Digital Society Index

ZO18 Framing the Future

dentsu AEGIS



Contents

Foreword by Jerry Buhlmann, CEO Dentsu Aegis Network	3
The speed read	5
1. Introduction	8
2. Building a digital economy that works for all	9
3. Understanding digital engagement	15
4. Driving growth through digital engagement	21
5. Final word	29



Foreword

by Jerry Buhlmann CEO Dentsu Aegis Network

Dentsu Aegis Network has the ambition of becoming a 100% digital economy business. We believe that in an uncertain world, the digital economy is one of the few, clear growth opportunities that businesses can rely on.

However, in recent years the debate about the digital economy has changed. While there is clearly huge potential to deliver

economic benefits for both business and society at large, discussion has turned to the risks that accompany this shift. For example, the impact on jobs and skills; on inequality; on personal health and well-being. Across many dimensions, it's clear that there are many unintended consequences of the digital economy that must be addressed.

This is why we've developed the Digital Society Index. In collaboration with Oxford Economics, we've analysed how well a selection of advanced economies are making the transition to the digital economy across three dimensions: dynamism, inclusion and trust. We believe that these dimensions are the key ingredients of a sustainable, healthy digital economy that not only creates rapid growth from its digital sectors, but also enables that growth to be spread widely across society within an environment of trust.

Critically, the analysis also includes the views of 20,000 people around the world so that we can understand how they perceive the transition to a digital economy. However, our results here show that people are less positive about the digital economy than we might have expected. This matters because the digital

Foreword

economy is people-led. People drive innovation through demand for tech-enabled products and experiences. They embrace digital platforms primarily for eCommerce and entertainment, and increasingly to access healthcare, education and government services. And they develop and deploy the skills that fuel digital businesses. As a result, the pace with which we transition to the digital economy will largely be dictated not by technology itself, but by the people who use it.

We need to take action. And our analysis identifies a number of priorities to drive positive engagement with the digital economy: skills training, transparency around data usage and more flexible working processes and structures. But there is also more business can do through traditional marketing and communications channels. First, brands need to build trust through greater openness. Transparency is emerging as a key differentiator as people realise there is a risk that you can trust something that isn't true. Second, use data to drive relevance and increase the positive emotional impact of content, products and services. And third, put purpose at the heart of the brand proposition. Being clear about how you contribute to society can only help build trust as your business becomes more digital.

For business leaders and policymakers, this analysis serves as a reference point for how well countries are realising balanced, sustainable growth from the digital economy. But it also acts as a barometer of peoples' sentiment in relation to that growth journey. It is intended to stimulate debate and action, framing our future in a digital economy that works for all.

The speed read

Building a digital economy that works for all

- In a world of uncertainty, the digital economy is one of the few, clear, growth opportunities for business and society at large. As devices, data and people become more interconnected, the potential to power economic growth and enhance quality of life is huge.
- But, the pace of this growth will not be determined by the rate of technological innovation itself. Instead, it will be driven by the people who use it.
- The difficulty is that not everyone shares a positive view of the digital economy. As concerns grow about the potential risks, from the impact on jobs to concerns over the use of personal data, so the risk of a backlash against technology increases, too.
- Companies and governments need to better assess, understand and respond to people's concerns.

- 2. **Inclusion:** : how economies are gaining access to the digital economy (i.e. the "breadth" of growth across the digital economy)
- 3. **Trust:** how economies give rise to trust in the digital economy (i.e. the enabling environment in which growth can take place).
- The index comprises both a "top down" view of national economy data indicators and a "bottom up" view, based on a survey of 20,000 people around the world, that is focused on the areas of inclusion and trust.
- We studied 10 leading digital economies (Australia, China, France, Germany, Italy, Japan, Russia, Spain, United Kingdom and the United States) and adjusted sample sizes according to population size.

Three countries lead the way in the transition to a digital economy

 In 2018, our index is topped by the United Kingdom, United States and China. All

We need to better measure digital growth

- To better understand how well countries are making the transition to a digital economy and ensuring it benefits society as a whole, Dentsu Aegis has developed the Digital Society Index in collaboration with Oxford Economics. The index identifies three dimensions that we believe are critical to delivering sustainable and inclusive growth:
- 1. **Dynamism:** how economies are driving growth through a flourishing Information and Communications Technology (ICT) sector (i.e. the "speed" of growth in the digital economy)

display different strengths and weaknesses across the three dimensions of the index.

- For example, the United Kingdom is particularly strong in terms of digital inclusion, rating highly on use of ICT in education, access to the internet and widespread use of digital across the economy.
- The United States is a leader when it comes to the dynamism of its digital industries, but performs less well on trust issues relating to privacy, security and broader optimism about the future of the digital economy.
- Conversely, China's relatively poor performance on digital dynamism is buoyed by the trust its citizens have in the future potential of the digital economy.

Confidence in digital varies around the world

- How positively people feel about their future in the digital economy will determine its pace of growth. Our analysis shows that digital engagement is 45% globally in 2018. This is based on how positive people are about digital's ability to create jobs, solve societal challenges and, overall, ensure the positive impacts outweigh the negative.
- Engagement varies significantly by country—and the most mature economies are those with the least engaged people. For example: Japan—32%; Germany—38%; Russia—50%; and China—73%.

