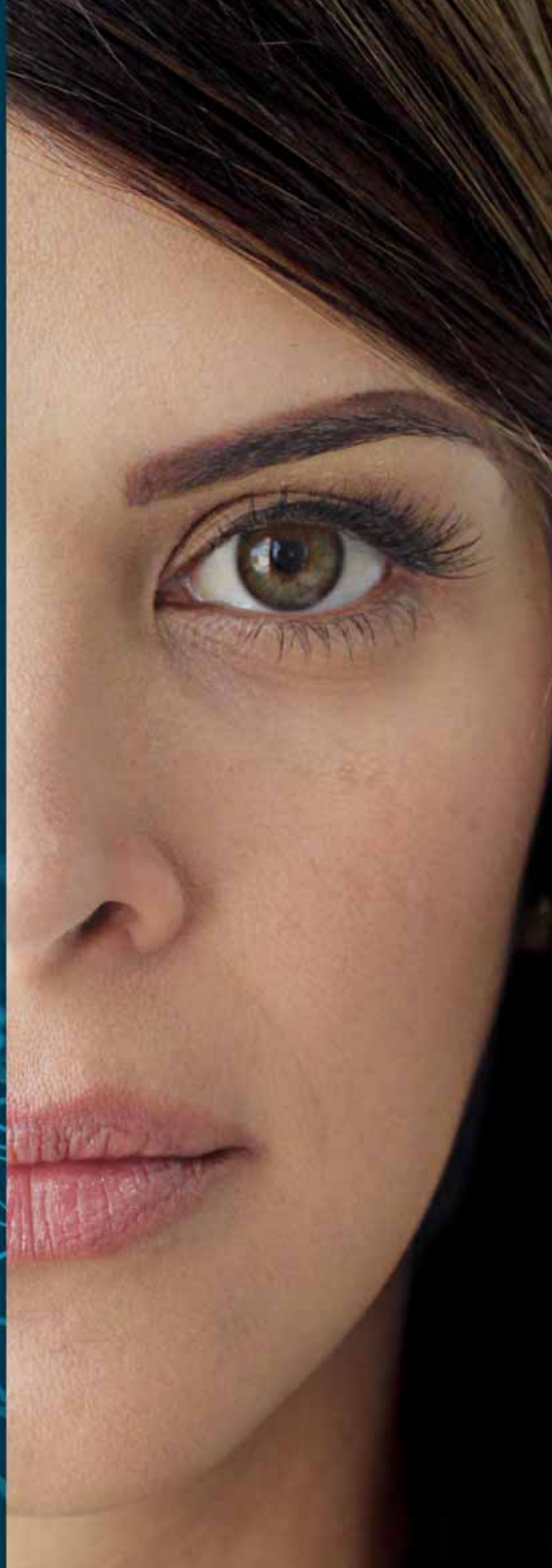
Telefónica

A Manifesto for a New Digital Deal

Towards a human-centric digitalisation



A Manifesto for a New Digital Deal

Towards a human-centric digitalisation

Cover photo:
Angélica Roa, Telefónica's Venezuela employee.

Telefónica

INDEX

Foreword
By José María Álvarez-Pallete

p_6

A New Digital Deal: towards a human-centric digitalisation

p_9

Chapter 1.
CONNECTING DIGITAL LIVES p_ 18
1. Digitalisation is changing everyday life p_ 21
2. New infrastructures, better infrastructures p_ 23
3. Private sector p_ 26
4. Public administrations p_ 28

Chapter 2.
REFORMING SOCIAL AND TAX POLICIES FOR DIGITAL SOCIETIES p_ 32
1. The changing world of work p_ 35
2. Learning to learn: the new goal in education p_ 37
3. Social policy innovation p_ 40

Chapter 3.
DELIVERING TRUST IN DATA p_ 44
1. The lack of trust p_ 47
2. Data as a force for good p_ 48
3. Building trust in data through new data ethics p_ 51
4. Rights and security p_ 55
5. Security in products and services p_ 56

Chapter 4.
SUPPORTING FAIRER PLATFORMS AND ACCOUNTABLE ALGORITHMS p_ 58
1. The Internet of platforms p_ 61
2. The issue of digital platforms and bottlenecks p_ 62
3. The clash of global platforms with national jurisdictions p_ 64
4. The importance of Artificial Intelligence and algorithms p_ 66
5. Policy responses p_ 70
6. The way forward p_ 71

Chapter 5.
MODERNISING RIGHTS AND POLICIES p_ 76
1. Digital Bill of Rights p_ 79
2. Smart Public Policies p_ 81
3. Improving global cooperation p_ 84

CONCLUSIONS p_ 90

FOREWORD

Foreword

by José María Álvarez-Pallete

Chairman & CEO of Telefónica S.A

As the new wave of digitalisation took hold, Telefónica's first Digital Manifesto in 2014 looked to the future and called to address the challenges of preserving an open and safe Internet experience for our customers. We highlighted the importance of digital trust and were early advocates for respecting privacy and improving online security.

We are not living through an era of change but a change of era. Never in history has humankind enjoyed such an amount of technology as we do today. Digitalisation is driving transformation across every sector by improving customer satisfaction, driving optimization, nurturing new revenue streams and developing new business models.

On top of all this amazing technology, we have seen the arrival of the Artificial Intelligence. Not so long ago this appeared to be just too futuristic. However, the development of underlying technologies such as augmented and virtual reality, language recognition and machine learning algorithms is making it very real.

That is why now is the time to reach a new settlement, a "New Digital Deal" which ensures that the significant benefits of the new Cognitive world are made available to everyone, that governments modernise education and successfully transform public services.
This will require a renewal of social, economic and democratic institutions, as well as stronger, more open collaboration between the public and private sectors. Most of all, this settlement must seek to preserve democracy and humanity, ensuring that technology serves to improve the lives of individuals in every part of the world.

Telefónica's new Digital Manifesto calls for a renewed focus on people and how their everyday lives will be impacted by technology. It considers connectivity as the core enabler and data as a force for good that fuels incredible insights and intelligence. All this will improve our lives in many different ways.

