nation-states built around a shared project to ensure regional peace and prosperity is now surrendering its economic power and autonomy to foreign firms.

Pew Research Center

U.S. has changed in key ways in the past decade, from tech use to demographics

20 December 2019

Among the changes: Smartphones and social media became the norm, church attendance fell, and same-sex marriage and legalizing marijuana gained support.

Wharton School of the University of Pennsylvania - Knowledge@Wharton

Can We Get Social Media to Work for Society?

06 December 2019

Should Facebook and other tech platforms be regulated? Yes, but innovation and regulation must be creatively balanced so that big tech can work for society at large, writes Ravi Bapna in this opinion piece.

Future Communications Systems

Systems that are self-aware, self-optimizing and self-healing are on the horizon

With the advent of smarter devices and services, demand for wireless data increases exponentially. A key resource in this regard is wireless spectrum, which is scarce. Spectrum scarcity will only be exacerbated by the spread of devices with online connections via the Internet of Things, not to mention future communications systems that will rely on aerial drones, in-car connections and underwater cables. Massive efforts are underway to address this issue. New developments such as cognitive radio, for example, which can automatically channel communication through available spectrum, and so-called small cell networks, which use low-powered radio access nodes to increase capacity and coverage, are meant to ease spectrum scarcity. Indoor coverage can also be provided by Wi-Fi networks, which work on unlicensed spectrum that is unrestricted and not allocated or approved by a regulator. However, these technologies are based on conventional, block structure-based communications systems - which provide stability, but also suffer from inherent limitations when it comes to fulfilling high-capacity requirements such as fast signal processing.

Machine learning, which uses artificial intelligence to help computers gather information on their own without programming, and deep learning, where computers learn algorithms in much the same way a human brain absorbs information, have become increasingly important for the industry. Researchers are actively engaged in extending deep learning capabilities to communications infrastructure; they are generally attracted by the conceptual simplicity of systems that can learn to communicate over any type of channel, without the need for complex mathematical modelling and analysis. According to a white paper published by the World Economic Forum in 2017, a communication network currently servicing 10 million endpoints and 10,000 nodes could see those numbers increase by up to five times by 2020 - which would be impossible for human beings to control and manage without the aid of machine-learning techniques. So-called autonomous cognitive networks, which will be a reality soon, are self-aware, self-optimizing, and self-healing. However, there are related challenges. Although recently proposed deep learning-based algorithms show signs that they can achieve better performance, they lack solid theoretical analysis. While communication channels are now being generated by mathematical models during simulations, actual channel scenarios are far more complex and subject to change.

Related insight areas: Future of Economic Progress, Artificial Intelligence and Robotics, Fourth Industrial Revolution, Public Finance and Social Protection, Automotive, Electronics, Internet of Things, Information Technology

Observer Research Foundation

Digital Binaries: 5G and the New Tech Wars | Raisina Dialogue 2020

21 January 2020

Emerging technologies are fast becoming the principal source of friction in the international system, with a digital cold war seemingly inevitable. 5G communications technologies are perhaps the first victim of this rising tide of techno-nationalism. With 'decoupling' best describing global technology systems, will states be forced to choose between incompatible propositions? How will this implicate development pathways for emerging economies? This panel, at Raisina Dialogue 2020 investigates the geopolitical implications of emerging technologies and offer potential future scenarios for the global digital economy. Moderator: François Godement (Senior Adviser for Asia, Institut Montaigne, France) Panelists: Shiv Sahai (Additional Secretary, National Security Council Secretariat, India) Elina Noor (Associate Professor, Daniel K.

Wharton School of the University of Pennsylvania - Knowledge@Wharton

E-commerce and Consumers: Can Retailers Meet Rising Demands?

15 January 2020

When consumers order online, they want what they want -- and fast. Industry leaders discussed the latest strategies for e-commerce at the Baker Retailing Center CEO Summit in New York City.

Center for Global Development

The Puzzle of Financial Inclusion in Mexico: A Closeable Gap?

14 January 2020

Financial inclusion is a fundamental pillar of development. But Mexico poses a conundrum. In many respects it has been successful at growing its economy and integrating with global markets. Yet among its peers in Latin America, Mexico is the worst-performing at financial inclusion relative to its income; at 36.9%, its rate of inclusion only surpasses three other countries regionally—all with much lower per capita incomes.

GovLab - Living Library

Towards adaptive governance in big data health research: implementing regulatory principles

06 January 2020

While data-enabled health care systems are in their infancy, biomedical research is rapidly adopting the big data paradigm. Digital epidemiology for example, already employs data generated outside the public health care system – that is, data generated without the intent of using them for epidemiological research – to understand and prevent patterns of diseases in populations (Salathé 2018)(Salathé 2018). Precision medicine – pooling together genomic, environmental and lifestyle data – also represents a prominent example of how data integration can drive both fundamental and translational research in important medical domains such as oncology (D. C. Collins et al. 2017).

SpringerOpen

Learning capacity: predicting user decisions for vehicle-to-grid services

26 December 2019

The electric vehicles (EV) market is projected to continue its rapid growth, which will profoundly impact the demand on the electricity network requiring costly network reinforcements.

Pew Research Center

U.S. has changed in key ways in past decade, from tech use to demographics

20 December 2019

Among the changes: Smartphones and social media became the norm, church attendance fell, and same-sex marriage and legalizing marijuana gained support.