Digital engagement is related to inclusion and trust—not dynamism

 Having a strong ICT sector that is powering digital growth in the economy is no guarantor of

Digital engagement is not immune from the gender gap

 Globally, digital engagement stands at 42% for women versus 49% for men. The United Kingdom shows the largest gap, with 36% digital engagement for women versus 45% for men. With diversity a key challenge for digital industries, closing this gap must be a priority for business leaders and policymakers alike.

Workplace utilisation of digital skills, recent training and transparency in personal data use are key

- How can business and governments drive higher levels of digital engagement? Our analysis confirms that there are three key areas that businesses and governments need to address:
- 1. Developing relevant digital skills regularly: embracing technology to deliver rapid upskilling on the job and

engagement. Our analysis shows that this is the least significant of the three dimensions in our model when it comes to achieving digital engagement.

The young are more engaged —but with some exceptions

 Digital engagement also varies by age. Overall, levels of digital engagement are higher among the young than the old. But, there are exceptions. In France, digital engagement among 18- to 24-yearolds stands at 42% versus 47% of 45to 54-year-olds, and a similar pattern is seen in Japan. over an employee's lifetime. Regular
training is essential—engagement
in digital declines in line with
the length of time since relevant
education took place.

2.Increasing transparency in the use of personal data: finding new ways to engage and empower people in the use of their data. People are more aware than ever of how businesses and governments use their data businesses need to get on the front foot to build trust and drive engagement. 3. Developing workplaces that enable employees to utilise their digital skills: adopting flexible, agile working practices that enable latent digital skills to be fully used. Our research shows that most people feel that their employers do not fully utilise the digital skills that they have re-engineering work and business processes are essential to harnessing this latent talent.

Brands can drive positive

building digital engagement, brand names should also aim to increase positive sentiment towards the digital economy and digital media by focusing on three approaches: building trust through greater openness, being clearer about brand purpose, and increasing the emotional impact of digital products and services.

In this first report of **Digital Society Index** findings, we identify the changing nature of digital engagement and identify the priority areas for action to secure the digital economy of the future.



1. Introduction

The digital economy (i.e. economic activity conducted via or using digital technologies) is not just about digitising existing processes and business models. It is a fundamental revolution of the traditional economic model. Information asymmetries have been eroded, thanks largely to social media; the falling cost of technologies, coupled with trade liberalisation, has made it easier to enter new markets; consumers can now also be producers, while platforms are increasingly the dominant organisational unit of business. The impetus is shifting from the supply-to the demand-side of the economy, where all organisations must pivot around consumers faster than the competition.

Country performance varies across digital dynamism, inclusion and trust

However, while the digital economy is unlocking new sources of economic growth, there are also concerns about how broadly these benefits will be shared. And the risk of backlash against technology has emerged. To assess how well economies are making the transition to the digital economy, Dentsu Aegis has developed the Digital Society Index, which assesses the performance of 10 economies across three key dimensions: dynamism, inclusion and trust. Why these three? Because growth in the digital economy does not rely only on core industrial strength (dynamism)—it requires the ability of people across society to access the benefits that it affords (inclusion) and to do so within an environment of privacy and security (trust). As the analysis which follows shows, country performance varies across these three dimensions (see "Building a digital economy that works for all", page 9).

of the 20,000 people we surveyed met our benchmark for digital engagement, meaning they believe that digital technology will create jobs, solve societal problems and that its positive impact will outweigh the negative. While the young are generally more positive than the old, there are some exceptions to this rule and globally, levels of digital engagement are lower among women than men. This is problematic, because the pace of growth in the digital economy will not be determined by technological innovation; it will be

Despite the opportunities, people are worried about their digital future

But, people are concerned about their place within the digital economy (see "Understanding digital engagement", page 15). Despite the huge benefits and growth opportunities that it affords, less than half determined by the people who use it.

More action, better words

How can we drive more positive engagement with the digital economy? The analysis in "Driving growth through digital engagement" on page 21, shows that there are a number of levers that businesses and policymakers can use. For example, regular digital training, increased transparency around personal data use, and more flexible workplace practices are all key drivers of digital engagement. But, as well as taking practical action to address these issues, businesses and policymakers also need to improve how they communicate the value of the digital economy. And, they must do so not through projections of economic growth, but in real, tangible terms that connect to the hearts and minds of people.

2. Building a digital economy that works for all

Against a backdrop of debate about how the digital economy can benefit all of society, the Digital Society Index offers a snapshot of how well 10 economies, both developed and emerging, are making the transition to digital. By combining national economy data and the views, attitudes and beliefs of 20,000 people around the world, the index offers a comprehensive picture of performance across the key dimensions of dynamism, inclusion and trust (see "About the research" on page 30 for more information about our approach). Here, we look at the highlights and commentary on selected economies over the course of 2018, we will publish deeper dives into each of the markets covered by the analysis.

The 2018 index is topped by the United Kingdom, United States and China

In 2018, we find that the top three economies leading our index are the United Kingdom, United States and China (see Figures 1 and 2). And analysing the drivers of these rankings reveals a number of truths about growth in the digital economy today.