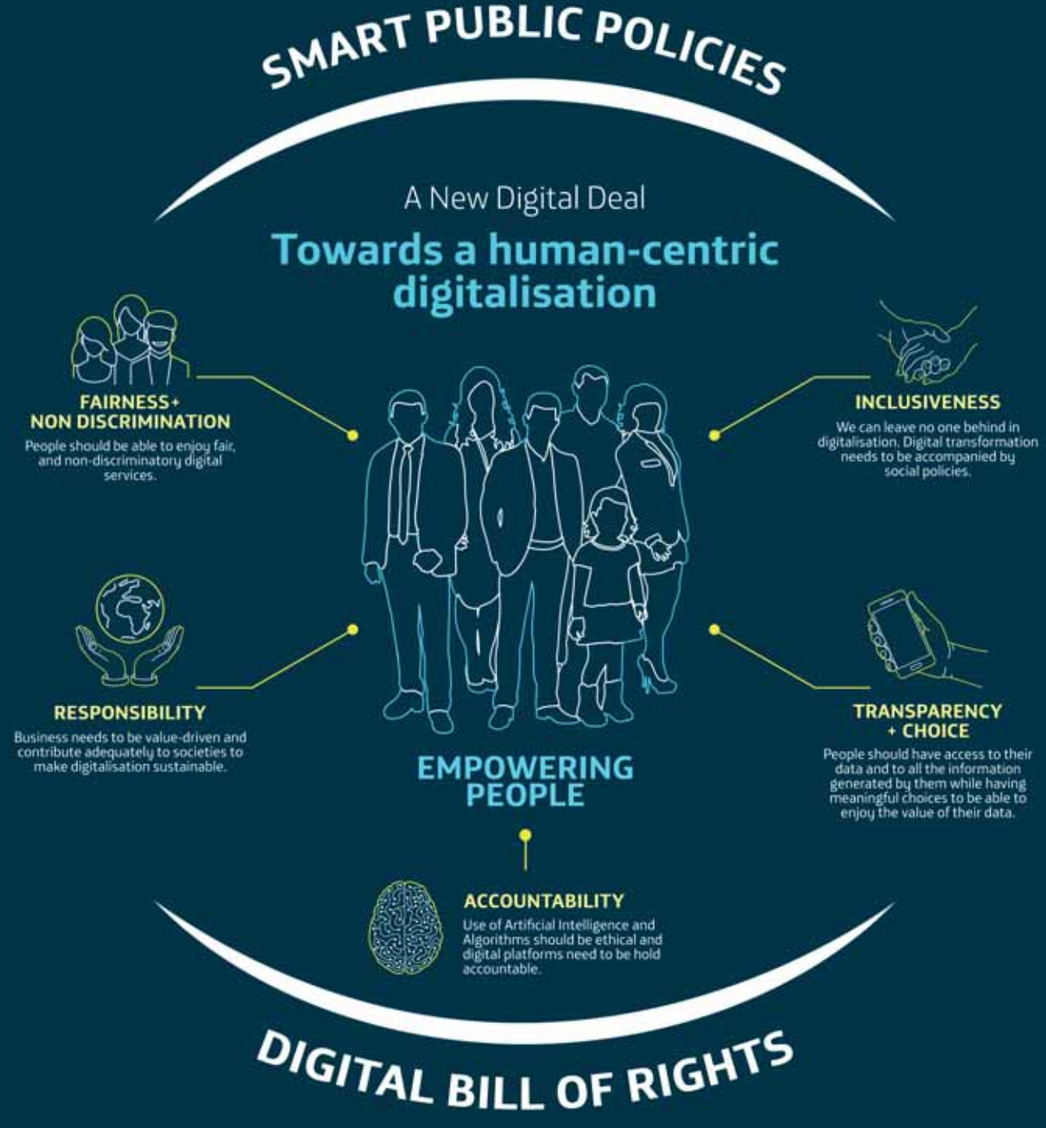
At the same time, technology sets ethical debates, particularly around data. Who does data belong to? Where is the boundary between privacy and freedom? Our societies will also need to find answers to key challenges of the Artificial Intelligence era. Businesses must take responsibility for the impact of technology on our lives.

We will need to modernise our policies and norms to ensure fair competition and innovation. We will need a Digital Constitution, a new Digital Bill of Rights to protect our values and fundamental rights in a digital future. This Manifesto aims to initiate the debate on how we can achieve human-centric digitalisation.

A New Digital Deal

Telefónica calls for a new cooperative effort to define a **New Digital Deal** to renew our social and economic policies and modernise our democracies for the digital age.

A human-centric digitalisation needs to ensure that people are the primary beneficiaries and feel in control. In our view, this process should be guided by **these principles**:



A New Digital Deal: Towards a human-centric digitalisation

"The social order is a sacred right which is the basis of all other rights. Nevertheless, this right does not come from nature, and must therefore be founded on conventions".

Jean Jacques Rousseau, The Social Contract (1762)

We live not in an era of change, but in a change of era.

The pace of change is remarkable. No aspect of our lives will remain untouched. Across the world, economies and societies are being fundamentally transformed by digitalisation. It is redefining all aspects of life, from new models of business and work, to learning, leisure and democratic participation. It could even challenge the very idea of what it means to be a human being.

The promise of data and digital technologies to improve lives is compelling. However, decision-makers in government and business also need to tackle the risks that this epochal change will inevitably bring. We face the important task of seizing new digital opportunities for societies and economies, whilst mitigating the risks.

Since Telefónica published its first Digital Manifesto in 2014 there has been a substantial shift in the political climate. The benefits of globalisation are being increasingly questioned by populist and extreme political forces.

Digitalisation today runs the risk of being regarded as an even more radical form of globalisation, and being perceived by parts of the population in developed economies as a source of inequality and degradation of living standards.

Features of the new era

The Fourth Industrial Revolution that we are witnessing today has some distinctive features: the rate of change in all production, management and governance systems, as well as its impact, are unprecedented. While industries are being transformed through new technologies that are revolutionizing traditional sales and distribution processes, and even institutions are also changing the way in which they provide services. For example, Artificial Intelligence can recognise patterns and draw inferences from large amounts of data, leading to advantages in fields such as medicine, public health, safety, law enforcement, education and environmental protection. Through the transition from "Big Data" to "Smart Data", public and private organisations are finding new value in the capability to distil actionable knowledge and insights from data.

Emerging technologies will also disrupt the way we exchange value. Blockchain's distributed ledgers enable trusted transactions. New, decentralised organisational forms, such as Distributed Autonomous Organisations (DAO), may allow effective interaction between people who do not need to know or trust each other.

The positive impact of this epochal change on per capita Gross Domestic Product (GDP) could be four times greater than during the last Industrial Revolution.

A new data economy is developing as the combined effect of a number of different developments, each in itself transformational:

- The generation and storage of huge amounts of data, enabled by the falling cost of data storage and processing together with super-fast and ultrabroadband connectivity and the proliferation of sensors, built into everything from consumer goods to industrial processes.
- The ability of Artificial and Cognitive Intelligence and Machine Learning to make sense of this vast amount of data, turning it into valuable insights; this will be the key to solving many of the world's most pressing issues, from climate change to migration and epidemics.
- The Automation of production which enables "re-shoring" and "mass customisation" of products. Routine jobs and repetitive tasks will be taken care of by machines and at the same time productivity will increase, though it is as yet unclear if this will be accompanied by job creation, perhaps bringing a new set of challenges.
- High-speed connectivity based on fibre and 5G networks.
- Decentralisation of processes using Blockchain and distributed ledgers, providing a way to establish trusted peer-to-peer transactions.

Together, these developments are taking us into a new era. However, they are also creating concerns and challenges which, when combined, could jeopardise innovation, economic development and growth. The key question is how to govern today to create a better tomorrow.

A new mindset is necessary in both the public and private sectors, taking into account the following factors:

- **Scale and speed of change:** unprecedented in its scale and effects, digitalisation challenges the nature of national borders and increases the complexity of local decision-making. The speed of these changes is overwhelming policymaking processes and challenges international policy cooperation.
- **New digital divide:** connectivity is an important foundation of digitalisation and is the key to social inclusion. However, half of the world's population, mostly in developing countries, is still not connected, meaning they are excluded from the benefits of digitalisation.
- **Privacy and security:** revelations about mass surveillance, security breaches and especially the ever more sophisticated analysis of massive amounts of data challenge the fundamental right to privacy.
- **Automation:** developments in AI, the Internet of Things (IoT) and the emergence of the Industrial

Internet raise concerns about the future of work. If machines replace people, hard-won social and human rights will be in danger. This development might also create new forms of inequality and a need to help certain parts of society to adapt.