SpringerOpen

Development of an engineering design process-based teaching and learning model for scientifically gifted students at the Science Education Institute for the Gifted in South Korea

06 December 2019

This study suggests an engineering design process-based (EDP-based) teaching and learning model in science education and examines its educational potential for scientifically gifted students. This model consis…

Connectivity and Coverage

Seamless connectivity among cellular networks, vehicles, satellites and drones could help erase the digital divide

Electronic communications infrastructure can play a fundamental role in the fourth industrial revolution, by providing connectivity anywhere and anytime with uniform quality regardless of region or socio-economic status. An efficient infrastructure can, for example, address the issue of the digital divide, which separates those able to access computers and the internet and those who must do without. The number of global internet users rose to roughly 3.4 billion by 2016, from about 2 billion in 2010, according to the International Telecommunications Union; still, only about half of the households in the world had internet access as of 2017, according to the ITU. That is despite the fact that over the past 60 years, both wireline and wireless networks have undergone radical evolution. A multitude of technologies have emerged in parallel, helping to connect the world via fibre broadband networks, undersea cables, cellular mobile networks, and satellites. More significantly, advances in chip design and ever-increasing computing power have made mobile devices extremely powerful. There were about 5 billion mobile phone subscribers in the world as of 2017, a figure expected to grow to nearly 5.9 billion by 2025, according to the trade group GSMA. The exponential growth of the cellular mobile market makes wireless connectivity increasingly affordable.

New, Long Term Evolution (LTE)-based networks have eliminated some standards issues, while delivering fast speeds for streaming media, and LTE is expected to be embraced across the world. Meanwhile emerging networks for vehicular communication play a critical role in intelligent transportation systems, and have stringent quality requirements compared with LTE networks; from conception to implementation, care should be taken to ensure that vehicular networks are compatible with LTE networks. In sparsely populated, remote and underdeveloped regions, LTE in its current form may not be economically feasible for cellular operators. Users in these areas are currently served through satellite networks, which are inefficient. For maritime communication, however, these satellite networks are the only option. Unmanned aerial vehicle, or drone, networks could provide a viable alternative; the relatively low cost of their development and deployment make them potentially attractive for operators. One related issue to consider is functionality in the event of natural disasters. While current, state-of-the-art disaster response networks are proprietary and ad hoc in nature, drone-based networks could be deployed quickly and efficiently.

Related insight areas: Supply Chain and Transport, Cities and Urbanization, Information Technology, Aviation, Travel and Tourism, Aerospace, 5G, Digital Economy and Society, Internet of Things, Space

World Economic Forum

How to leverage digital technologies to reshape business and society – and make a difference

19 January 2020

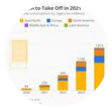
A three-pronged approach to wielding digital technologies to reshape business and society.

Australian Strategic Policy Institute

Can the ‘core’ and ‘edge’ of a 5G network really be separated?

17 January 2020

The Australian government’s decision to ban ‘high-risk vendors’ from its 5G network build caused ripples not just through the Five Eyes community but in major markets where those high-risk vendors already have key customers. One such customer is Germany.



World Economic Forum

5G is about to change the world in ways we can't even imagine yet

10 January 2020

"While 3G put the mobile Internet in your hand and 4G gave us mobile broadband – redefining how we interact with our world – 5G will connect everything and everyone.".

Wired

Cities Struggle to Boost Ridership With ‘Uber for Transit’ Schemes

02 January 2020

Helsinki, Los Angeles, Shanghai, Singapore, and other metros have been experimenting with on-demand buses—and not seeing a lot of success.

The New Humanitarian

Kashmir’s mental health crisis goes untreated as clampdown continues

23 December 2019

One in five people may have PTSD, but there’s a shortage of trained psychiatrists in a region that one doctor calls one of the ‘saddest places in the world’.

NextBillion

The Tech Revolution in Financial Inclusion is Excluding Last-Mile Customers: Here are Four Ways to Reach Them

10 December 2019

The world is experiencing a surge in internet access, but in emerging countries this access is often unreliable. Here are four key ways to deal with this challenge when serving last-mile customers.

Project Syndicate

Don’t Let Tariffs Break the Internet

05 December 2019

One of the main reasons why the digital economy has been able to grow so robustly over the past two decades is that parties to the World Trade Organization have agreed not to impose tariffs on cross-border data flows. But now, in a misguided attempt to recoup lost revenues, some governments want to fix a system that isn't broken.

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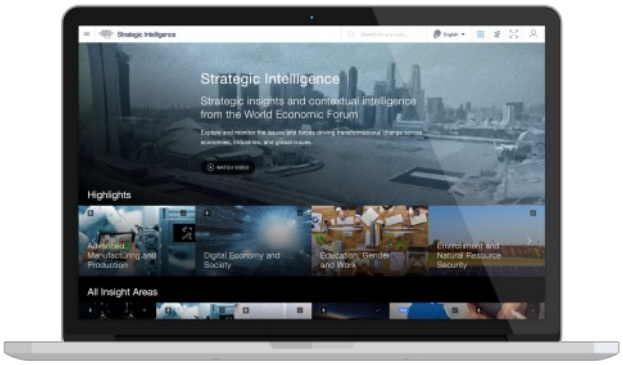

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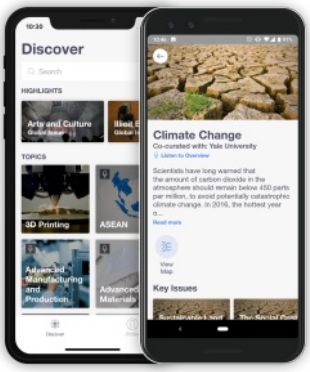

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