Overall	Dynamism	Inclusion	Trust	
1. United Kingdom	1. United States 🛛 들	1. United Kingdom	1. China	
2. United States	2. United Kingdom	2. China	2. Germany	
3. China	3. Germany	3. United States	3. United Kingdom	
4. Germany	4. France	4= Australia	4. Australia	
5. France	5. Australia	4= France	5. France	
6. Australia	6. Japan	6. Germany	6. United States 🛛 📒	
7. Spain	7. Spain	7. Russia	7. Spain	
8. Italy	8. China	8. Spain	8. Italy	
9. Japan	9. Italy	9. Italy	9. Russia	
10. Russia	10. Russia	10. Japan	10. Japan	

Figure 1. Digital Society Index 2018—key rankings

Source: Dentsu Aegis Digital Society Index 2018

Figure 2. Country performance varies across each dimension of the Index

Aggregate performance by country across each dimension of the index



Source: Dentsu Aegis Digital Society Index 2018

United Kingdom

The United Kingdom owes its ranking to relatively strong performance across all three dimensions of the index and, in particular, digital inclusion—or the ability to provide relevant training opportunities, have access to the internet and deliver widespread use of digital technology across the economy. For example, at 5.6%, the United Kingdom spends more on education as a share of gross domestic product (GDP) than any other country in our sample.ⁱIt also ranks highest on the United Nations' e-participation index, which assesses how well governments use online services to share information, interact with stakeholders and engage people in decision making.

Spotlight on

Creating A National Digital Strategy for the UK

The challenge: Developing a comprehensive, national roadmap for the digital economy.

The solution: In 2017, the UK government published a national digital strategy that sets out a comprehensive approach to ensuring the digital economy works for everyone in society, encompassing areas like infrastructure, skills, cybersecurity and business transformation, among others.[#] It involves significant public-private cooperation, particularly in the area of skills. For example, Lloyds Banking Group plan to give face-to-face digital skills training to 2.5 million individuals, charities and small- to medium-sized enterprises by 2020; Barclays plan to teach basic coding to 45,000 more children and assist up to one million people with general digital skills and cyber awareness; and Google, as part of their commitment of five hours of free digital skills for everyone, pledge to help boost digital skills in seaside towns in the United Kingdom.



United States

Turning to the United States, it is the strongest performer in our sample of countries in terms of digital dynamism. For example, it is home to 41 out of the top 200 global universities for engineering and technology, which underpins world-leading research and development in computer science and related fields.ⁱⁱⁱ Its ICT sector has been one of the fastest growing in the world over the last decade and it is home to the industrial giants of the digital economy, such as Google, Facebook and Amazon. But, overall its performance is hampered by a relatively low score on trust, reflecting concerns that people in the US have about the impact of digital technology on jobs as well as the use of their personal data, which recent data breaches may have compounded. In 2017, for example, credit rating company Equifax revealed that as many as 145.5 million of its US customers may have been affected by a cybersecurity breach.^{iv} Breaches such as this can undermine the trust that people have in the security of their data. Reflecting this, only one-third of US consumers trust businesses to protect their privacy, according to a recent Dentsu Aegis survey on attitudes to sharing personal data.

China

China lags most economies in terms of the growth that it is realising from its digital industries—relative to growth in the economy overall. For example, in 2016 the gross value added of the high-tech and ICT services sectors in China was 3.4% of GDP, versus 6.6% for the US.^v Whilst the size of those sectors has grown rapidly in China since 2006, its share of China's GDP has remained the same. By comparison, in Germany, the high-tech and ICT sectors have increased their share of the overall economy by one third.^{vi} But, it is the optimism of people in China that propels it towards the top of the rankings. Partly, this reflects how rapidly China is embracing the digital economy to drive its economic development and leapfrog into new technologies. For example, mobile payment platforms, such as WeChat Pay and Alipay, have taken the country by storm, making cash almost obsolete in some places. In 2016, mobile payments in China accounted for around US\$5 trillion in volume.^{vii} It also reflects the fact that our sample represents a young, online population that is, perhaps, more likely to have a positive view of the digital economy.

Japan

Perhaps the most surprising result is the position of Japan. In terms of digital

dynamism, it is a relatively strong performer. For example, it has sound fundamentals that make it well disposed towards innovation, with the highest expenditure in research and development (R&D) as a share of GDP out of our sample countries in 2013 (the most recent year for which internationally comparable data was available).^{viii} Also, it has mature, high-tech and ICT services sectors that account for 5.4% in gross value added (as a proportion of GDP).^{ix} However, when analysing the views of the people we surveyed in Japan, it would appear that on most measures of engagement with the digital economy they are more pessimistic than the rest of the sample. This has the impact of pushing them further down our rankings.

Digital dynamism delivers faster economic growth

Our analysis supports the body of evidence which points to the importance of the digital economy as a driver of growth. With the exclusion of China (which has experienced very high GDP growth rates over the last decade), the three countries that score highest on our measure of digital dynamism have an average GDP growth rate of 2% in the last five years—one percentage point higher than countries that score lowest on digital dynamism.

But digital dynamism alone does not guarantee an engaged population

Having a strong ICT sector that is powering growth and productivity in the economy is not a guarantor of how positively people feel about the digital economy. Our analysis shows that, in fact, this is the least significant of the three dimensions in our model (dynamism, inclusion and trust) in terms of positive sentiment. For business leaders and policymakers alike, this finding underlines the importance of taking active steps to create a digital economy that works for all. Traditional economic gains from digital are not enough if they do not deliver benefits beyond the ICT industry itself—spreading that prosperity within a context of trust is essential to drive positive engagement with the digital economy.