- **Dominance and gatekeepers:** the concentration of power in the hands of a few global digital platforms makes them de facto gatekeepers of the digital experience, potentially creating bottlenecks that threaten the sustainability of digitalisation and the Internet. Some platforms have a huge influence on public opinion and people's everyday lives, which can challenge the fair and proper functioning of democracies and markets.
- **Fair contributions to societies:** there is a growing perception that global digital platforms do not contribute sufficiently to the welfare and development of local communities. This risks generating further resistance to digitalisation.
- **Sovereignty of States under threat due to the global nature of digital services:** the powers of governments usually end at national borders. Governments find it increasingly difficult to enforce national laws, for example in the collection of taxes and the protection of citizens' privacy. This creates public debates on the question if global digital services comply with national laws and contribute sufficiently and fairly to society.
- **New challenges for democracies:** democracies are facing new challenges to form public opinion through social media because fake news and misinformation are making it difficult to ensure fair democratic processes.

A New Digital Deal: towards a human-centric digitalisation

Many existing rules, frameworks and processes are no longer fit to resolve these challenges.

Their complexity means that broad collaboration to find solutions is now necessary. The goal should be to define how new technologies could be used in fair and democratic ways. Technology needs to be human-centric and we cannot afford to leave anyone behind.

It is time for society to fundamentally agree on ethical principles and common values for a digital world: it is time for a New Digital Deal. It needs to define a new social contract which ensures better, more open collaboration between governments, business, and civil society and under which technology finally serves to improve everyday life for every member of our societies. We need collaboration and debate to find creative ideas to

renegotiate, redefine and reassert common values for our digital future.

This New **Digital Deal** should establish:

- **A Digital Bill of Rights that protects our values and fundamental rights in a digital world.**
- **A modernisation of our policies and regulatory frameworks** to guarantee fair competition.
- **A renewed focus on business responsibility** based on better transparency and increased accountability for their services and platforms.
- **A commitment to innovation,** entrepreneurship and investment.
- **A collective understanding of how digitalisation can be made sustainable** by improving inclusiveness, transparency, accountability, responsibility and fairness.

Achieving such a human-centric digitalisation will require collaboration on the following priority issues.

Connecting digital lives: leaving no one behind

It is important to ensure that the benefits of digitalisation flow to all citizens to create a more inclusive society leaving no one behind. The first step for inclusiveness is to have infrastructure available to connect.

Driven by massive private investments, the growth of connectivity in recent years has been remarkable. However, almost half of the population is still not connected[1].

The reasons for this unsatisfactory situation are manifold and the public administrations should cooperate with the private sector to bring connectivity to all.

The private sector should find new ways of providing connectivity allowing it to deploy infrastructure in unserved, rural areas. Additionally, new methods of commercialisation should be established that make broadband affordable even for low-income consumers. Public administrations have also a vital role to play: regulatory reform can stimulate investment and removal of sector-specific taxation can make connectivity more affordable. Demand for services is stimulated by improving skills, promoting relevant local content and through the digitalisation of public administrations.

Overall, there are opportunities to establish new models for investment, as well as a need for new policies that encourage technological and business innovation. A new cooperation and collaboration effort between businesses and policymakers is necessary to deliver innovative ways to provide connectivity infrastructure.

Reforming social and tax policies: innovating in education, employment and taxation

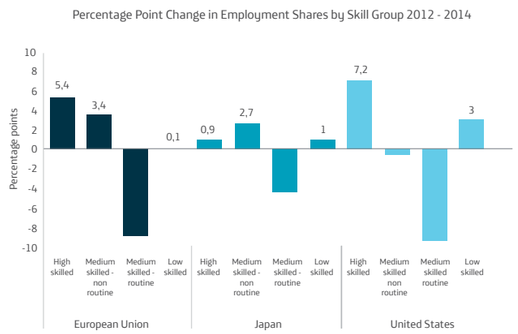
One of the main public concerns regarding digitalisation is the loss of jobs.

However, history suggests that new kinds of jobs are created in place of those that are replaced by new technologies. This means that we will see a transitional period during which workers will need to be reskilled and social policy will need to mitigate the most negative impacts.

Research suggests that:

- Nearly half of all the work we do today will be automated by the year 2055[2].
- 90% of jobs will require some level of digital skill[3].
- 65% of today's children will perform jobs that do not exist yet[4].

Chart 1. Disruption in the jobs market



Source: European Commission, DG Research and Innovation

Automation is improving business performance by increasing productivity. It is important that the disruption produced by the rapid pace of technological development is better understood. Society must be prepared for digitalisation and people must be equipped with the necessary skills to cope with it.

Education systems and national curricula need to be updated and made flexible in order to address a world of continuous change and uncertainty. A humanistic approach to education is required, fostering critical and creative thinking together with a philosophy of lifelong learning.

Governments should cooperate closely with businesses and educational institutions to ensure that education meets the needs of the upcoming labour market, so as to avoid skill shortages. The key question is how to better anticipate the transitions of the labour markets that will define the future of work.

It will be important to guide people through this transition and qualify them. Telefónica proposes the following priorities:

- Investment in training programs to help displaced workers.
- Actions that foster collaboration across industrial sectors to develop new forms of employment.

Most probably, the labour market will increasingly be characterised by the prevalence of short-term contracts and freelance work. Such new ways of working provide flexibility to workers but also challenge their social safety protections and benefits.

Innovation of social policies should focus on mitigating new inequalities born out of digitalisation. Some proposals brought forward include Universal Basic Income, negative taxation, four-day weeks and increasing taxes further on the wealthy. Solutions will require the engagement of all stakeholders, including workers themselves.

Massive adoption of robots and digital services provided from abroad can have disruptive effects on employment and contributions to public finances.

Digitalisation will require policymakers to adopt new approaches to fiscal policy in coming years. But sector-specific taxation, such as a tax on robots, might have unintended consequences: holistic analysis and testing are needed.

Tax policies should avoid tax base erosion by ensuring that online and offline businesses contribute fairly to those societies where their transactions take place.

Businesses will also need to embrace responsible tax practices and aim so as to fairly contribute to finance the public services of those countries where they provide their services.

Luana da Oliveira, Bianca Guardia and Renan Kawakami, Telefónica's Brazil employees.

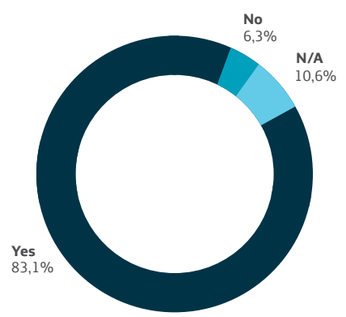
Delivering trust in data

Data can be a force for good and its use can enrich the lives of individuals, benefit businesses and advance society as a whole.

We believe a new data ethical framework is needed because people should be at the centre of digital transformation. Human-centric technologies can transform civil services such as health, education and transport to create a better future. It can also enable sustainable development and help to address some of the world's biggest problems, like climate change, natural disasters and pandemics.

Surveys show that people want to have control of their data, to decide how and when it is used and for what purposes. People also want meaningful choice in relation to their data usage.

Chart 2. Would you like to have your own tools to manage your privacy options on the internet?



Source: Reptrack 2017

Most countries protect a certain level of privacy, but regulation alone will not be enough to help people feel more confident about the use of their data. In fact, outdated regulation can actually increase consumers' confusion because it applies different levels of protection for similar services.