And people in countries where the digital sector is growing slower think the pace of technological change is too fast

In the three countries with the fastest growing ICT sectors (Germany, Spain and the United States), only 52% of people think that the pace of technological change is too fast. However, in the three countries with the slowest ICT sector growth (Australia, China and Japan), 66% of people believe the pace of technological change is too fast. Clearly, perceptions of the rate of progress are informed by a wide range of factors, particularly in terms of how prepared people feel (e.g. in terms of skills and education) for a digital future.

A balanced approach to digital growth

As with any index, these findings represent a partial view on performance, based on the availability and robustness of data. But, overall, they point to the need for a more nuanced understanding of what we mean by growth in the digital economy. Focusing purely on growth within the core industrial sectors that traditionally constitute the digital economy presents a narrow view of progress. If people's ability to benefit from that growth is not improved and if positive sentiment towards the digital economy remains low, the overall gains to society from the digital economy will be limited—and a backlash against technology will be even more likely. It is in the interests of all stakeholders businesses, governments, non-governmental organisations (NGOs), and individuals—to ensure this does not happen.

3.Understanding digital engagement

Countries are making the transition to a digital economy rapidly across the three key dimensions of dynamism, inclusion and trust. But, the continued pace of this transition relies not only on technological infrastructure; it relies on the people who will use that technology. How engaged people are in the digital economy—how optimistic they are that it will benefit their own lives as well as society more broadly is a critical component of the successful transition to a digital economy.

Digital engagement measures how optimistic people are that the digital economy will benefit themselves and society.

We call this "digital engagement." It is important because it drives demand and

be positive overall, as well as in terms of its ability to create jobs and address societal challenges.

This definition is crucial to understanding what is driving the headline score. While people are generally confident that the positive impacts of digital technology will outweigh the negative over the next five to 10 years (65%), when it comes to the more specific measures of its ability to create future jobs (29%) and to address societal challenges such as poverty, health risks, or environmental degradation (42%), people are more pessimistic.

The most advanced digital economies are those with the least engaged people

Overall, more mature economies appear to be suffering from lower levels of

the adoption of new digital products and services, it encourages the development of new skills that power digital businesses, and it helps to provide access to personal data that drives the customisation of products and services, while also unlocking new insights that can help address societal challenges. As such, business leaders and policymakers alike have a vested interest in fostering high levels of digital engagement.

Digital engagement is 45% globally

In this, the first year of the Digital Society Index, we find that digital engagement stands at 45%. We define this score as the proportion of people believing that the future impact of digital technology will

digital engagement (see Figure 3). For example, China and Russia have the highest levels of engagement at 73% and 50% respectively, while Germany (38%) and Japan (32%) have the lowest. In particular, China's score appears to reflect the high levels of optimism in the ability of digital technology to improve life chances and drive economic development. But, that is not to say that people in China do not have reservations about digital technology: 38% feel that digital technology has a negative impact on their personal well-being, the highest response out of the countries surveyed (see sidebar "Spotlight on: Taking a break from digital").

15

Figure 3: Digital engagement by country

Average % of people agreeing that digital technology (1) will create future jobs (2) will help address societal challenges and (3) overall, will ensure that its positive impact outweighs the negative

Spotlight on

Taking a break from digital

The challenge: Managing our increasing dependence on personal technology.

The solution: Several economies around the world are taking steps to tackle the increasing prevalence of digital addiction—over-dependence on personal technology, in particular smartphones. China, for example, has in recent years established 300 "digital addiction camps" to help address a problem that is estimated to affect 24 million young people.[×] And, in the United Kingdom, the Nightingale Psychiatric Hospital in London is the first UK centre to offer a dedicated internet addiction outpatient programme.

People are generally pessimistic about the digital economy's ability to create jobs

In countries such as Germany and the United Kingdom, the outlook on future employment is particularly pessimistic—just 18% of the population (see Figure 4) believe that emerging digital technologies such as artificial intelligence and robotics will create job opportunities over the next five to 10 years. Given the historically low levels of unemployment in both of those countries, this finding suggests a pervasive fear exists that tech-enabled change will destabilise jobs. Such pessimism probably reflects the prevailing narrative and scare stories that often accompany discussions of digital's impact on jobs, as well as concerns about the ability to keep up with quickly changing skill demands. By comparison, China is an outlier with 65% of people in that country believing that these technologies will create more opportunities for future employment (see sidebar "Spotlight on: Robotics and the Chinese economy").

Figure 4. People are generally pessimistic about future job prospects in the digital economy

% people agreeing that emerging digital technologies (e.g. artificial intelligence, robotics) will create job opportunities over the next five to 10 years

Robotics and the Chinese economy

The challenge: Moving up the economic value chain.

The solution: Becoming a world leader in the use of robotics is a priority for China and a key element of its industrial strategy. The country is now installing more robots than any other nation. In 2016, it installed around 90,000 units, accounting for one-third of the global total, and this will nearly double to 160,000 units by 2019.^{xi} As China seeks to move further up the economic value chain through such investments, people there are clearly optimistic about the potential for this to lead to employment growth, despite the automation of manufacturing tasks and jobs.

Spotlight on

People are sceptical about on the ability of digital technology to solve societal challenges

Much has been made of the potential for digital technology to solve future global challenges, ranging from climate change to poverty eradication. But do people share this optimism? Overall it would appear that they are sceptical. Globally, 42% of our sample believe that digital technology will help solve the world's most pressing challenges—and this varies by country (see Figure 5). For example, 71% of people in China see digital technology helping to solve these problems, but only 22% of people in Japan share this view.