Building trust in relation to personal data requires attention to four basic concepts:

- **Transparency:** allowing users to access the information they generate.
- **Data security:** confidentiality and integrity of data are the pillars of privacy.
- **Putting people in control:** users should have access to tools that enable them to obtain the full value of their personal data in simple and convenient ways.
- **Choice:** people should have meaningful choices about how and for what purpose their data is used.

Given the huge value of data-driven services for people and society, ethical frameworks for data processing and processes that guarantee safety and security are essential. Security and rights are inextricably linked and therefore national security activities like mass surveillance must guarantee human rights, which should be upheld by both public and private sector organisations.

Perimeter-based approaches to security have become outdated. Measures ensuring architecture's resilience to attack, data authentication, access control and client privacy need to be established in order to make certain that security is bound with the data itself. Empowering people will be the key to a successful transition towards a data economy, especially when an increasing part of our lives will be measured by sensors that collect personal data about our health, location and habits. Trust in the use of data will be of even greater importance than it is today.

Supporting fairer platforms and accountable algorithms

Global digital platforms create value for their users, drive innovation and deploy new business models that often are more efficient or convenient than established ones.

Despite such obvious benefits, the dominance and market power gathered by today's biggest platforms gives them the potential to control users' digital experience and exert a huge influence on their lives. Some even have the ability to shape public opinion.

The combination of new technologies based on Artificial Intelligence, automated decision-making processes and massive access to data risks further reinforcing the dominance of the leading Internet platforms. This could create enduring bottlenecks in the digital economy.

To preserve the global and open nature of the Internet, local laws and values must be respected. To ensure fair contributions to societies, taxes and other provisions to national welfare and employment must be linked to the places where transactions take place and services are used. Policymakers should actively respond to these challenges and digital platforms should match their great power with increased responsibility towards their impact on the societies in which they operate.

Modernising rights and policies

Rights must apply equally online as they do offline.

In the digital ecosystem, business interests must coexist with people's rights and the interests of States. There is a plurality of interests that should be taken into account in this debate.

Not only businesses but also governments within a democratic framework should contribute to an open and transparent Internet by protecting people's rights and fostering transnational agreements in various relevant areas. Governments should seek a certain harmonisation of policies and rules in order to enable the fulfilment of individual's rights.

Citizen and consumer rights are embedded in national and international arrangements, but their definition is usually shaped by their historical role in the offline world. **These rights must become equally applicable in the online world, so the establishment of a "Digital Bill of Rights" must become the subject of a public debate and agreement.**

When it comes to the rights of citizens, the oft-heard argument that "online is different" does not hold. Business must step up to its responsibilities and take an active role in society and the promotion of people's rights.

Market supervision

A new policy and regulatory paradigm is needed, and they should be based on accountability and transparency, combining business self-regulation, policy guidance and regulatory supervision.

A variety of existing institutions shape digital policies, but the distribution of responsibilities has developed organically.

As the Internet matures and the next wave of digitalisation gathers pace, a strategic solution is required, creating appropriate institutional frameworks that tackle today´s challenges:

- Competition dynamics in digital markets have led to the concentration of market power in the hands of a small number of global players. Whilst innovation still takes place in the digital ecosystem, there is a great risk that it increasingly only takes place with the permission of these powerful firms, through the proprietary rules they enforce and the bottlenecks they control.
- Technological evolution and new business models are outpacing traditional policy and regulatory frameworks. In a fast-paced, disruptive, global, digital environment, regulation must become more responsive to behaviours and activities and less focused on specific industries and sectors. Not only businesses but also policymakers and regulators must embrace change and adapt to the new political and technological context.
- Supervision must be modernised in order to make it smarter and faster, seeking a new approach based on:
  - A focus on "what" rather than "who" is regulated.
  - A less prescriptive regulatory approach, leaving markets the freedom to experiment but with close supervision of market developments; retaining the capability to intervene decisively when market dominance and abuse take place.
  - The inclusion of data in competition analysis as the way to pay for services on a platform and a key production factor in the data economy.
  - More expertise about digital markets within authorities, making them fit for a digitalised economy and society.
- Some dominant digital platforms have a far-reaching impact on people, competition and economies that often goes beyond those of traditional business. Such companies should place the values of transparency, accountability and non-discrimination at the heart of their approach and activities; they must assume greater responsibility for their impact on economies and societies.
- Business leadership based on a values-driven approach. Business, driven by values, must anticipate the impact of digitalisation, acting responsibly to achieve a sustainable digital ecosystem.
- This should include a cross-sector approach and a focus on citizenship, human and consumer rights, rather than a purely market-centred approach.

Global solutions

As digitalisation enhances globalisation, policymakers and businesses should strive to find global or regional solutions to problems that are rooted in the cross-border nature of the Internet. The role of governments should be to enhance international cooperation in order to solve new, global issues stemming from global digital services and data flows. In this regard, the rise of cyberthreats has become one of the most pressing dangers to the future of the Internet and there is a need for better alignment and cooperation between governments and the private sector.

Today's regulatory frameworks and institutions were not built for this digital age. It is time to redesign them in order to preserve the values and achievements of previous generations. This must be done on the basis of a better understanding of how new technologies, business models and markets evolve and work. New frameworks will need to find the right balance between the experimentation and innovation inherent in well-functioning markets, whilst protecting people's rights and ensuring sufficient competition.

01
CONNECTING DIGITAL LIVES

In this chapter:

You will learn about the benefits that access to the Internet brings and how to increase connectivity through innovation, cooperation, education and the right policies to leave no one behind.

CONNECTING DIGITAL LIVES

The Issue

- Being able to connect is essential for a digitalisation process that leaves nobody behind.
- Although connectivity growth has been remarkable over the last decade thanks to mobile broadband networks, half of the population still remains unconnected.
- Current technologies and business models will not be able to deliver ubiquitous connectivity and satisfy the growing requirements of new services and devices.

Our Belief

- Digitalisation must be inclusive so everyone has the opportunity to participate in the connected world.
- Public administrations should make broadband deployment a priority for their national development and work together with the private sector to bring connectivity to all.
- The private sector will need to rethink how it deploys network infrastructures and commercialises broadband services. Telefónica is a leader doing so in Latin America.
- Governments should modernise regulation to support and foster new ways to deploy, operate and commercialise networks by companies.
- Regulatory reform should strive to attract private investment and support lowering the cost of infrastructure deployment by removing taxation.
- Public administrations should also contribute to increase demand for broadband services by improving people's skills, promoting relevant local content and digitalising public services.

1. Digitalisation is changing everyday life

Digitalisation can be viewed as the Fourth Industrial Revolution[5] and the basis for amazing new services and business models that are transforming and disrupting many businesses.

Around the world, the way we work, communicate and face daily tasks is being revolutionised by digitalisation – from shopping to culture and entertainment.

The telecommunications sector is a good example of how digital services have changed the way people communicate: images, video and enriched text messages now complement voice communication.

But this is not just about private businesses; public services, governments and politics are changing too. Healthcare, transport and education are all among rapidly-evolving services that are improving their ability to interact with citizens and better meet their needs.

To be sustainable, digitalisation must be an inclusive process that ensures everyone has the opportunity to participate in a connected world. Without reliable, high-speed connectivity infrastructure, people cannot benefit from huge opportunities coming from the new ways to create, communicate and collaborate.