These findings suggest that there is more work to be done to communicate more effectively the role that digital can play in addressing societal challenges. For example, the Global e-Sustainability Initiative finds that digital solutions are indispensable to achieving all 17 of the United Nations' Sustainable Development Goals, which cover issues such as poverty, hunger, health and well-being, economic growth and climate action.^{xii}

Figure 5. Belief in digital technology's ability to help address societal challenges is generally low

% agreeing that digital technology will help solve the world's most pressing challenges (e.g. poverty, health issues, environmental degradation)

Source: Dentsu Aegis Digital Society Index 2018

Spotlight on

Digital in the dock

Global % of respondents unless stated otherwise

- 57%
- believe the pace of technological change is too fast. This view is most commonly held in China (76%) and Japan (72%).
- **43%** agree that technology has made society more unequal.
- feel not enough is being done to ensure that digital technology 55% benefits everyone.

The young are more engaged—but with some exceptions

Digital natives generally believe strongly in the ability of digital technology to drive growth and prosperity for individuals as well as wider society. But, our analysis suggests that this is not always the case. For example, in Japan digital engagement among 18-24-year-olds stands at just 30% with a marginally higher score (32%) for people aged 55 years and over. And in France, a wider gap emerges with 42% digital engagement among 18- to 24-year-olds versus 47% for 45- to 54-year-olds. This potential fracture should concern business leaders and policymakers alike—both as a possible indicator of disenfranchisement with the digital economy, but also more broadly as a scapegoat for wider concerns about life chances and job opportunities.

Digital engagement is not immune from the gender gap

Globally, women are less optimistic about the future of digital technology than men. Digital engagement is 42% for women versus 49% for men. And in the United Kingdom the gap is largest—36% versus 45%. Set against a backdrop of a poor diversity in the digital industries and among science, technology, engineering and mathematics graduates, this finding emphasises the need for rapid action to ensure that the digital economy is a driver of employment and prosperity for men and women alike.

Spotlight on

Girls Who Code

The challenge: Closing the gender gap in technology.

The solution: Fewer than one in five computer science graduates are women. Girls Who Code has made closing this gap its specific mission. It is a US-based initiative that teaches girls about different topics related to computer science, such as website or app development. It offers girls at high school, middle school and college a variety of teaching programmes, from after-school clubs to more immersive summer sources. It is now 40,000 girls strong with 80 summer immersion programmes and more than 1,500 after-school clubs across the United States.^{xiii}

On a number of different measures, people around the world are less optimistic about the digital economy than we might have expected. In some countries, this pessimism is particularly acute. Left unaddressed, the risk of a backlash against technology is liable to increase, ultimately reducing the ability of the digital economy to drive growth and prosperity across society. Action is needed now to reclaim a positive narrative in relation to the digital economy and help people embrace the future with confidence.

Driving growth through digital engagement

Across several dimensions, digital engagement—how positively people feel about the future of the digital economy—is a cause for concern. What can businesses and governments do to increase digital engagement? Practical action is needed to put in place programmes and approaches that address the drivers of digital engagement. But businesses should also look at how they can leverage their brands and traditional marketing and communication channels to improve positive engagement with the digital economy.

Addressing the drivers of digital engagement

Our analysis confirms that there are three key areas that are highly correlated with positive digital engagement: workplaces that fully leverage the digital capabilities of its employees, skills development and education, and the use of personal data. The full list of the top drivers of digital engagement is shown in Figure 6.

Source: Dentsu Aegis Digital Society Index 2018

Ensuring regular digital skills development

With the exception of Chinese people, the people we surveyed generally do not believe that formal education has given them the technology knowledge they need today (see Figure 7), reflecting the pace of change in the labour market and the speed with which skills erode. This has a significant impact on their levels of positive engagement with the digital economy. In the countries that our analysis shows to be the strongest for delivering digital training, 75% of people surveyed have a positive outlook on the future of technology. By contrast, only 56% of people in the bottom-performing countries for digital training have a positive outlook on the future of technology.

Figure 7. People do not believe that formal education has kept pace with digital demands

% of people who agree that their formal education (e.g. school, college, university) has given them the technology knowledge that they need

The regularity of digital skills training is also important. Of those people who received training within the last three months, 75% were positive about the future outlook of technology—but this falls to 50% for those who received training within the last five years. Skills can erode rapidly, so moving away from formal

education interventions that end after university towards more tech-enabled, rapid training modules would appear to be critical for maintaining engagement.

Spotlight on

Online learning with Skillshare

The challenge: Accessing high-quality, low-cost learning opportunities.

The solution: Skillshare is an online learning community of around two million students and teachers devoted to developing skills in design, business, technology and creativity. Students can access around 18,000 classes for US\$10 a month, taught by expert practitioners around the world in project-based classes. The combination of short lessons and hands-on projects makes learning quicker and more convenient around the needs of the individual, while the community dimension to the platform helps to keep students motivated and inspired.^{xiv}

Spotlight on

Digital upskilling at General Electric

The challenge: Keeping digital skills up-to-date.

The solution: On-the-job training is also a critical way of keeping digital skills fresh and up-to-date. At General Electric, workers at a renewable energy factory wear smart glasses that enable them to view digitized instructions and training manuals in real time, as well as potentially using voice commands to contact experts for immediate help. Early analysis shows a 34% increase in productivity versus the standard "offline" way of accessing training manuals, underlining the business benefits that can accrue from rapid and effective skills development.^{xv}

Increasing trust in the use of personal data

Of the three core dimensions in our index, having a high degree of trust in the system is the most positively correlated with having a positive outlook on the future of technology. Out of those who are very trusting of businesses or government agencies to protect the privacy of their data or keep it secure, on average more than 85% have a positive outlook on the future of technology. But, around a quarter of those who are the least trusting of governmental agencies and businesses to protect the privacy and security of their data are negative about the future of technology. This is more than five times the level of those who are the most trusting.

Figure 8 shows how people do not believe that businesses are transparent in their use of personal data (the same trend broadly holds for government use of personal data). The use of personal data has become one of the most contentious issues related to the development of new digital economy business models. And, overall levels of awareness and education are relatively low. For example, a recent Dentsu Aegis survey of US consumers found that while more than 60% are aware that free online services are collecting their data for advertising purposes, only 10% say they would willingly share their demographic information for access to free online services.

Spotlight on

Data dashboards by Google and Microsoft

The challenge: Increasing consumer understanding and control of personal data use.

The solution: A number of technology companies have been developing new ways to increase the visibility of how their data is being used in clear and intuitive ways. For example, both Microsoft and Google have developed simple dashboards that enable people to look at what data they are sharing and for what purposes. Users can update their profile to reflect their personal attitudes to privacy, giving them control over how their personal data is used.

Figure 8: People do not believe businesses are transparent in their use of personal data

% of people who believe that businesses are transparent in the use of their personal data

										19%	17%	
											- /	
	СНІМА	ΙΤΑLΥ	RUSSIA	GLOBAL	GERMANY	AUSTRALIA	SPAIN	S D	X D	FRANCE	JAPAN	
Ċ	Source: Dentsu Aegis Digital Society Index 2018											

- 4 DRIVING GROWTH THROUGH DIGITAL ENGAGEMENT

Developing workplaces that enable employees to utilise their digital skills

Only about one-third of people globally with average or above average digital skills believe that their employer makes it possible for them to use those skills (see Figure 9). The prevailing wisdom is that people are unable to keep pace with the digital skills demands of business—however, this finding suggests that in fact businesses are failing to adapt quickly enough to utilise the capabilities of their employees and ensure they are fully engaged. The impact on digital engagement is highly detrimental: engagement levels are much higher when people can use their digital skills fully in the workplace. Addressing this challenge requires businesses to take a more agile approach to having work processes and organisational design that supports the utilisation of digital skills in all its forms.

Figure 9: Businesses are not fully utilising the digital skills of their employees

% of people with average and above level of digital skills who agree that their employers make it possible for them to use their skills

Creating the space for innovation at work

The challenge: Harnessing employee's capacity for innovation.

The solution: Google's famous 80/20 rule enables employees to be innovative and experimental at work, applying their digital skills and knowledge to an array of projects outside their day-to-day roles. The Innovation Time Off (ITO) programme encourages employees to spend about 80% of their time on core projects and 20% on company-related innovation activities that interest them personally. As well as aiding learning and engagement, the programme is reported to have originated almost one-half of Google's new product launches, including Gmail, Google News and AdSense.

Spotlight on

Clearly, addressing each of these issues is critical in its own right—quite apart from their impact on digital engagement. Without the right skills, the digital economy cannot function properly. In the absence of trust in how data is being used, the costs and potential applications of that data will be limited. But avoiding a technology backlash that would reduce overall benefits to society and building positive digital engagement starts with identifying those channels through which people engage with the digital economy.

Implications for brands

There is much more that businesses need to do—in collaboration with government and NGOs—to help people prepare for the digital economy, drive digital engagement and avoid a backlash against technology. But what about the traditional marketing and communication channels that businesses use to engage their consumers and build their brands—how can these be used more effectively to drive positive engagement and sentiment towards the digital economy and digital media?

Build trust through openness

People are hit with huge volumes of marketing messages and information on a daily basis. But not all of it is true or unbiased. Concerns over fake news and the potential "echo chamber" effect of social media have taken hold in recent years, undermining the confidence that people have in the digital media channels through which organisations communicate with them. As people come to realise that it is possible to trust something that is not true, brands instead are turning to transparency as a means of building trust and positive consumer engagement. For example, outdoor equipment company Patagonia has opened up its supply chain to external scrutiny, embracing openness as a way of reducing any adverse social and environmental impacts and ensuring a single, undisputed voice of the truth.

Increase the emotional impact of digital products, services and content

As well as being more open, brands should aim to increase the emotional appeal of the truth. One of the reasons that fake news has become so popular is arguably that it is entertaining, even if outrageous. The challenge for brands is to make the truth equally compelling. Beyond that, there is also an opportunity for brands to increase the emotional impact of their content. Increasingly, with competition based on the battle for experiences, the ability to create emotional responses can not only help brands develop better consumer relationships, but also create more positive sentiment towards digital media.

Be clearer about brand purpose

For some time, brands have been articulating their purpose—the role that they perform in society—as a way of differentiating themselves and engaging consumers. The transition to a digital economy and the risks that this presents brings clarity of purpose into even sharper focus. For example, a number of tech-enabled gig economy businesses have suffered reputational damage due to concerns over working practices and employee protection. As digital economy businesses disrupt traditional sectors, having a strong story to tell about the value to consumers and to society will be critical.