Digitalisation opens the access to digital education and knowledge on an unprecedented global scale, which in turn provides new professional possibilities and prepares people for new digital employment.

Therefore, connectivity is a necessary element to empower people and the key to social inclusion.

Connectivity is the first requirement to enter the digital world.

The connectivity has a positive and relevant impact on employment and improves the Gross National Income (GNI) per capita as the International Telecommunications Union (ITU) has reported. Improving Internet access and use are correlated with higher GNI (see chart 1). The ITU has also published an ICT Development Index (IDI), which records the population's digital skills and suggests a clear relationship between education and per capita GNI (see chart 2).

But worldwide 3.9 billion people, more than half the world's total population, are still offline. The majority of these people are from the developing countries[6].

Out of this, around 1.2 billion cannot access to 3G or 4G mobile infrastructures and therefore cannot connect to the Internet, but 2.7 billion live in areas of coverage of mobile Internet access and do not connect and use it (see Chapter 1: At a glance).

Telefónica has invested more than 45 billion euros over the last five years to provide global infrastructure, becoming the first fibre provider in terms of footprint and bringing mobile broadband coverage to almost 80% of the Latin-American population. Nevertheless, 20% of this region's population is still unserved by mobile broadband.

Chart 1. Relationship between use of connectivity and GNI per capita:

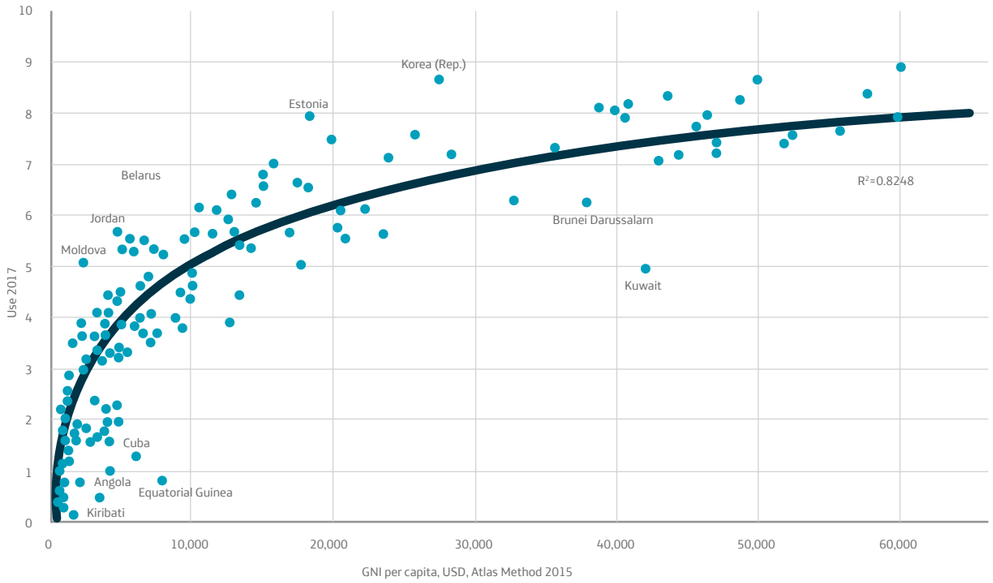
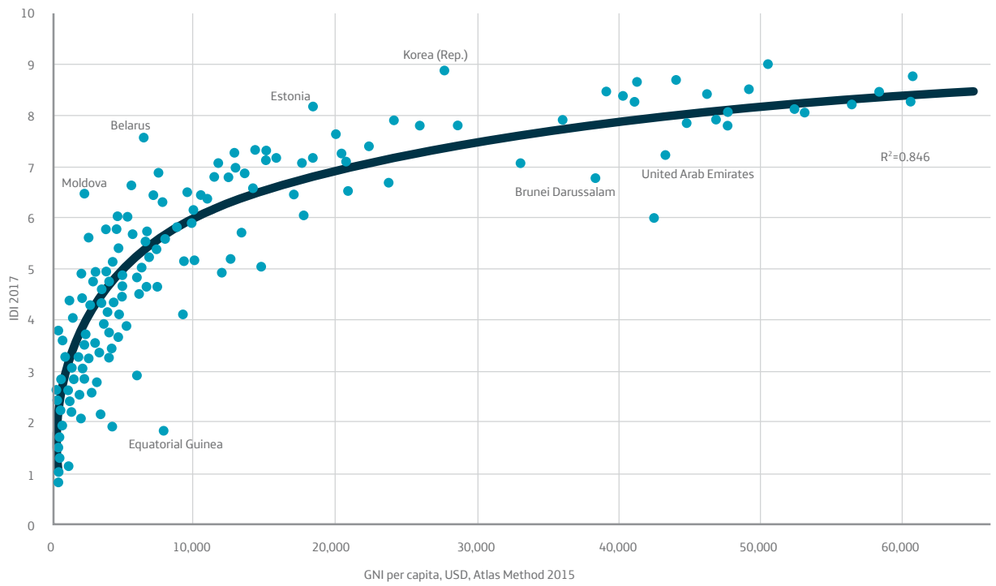


Chart 2. Relationship between ICT Development Index (IDI) and GNI per capita:



Source: ITU

"Broadband represents a powerful way to accelerate progress towards the attainment of the 17 SDGs, and new broadband networks and services will play a key role in the delivery of education, healthcare and basic social services, particularly for chronically disadvantaged communities".

Howlin Zhao, ITU Secretary-General

2. New infrastructures, better infrastructures.

Connectivity is the first step in the digitalisation. It is important to work on two key areas:

Digital divide. Connecting the unconnected

Connecting those who don't have access to the most advanced networks (New Networks). The unconnected should be the main focus of policymakers and governments. This New Networks should not just be provided for the short term, but designed to evolve as soon as new solutions and innovations are created, thus reducing the capability gap between rural area networks compared to urban areas.

Inclusion is a concern for all governments and other organisations shaping the digital world. In the same way that power and water infrastructure were central to development in the 20th century, today connectivity must be accessible for everyone.

Sustainable networks

Improve or evolve older networks to meet the demands of a fully digitalised society (Better Networks). The digitalisation of everything will concentrate in ultra-dense areas up to 1 million devices connected simultaneously into a single 1 km2 (counting users' smartphones and other devices). This is an unprecedented challenge that entails a radical change in how networks are deployed and operated.

In order to connect people and objects, networks will need to become smarter and more flexible. Some applications will need higher bandwidth or better latency and response, while others will be able to operate in networks with less demanding performance. In the same way, the controlled and identifiable environment and the level of cybersecurity that industry 4.0 will require differ profoundly from the environment of open access and freedom to attach (uncontrolled) devices offered by generic Internet access.

Current approaches won't work for these new challenges because:

- The current obligations that operators have when building infrastructures make it impossible to provide networks at reasonable prices for low-income users living in remote areas.
- Misleading and restrictive understanding of current regulations requires networks to perform equally for all services or devices.

Both challenges have a common ground: they require a modernisation of rules and regulations in order to provide an adequate framework where network innovation is not discouraged.

Providing such resilient, trusted and pervasive infrastructures that bring connectivity to everyone represents a big challenge that will need a multi-stakeholder approach. This will require the collaboration and cooperation of the private and public sectors, as well as operators, device suppliers, regulators, policymakers, vendors, standardisation bodies and open source communities.

Telefónica maintains a firm commitment to provide infrastructure to everyone in the countries where we operate. **We have invested €45 billion worldwide over the last five years and we continue to seek innovative ways to cooperate with other players in the ICT sector in order to increase our presence and extend our services to challenging areas.** Telefónica believes that this is the best way to help societies, in line with the United Nations (UN) Sustainable Development Goals (SDG)[7].

Furthermore, finding new ways of providing better infrastructure to increase access to services is not enough unless people can see the benefits of using them. Even in well-connected areas, there are significant gender, age, income and education gaps[8].

Making services more relevant to diverse populations and creating relevant content and services in local languages are key issues that create a virtuous circle by promoting the experience of digitalisation and encouraging further exploration.

In order to get people connected it is necessary to find innovative ways to deploy networks, enable the creation of relevant digital services and equip users with basic digital skills to benefit from them.

A variety of initiatives from the private and public sectors are required to close the connectivity gap by taking action on both the supply and demand sides:

- **Private sector:**
  - Devising innovative and sustainable technology and exploring disruptive investment models to deliver infrastructure.
- **Public administrations:**
  - Creating an investment-friendly policy framework to build Information and Communications Technology (ICT) infrastructures.
  - Following a holistic approach.
  - Digitalising public administrations and civil services.

Chart 3. Key characteristics of the world offline population

The Gender Gap is most pronounced in Africa, the Arab States and Asia Pacific

Half have a GNI/ Capita of < US$ (PPP) 6.500, a large proportion of which are located in Africa and Asia-Pacific

Individuals with low educational attainment often remain unconnected across all regions

60% live in rural areas, of which a large proportion is located in Africa and Asia-Pacific

The elderly have much lower Internet penetration levels than the overall population across all regions

Source: Connecting the unconnected report, ITU, 2017

Case study

UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS

The United Nations sustainable development agenda is guided by 17 Sustainable Development Goals (SDGs) that seek to end poverty, protect the planet and ensure prosperity for all. Two of the SDGs are directly linked with communications infrastructure, digitalisation and its impact on education and economic growth.

Goal 9: *Build resilient infrastructure, promote sustainable industrialisation and foster innovation*

This goal recognises the importance of investment in communications infrastructure:

- 1-1.5 billion people do not have access to reliable telephone services.
- Quality communications infrastructure supports the achievement of social, economic and political goals.
- Inadequate communications infrastructure restricts access to markets, jobs, information and training, creating a major barrier to business.
- Undeveloped communications infrastructure limits access to healthcare and education.
- Small and medium-sized enterprises (SMEs) that engage in industrial processing and manufacturing are the most critical for the early stages of industrialisation and are typically the largest job creators. Over 90 percent of businesses worldwide are SMEs, accounting for between 50-60 percent of employment.

Goal 17: *Revitalise the global partnership for sustainable development*

This goal recognises the importance of a multi-stakeholder partnership approach:

- Enhancing the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.

3. Private sector

Innovation to deliver the access infrastructure that consumers need

The networks of the future should be personal, fully flexible and adapted to customer demands. People will interact with networks to manage and configure their experiences, depending on their immediate needs and wishes. Networks need to be sustainable and also smart enough to keep pace with consumers.

Delivering ubiquitous access infrastructure will require a huge effort from the telecommunications sector. Connecting remote sites can cost much more than urban areas and, therefore, the return on investment is much lower due to the cost of deployment, even assuming the same intensity of use as in urban areas.

Similarly, the high cost of developing infrastructure in ultra-dense areas able to deal with the new requirements of the Internet of Things and other new services will need of new solutions that may later be escalated to rural areas.

The new technologies that are being developed to provide fully flexible infrastructure management in order to make them more sustainable are based on Software Defined Networks, Network Function Virtualisation and Network Slicing in 5G networks. This will allow infrastructure providers to be more efficient, providing network capabilities fit for purpose, instead of having a rigid platform that cannot sustainably satisfy the needs of a digitalised society.

Additionally, innovative ways of using existing technologies will allow the private sector to overcome traditionally unmanageable problems. Balloons, drones and satellites may all become elements of a network solution.

Open standards and open source initiatives reach their maximum potential in remote places. They can reduce the level of expertise required to manage a local access network by enabling communities to handle an operator's local equipment by themselves and contributing to network maintenance in remote areas. The use of more generic equipment can then reduce the cost of equipment maintenance and upgrades.

Thus, in order to provide access infrastructure that brings connectivity to diverse and challenging contexts and areas across the world, from ultra-dense downtown districts to remote and rural coverage, the private sector will need to:

- Develop new equipment and technical solutions.
- Find new business models and explore cooperation with other players.
- Cooperation with digital service providers in some rural and low-income areas in order to provide sustainable network access provision.
- Transform conventional business approaches, break down silos and develop business models to implement 5G networks that will help to solve these challenges, both in rural and ultra-dense areas.
- Strengthen the cooperation between equipment suppliers and software developers, working with open standards to achieve economically feasible, efficient and sustainable solutions.

Case study

TELEFÓNICA'S PROGRAMME: "INTERNET PARA TODOS"

Almost 100 million people in Telefónica's footprint are not connected. We are committed to ensuring that the benefits of digitalisation flow to all citizens and are more evenly shared, in order to create a more inclusive society that leaves nobody behind.

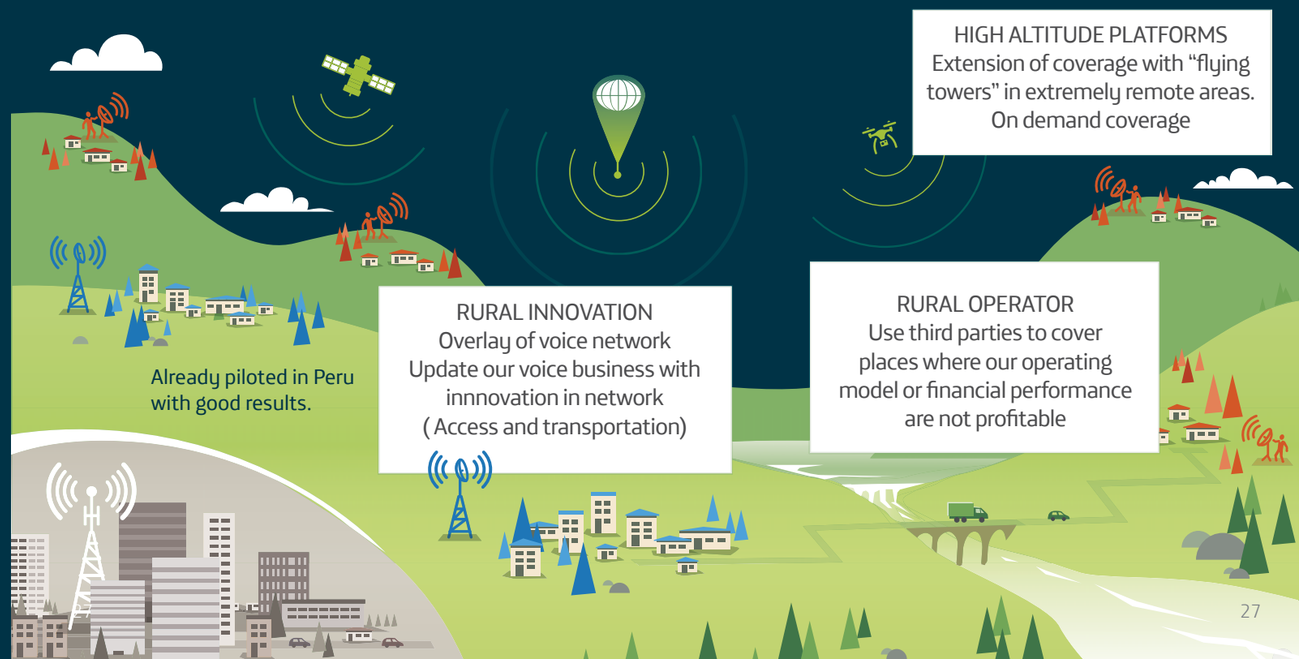
"Internet para Todos" is Telefónica's internal programme that reimagines the way networks are designed, deployed, operated, maintained and commercialised, so as to continue extending our mobile Internet coverage beyond our current reach.