5. Final word

While the transition to a digital economy is a certainty, the path by which society gets there remains a source of contention. Our analysis reveals some of the different economic strengths and weaknesses that countries display, highlighting potential sources of digital comparative advantage as well as areas for development.

However, any analysis of digital must start with people. Current levels of digital engagement reflect the real concerns and worries that people have about their place within this future. Businesses and governments have been at the vanguard of driving the transition to a digital economy—through job creation, skills development, cutting-edge innovation and enabling regulatory frameworks, for example. But people need to be heard louder than before if we are to build a digital economy that harnesses the rich diversity of talents and attitudes that exist across our societies.

Dentsu Aegis is committed to refining and updating our understanding of the digital opportunity. As the Digital Society Index

continues to monitor how engagement in the digital economy changes, we will identify the priority areas for action to give people the ability and the confidence to embrace the digital economy with optimism.

Ultimately, engaging people in the digital economy comes down to doing and saying. "Doing" in the sense of practical strategies and steps that help people succeed in the digital economy, from securing access to infrastructure to supporting the right skills training at the right time. And "saying" in the sense that businesses and governments alike need to get better at communicating the value of the digital economy—not just in high-level projections of intangible economic power, but in tangible benefits that connect to individuals' hearts and minds.

- About the research

Context

Dentsu Aegis Network aims to become a 100% digital economy business. We believe that, in an uncertain world, the digital economy is one of the few growth opportunities for brands.

People are central to an effective digital economy. They drive innovation through a growing demand for tech-enabled products and experiences. They embrace digital platforms to access healthcare, identity and government services. And, they develop and deploy the skills that will help determine how quickly we make the transition to a digital economy.

But, traditional approaches to measuring and understanding progress towards the digital economy tend to overlook people—their views, attitudes and aspirations—favouring instead a purely economic lens.

At a time when there is growing concern about the risks associated with the digital economy and a potential backlash against technology, this represents a significant gap.

Our approach

In collaboration with Oxford Economics, Dentsu Aegis has developed an index of people engagement in the digital economy. It seeks to answer three key questions:

- 1. How well are countries making the transition to a digital economy?
- 2. How engaged are people in that transition?
- 3. What drives engagement in the digital economy?

We worked with Oxford Economics over the course of 2017 to develop a model and gather primary and secondary data across three key dimensions of the digital economy:

- 1. **Dynamism:** the extent to which economies are driving growth through a dynamic Information and Communications Technology (ICT) sector (i.e. in terms of gross value added).
- 2. **Inclusion:** how well economies are sharing prosperity by gaining access to the digital economy (i.e. in terms of access to infrastructure, digital skills and jobs).
- 3. **Trust:** the extent to which the right enablers are in place to drive growth (i.e. in terms of appropriate privacy and security regimes, as well as the broader belief in the future of the digital economy).

This model captures the speed of growth (dynamism), the breadth of growth (inclusion) and the enabling environment that supports growth (trust).

Data collection and analysis

Fieldwork was conducted over the summer of 2017 using proprietary Dentsu Aegis survey capabilities. We surveyed 20,000 people across 10 economies: Australia, China, France, Germany, Italy, Japan, Russia, Spain, United Kingdom and the United States. Sample sizes were adjusted according to population size to ensure they were representative.

Secondary data has been sourced for the most recent year available and from the most credible data providers to ensure robustness and international comparability. In constructing the index, equal weightings have been applied across all indicators. A detailed overview of the index structure, data indicators and sources is included on the following page.