Telefónica tackles this major challenge with a radically open approach, collaborating with several cross-industry stakeholders: Internet companies, other local operators, local entrepreneurs, governments, etc. We are using the next generation of software-based networks to build a rural, sustainable value chain with scalable financial structures capable of deploying the networks of tomorrow.

Some of the key elements that "Internet para Todos" is reinventing in Latin America are:

- Adapting infrastructure to low-density areas.
- Designing an open, simplified, fully virtualised, environmentally efficient and programmable network and support tools.
- Discovering disruptive deployment models such as High Altitude Platforms, local communities and entrepreneurs.
- Leveraging Big Data & Artificial Intelligence (AI) to guide decision making.

With the "Internet para todos" programme, Telefónica is expanding Internet with an innovative approach, incorporating a broad range of partners and stakeholders to solve the rural connectivity challenge.



4. Public administrations

Investment-friendly policy framework

Public administrations must focus on providing the best outcome for all citizens, being open to new operational and investment models. Predictability of the legal and regulatory environment is vital to enable investors to assume risks and to attract the private capital that is needed to build the infrastructure networks of the future.

A flexible and predictable approach includes:

- Greater flexibility in the way networks are developed and used to provide services, supporting a more efficient rollout of next-generation networks such as fibre and 5G both in ultra-dense and remote areas, taking full advantage of what technology can provide in terms of infrastructure usage efficiency.
- The promotion of private investments in cooperative and community networks operated by local residents in very low-density and unserved areas that may then be attached to:
  - Private backhaul links
  - Wholesale-only networks, also privately funded, where anyone can join.
- A regulatory reform or soft approach to encourage new business models that can get the best of a two-sided market which complement the current ones based only on bandwidth and/or volume of data consumption. Such a two-sided market is a key feature of the Internet for specific rural areas with low-income population, as well as for ultra-low latency networks needed to provide new services in very high density areas.

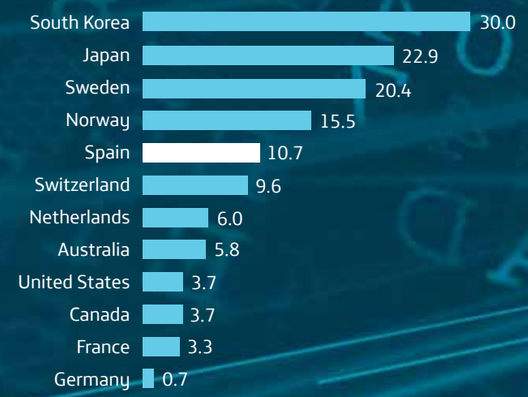
It might be time to reconsider whether consumers alone should assume the funding burden of access networks, given how little control they have over the volume of data being pushed towards them by digital services.

Case Study

SPAIN LEADS FIBRE TO THE HOME (FTTH) DEPLOYMENT IN EUROPE

In Spain, a change in the regulation of optical fibre access in 2009 aimed to attract investment in high-speed broadband (above 30 Mbps). It resulted in massive fibre roll-out by the three operators. By June 2016, more than 11 million households had fibre to the home (FTTH) access and by the end of 2016 take-up was nearly to 35%. Back in 2008 Spain was a laggard in Europe in terms of homes passed with FTTH technology. Now it is ranked 5th in the world (7th by number of FTTB subscribers) and has the biggest FTTH network in Europe, making Spain the leading European country for FTTH availability.

Where Fiber Broadband is Most Prevalent
Fixed fiber broadband subscriptions per 100 inhabitatns in selected OECD countries*



*December 2016 *Source: ITU*

Daniel Souto, Telefónica's Brazil employee

A two-sided market means that both consumers and producers contribute to fund their common platform. It avoids the burden of funding falling solely on one party or the other. In many cases, consumers can contribute to fund the platform with their personal data in addition to or instead of financial remuneration.

Operators, industries and individuals will need to develop and experiment with new business models, and regulators should be open to lightening regulatory burdens like some existing net neutrality provisions.

As well as a modernised approach to innovative business models, new ways are needed to provide licenses from governments and regulators, removing the costly processes that transfer private capital to governments instead of having that capital deployed directly into the building of networks and infrastructure.

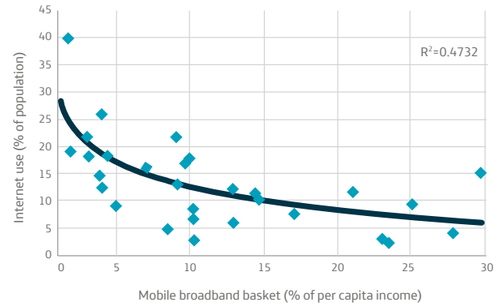
The experience of limiting regulation around wholesale fibre obligations in Spain resulted in a boost to fibre deployment by all the operators, putting Spain at the forefront of the EU in terms of number of fibre connections and networked homes.

Holistic policy approach

Regulation should take into account the value of innovation in business models and retail offers and the benefits this can bring in terms of take-up. While some of these initiatives have come under criticism for potential Net Neutrality violations, it is fair to say that many of them have been very popular.

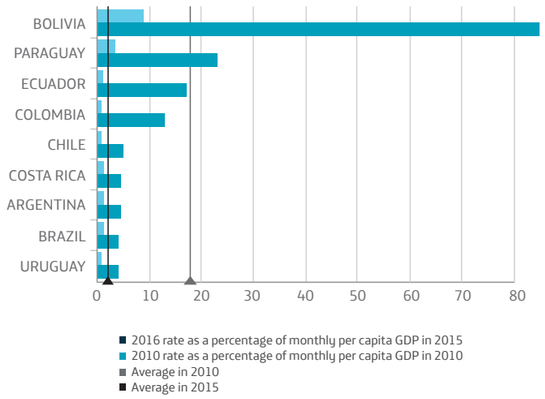
Affordability is often viewed as a relevant reason why people do not use the Internet. Obviously, people need to be able to pay for connectivity, so price levels do matter. However, as the ITU has recently stated in a major study for least-developed countries[9], the relationship between mobile broadband prices and Internet use is not particularly strong and other factors, such as availability and skills, are also at play (see chart 4). Furthermore, mobile broadband prices have fallen considerably in recent years[10] (see chart 5).

Chart 4. Relation between mobile broadband basket and internet usage, 2015, Least Developed Countries.