-Index Structure -

	Dimension	ion Indicator Detailed title		Source	Year
lism_		Size of ICT sector	Value added by ICT hardware and services sector	Oxford Economics	2016
	Strong ICT sector	Growth of ICT sector	GVA Growth of ICT hardware and services sector between 2006-2016 period	Oxford Economics	2006-2016
		Spend on R&D	R&D Expenditure as a share of GDP	World Bank	2013
		Quality of technology universities	Number of world-class STEM universities	QS Ranking	2017
ami	Elite cadre of digital	Pool of STEM graduates	STEM graduates as percentage of working population	OECD/China national Stats	2014
N	Focus on frontier technologies	Incidence of ICT specialists	Prominence of ICT-related job listings in overall job listings (last 12 months)	Google Trends	2017
		Commitment to Open Data	Open Data Barometer score	Open data barometer	2015
		Quality of ICT regulation	Quality of laws relating to ICT	WEF - Network Readiness Index	2016
		Academic endeavours in computer science	Academic output being published in top Computer Science journals (last 12 months)	Google Scholar	2017
	Widespread digitalization	Digital spend outside ICT sector	Consumption of digital assets and services by non-ICT sectors as a share of GVA	World Input-Output Database	2014
		Accumulation of ICT assets	Share of ICT capital compensation in GDP	Total Economy Database	2016
		Balanced and healthy use of	Share of people who feel their personal use of technology has a net positive impact on	Dentsu Aegis Digital Society Survey	2017
		Thriving online market place	Online advertising expenditure as share of total advertising spend	Dentsu Aegis Ad Spend forecasts	2016
		Use of ICT in education	Quality of teacher training in ICT to produce an educational outcome	The Web Index	2014
		General quality of education	Government expenditure on education as a share of GDP	World Bank	2013
		Frequency of digital skills training	Share of people who have received training within the last three months	Dentsu Aegis Digital Society Survey	2017
	Opportunities for	General digital skill level	Share of people with average and above average levels of digital skills	Dentsu Aegis Digital Society Survey	2017
	digitat work	Effective use of digital skills	Share of people with ICT skills who make effective use of them in their job	Dentsu Aegis Digital Society Survey	2017
		Relevance of digital education	Share of people whose education has provided the digital skills required for digital jobs	Dentsu Aegis Digital Society Survey	2017
		Impact of ICT on women and girls	Impact of ICT on the ability of women and girls to claim and demand their rights	The Web Index	2014
		Fixed internet coverage	Fixed Broadband Subscription per 100 people	World Bank	2015
2		Mobile internet coverage	Mobile Broadband Subscription per 100 people	World Bank	2015
usio		Internet speeds	Share of internet connections above 15 Mbps	Akami	2017
Inclu		E-Participation Index	E-Participation Index score	United Nations	2016
		Devices owned per person	Number of connected devices per person	Google Barometer	2017
		Internet Affordability	Ratio of Fixed-line monthly broadband cost to GDP per capita	ITU/OE	2014
		Policies to promote free and low cost internet access	Availability of policies that promote free and low cost internet access	The Web Index	2014
			Share of people with good and excellent fixed internet speed	Dentsu Aegis Digital Society Survey	2017
	Access to digital services	Satisfaction with internet speed	Share of people with good and excellent mobile internet speed	Dentsu Aegis Digital Society Survey	2017
			Share of people with good and excellent fixed internet coverage	Dentsu Aegis Digital Society Survey	2017
		Satisfaction with internet coverage	Share of people with good and excellent mobile internet coverage	Dentsu Aegis Digital Society Survey	2017
		Satisfaction with the internet	Share of people who think that fixed internet affordability is good and excellent	Dentsu Aegis Digital Society Survey	2017
		affordability	Share of people who think that mobile internet affordability is good and excellent	Dentsu Aegis Digital Society Survey	2017
			Absolute distance from equality (equality being a ratio of 1 between internet usage by millennial to older cohort)	Dentsu Aegis Consumer Connection	2016
		Equality of internet access	Absolute distance from equality (equality being a ratio of 1 between internet usage by	Dentsu Aegis Consumer Connection	2016
		(including by age, gender)	men to women)	System Survey	2016
		Secure internet servers	Number of secure Internet Servers per 1 million people	World Bank	2010
		Cybersecurity readiness	Global Cyber security Index Score		2017
	Security	Effective legal protection from	Effective legal protection from cybercrime	The Web Index	2014
		cybercrime Trust in businesses keeping customers'	Share of people who believe they can trust businesses to keep their personal data secure	Dentsu Aeais Diaital Society Survey	2017
		data secure Trust in government keeping citizens'	Share of people who believe they can trust governments to keep their personal data	Dentsu Aeais Diaital Society Survey	2017
-		Data protection readiness of	Global data protection index (Survey of IT officials) - Extent to which firms have the	EMC2 Dell	2016
	Privacy	businesses Personal data protection laws	A A A A A A A A A A A A A A A A A A A	The Web Index	2014
		Trust in businesses' ability to protect	Share of poople who trust huginesses to protect the privacy of their personal data	Doptsu Apgis Digital Society Survey	2017
Trust —		privacy of customers Trust in government's ability to protect	Share of people who trust government agencies to protect the privacy of their personal		
		privacy of citizens	data Chara of neonlow he halious that businesses are transportent in the use of their nervenal	Dentsu Aegis Digital Society Survey	2017
		data by businesses	data Share of people who believe that governments are transparent in the use of their	Dentsu Aegis Digital Society Survey	2017
		data by government	personal data	Dentsu Aegis Digital Society Survey	2017
		Future expectations for ICT sector	Price to Earnings ratios for technology stocks	Bloomberg	2017
		Forecasted ICT spend	Forecasted spend on ICT goods and services in 2027	Oxford Economics	2027
		Innovation index	Index score relating to innovation capabilities	INSEAD, WIPO, Cornell	2017
	Future outlook	Sentiment regarding net impact of technology on society	Share of people believing that the positive impact of technology will outweigh the negative impact over next 5-10 years	Dentsu Aegis Digital Society Survey	2017
		potential to create future opportunities	Share of people who agree that emerging digital technologies will create job opportunities over the next 5-10 years	Dentsu Aegis Digital Society Survey	2017
		Sentiment regarding technology's potential to solve problems	Share of people who agree that technology will help solve the world's most pressing problems	Dentsu Aegis Digital Society Survey	2017

References

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Interested in this topic?

The 2018 Digital Society Index is the first of a series of in-depth research efforts into the impact of the digital economy. We welcome input from anyone who shares our ambition to deliver a digital economy that works for everyone in society.

Key contacts

To learn more about this research, please contact tim.cooper@dentsuaegis.com.

About Dentsu Aegis Network

Part of Dentsu Inc., Dentsu Aegis Network is made up of ten global network brands—Carat, Dentsu, dentsu X, iProspect, Isobar, mcgarrybowen, Merkle, MKTG, Posterscope and Vizeum and supported by its specialist/multi-market brands. Dentsu Aegis Network is Innovating the Way Brands Are Built for its clients through its bestin-class expertise and capabilities in media, digital and creative communications services. Offering a distinctive and innovative range of products and services, Dentsu Aegis Network is headquartered in London and operates in 145 countries worldwide with more than 40,000 dedicated specialists. www.dentsuaegisnetwork.com

Thank you.