Source: Adapted from ITU

Chart 5. 1 Mbps broadband landline rate in Latinamerican countries as a percentage of monthly per capita GDP, 2010 and 2015



Source: ECLAC Regional Broadband Observatory. For 2010, the rates correspond to December. The rates for 2016 correspond to January; GDP to 2015

Affordability is, therefore, one factor, but other issues are equally important, including take-up barriers that need more focus by governments than just the price of connectivity. For example, the cost of the associated equipment and devices required to run digital applications and services. Computers, tablets, smartphones and the power supply required to run them are fundamental components of digital life and need to be accessibly priced so that citizens can take advantage of the connectivity available to them.

Communications services should not be taxed differently than any other basic good and neither should there be differences in taxation rules between different providers. High tax rates, or sector-specific taxes, make communications services less affordable for lower-income groups, and can have the effect of turning the use of digital services into the preserve of a privileged few. Governments should bear this in mind when defining their tax policy and categorising devices, which should be treated as basic tools for empowering people, not as luxury goods.

Modernisation of public administration

Public administrations can help to build trust and confidence by demonstrating the huge advantages of digitalisation. This process of digitalising administrations has additional advantages, as it increases their service capacity and optimises resources, enabling reinvestment and increasing efficiency.

It is a win-win proposition for all. Citizens become engaged in the digitalisation process and develop an increasing need to participate in the digital society as public services go online.

It is easy to envisage some examples:

- Digitalising healthcare will enable better services to be delivered and efficiently extend the reach of advanced medical services to remote areas.
- The use of data analytics makes public transport systems more efficient.
- Digitalisation of processes involving tax authorities has been demonstrated to act as a great incentive for people, companies and other agencies to embrace the advantages of such changes, saving time, efforts and money for all parties.

Case study

SWEDEN'S BLOCKCHAIN-POWERED NATIONAL PROPERTY REGISTRY

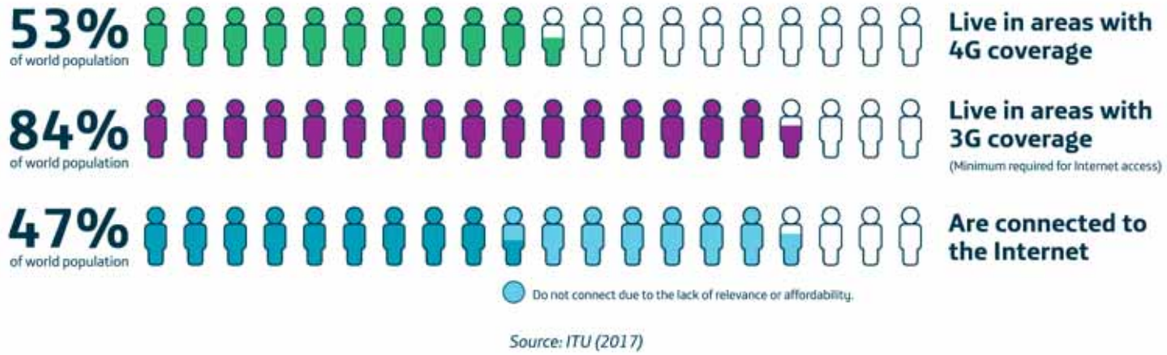
March 2017, the Swedish National Land Survey completed the second phase of a Blockchain-powered National Property Registry, working with the start-up ChromaWay, two banks specialised in mortgages, Telia and Kairos future technology consultants.

The solution clears the way for the removal of the old paper-based process and substitutes it with a fully digitalised system. Blockchain provides security and convenience, and a reliable way to streamline the workflow across the ten or more different entities involved in the process.

Chapter 1: At a glance

The Issue

Connectivity is the first requirement to enter the digital world. But current technologies and business models are not able to satisfy ubiquitous connectivity nor the growing demand of new services and devices, and even when technologies and services are available many people remain unconnected.



Source: ITU (2017)

Our Belief

01. INNOVATIVE ACCESS NETWORKS

The private sector has to develop new ways of how to deploy and manage networks in a sustainable manner, using open standards, new technologies and finding new and collaborative business models that take the best from all the players involved.

02. INVESTMENT FRIENDLY POLICIES

Predictable and flexible regulations on how networks are developed, with spectrum and tax policies tailored to support investment and usage. They also should allow experimenting new business models in 5G and two sided markets.

03. FOSTER USER ADOPTION

Foster adoption by demonstrating the huge advantages digitalisation brings, implementing demand side initiatives such as improving skills of people, promoting local relevant content and enabling an environment for affordable access.

04. DEVELOP E-GOVERNMENT SERVICES

Implement an e-Government strategy, digitalising public services provided by administrations: tax collection, general administrative processes for social security, health, property registry, ID & licenses renewal.

02

REFORMING SOCIAL AND TAX POLICIES FOR DIGITAL SOCIETIES

In this chapter:

You will learn about our recommendations to governments and companies in order to help society become prepared for the digital revolution by modernising education systems, implementing reskilling programs, offering new social policies and adapting taxes to the new digital economy.

REFORMING SOCIAL AND TAX POLICIES FOR DIGITAL SOCIETIES

The Issue

- The profound impact of digitalisation on economies differs from that of previous industrial revolutions due to the speed of change, making adoption more challenging than ever before for society and people.
- Labour markets are being radically transformed and many people are at risk of being affected by new social insecurities and inequalities.
- The sustainability of social policies, security and welfare are endangered through digitalisation and Automation and their impact on tax contribution and employment.
- Artificial Intelligence (AI), Machine Learning and Big Data will be the drivers of Automation of all repetitive processes and jobs, leading to the disappearance of many posts and professions, while creating new ones.

Our Belief

- Policymakers will need to actively shape digitalisation by adopting adequate policies to prepare and guide people through this new Industrial Revolution.
- Social policies need to be modernised and adapted to the new markets' realities to be able to protect people and workers.
- Existing workforces will need to be reskilled to guarantee future employability.
- New approaches to education are needed to develop the necessary skills and knowledge for a digitalised economy. People will need to learn throughout their lives and education systems and businesses have to adapt to that new reality.
- Technology and connectivity will help to provide better education for everyone.
- Tax erosion through digitalisation needs to be avoided to ensure that public education, social policies and welfare are adequately funded to be able to support the profound transformation of digital societies.
- Global digital businesses should adopt responsible tax practices and contribute fairly to those societies where their activity and transactions take place.

1. The changing world of work

Technological advances are ushering in an industrial renaissance that could empower workers and reduce inequality, both within and between countries. However, the digital economy leads to disruptive processes in terms of efficiency (like saving time, lowering costs and reducing errors), standardisation and new models of collaboration which are generating uncertainty about employment.

What does history tell us about the relationship between employment and technology? The experience following technological revolutions has always been very positive regarding job creation, although every society has gone through transition periods to adapt supply and demand.

Digitalisation is key to ensuring greater economic dynamism in the short and medium term.

A virtuous circle can be generated in the relationship between work and technology provided that:

- Supply matches demand.
- Policy and regulatory frameworks are adapted to the new economic context.
- Financial stability is guaranteed.
- There is cross-sectoral adoption of new technologies.

The challenges that we currently face are related to the speed of change mediated by technology. These are risks related to digital divides, to the digital transformation of companies and sectors and to the adjustment of the labour market.

The Gig Economy

The rise of the Gig Economy is creating a dynamic environment in which the nature of work is being reshaped by changing demographics and technological progress with social, political and economic implications that are concerning for workers, organisations and policymakers.

"Intelligence is the ability to adapt to change".

Stephen Hawking (1945-2018)

Jesús Gil, Rafael Muñoz, Angélica Roa, Andrés Vega and Edmar Vanessa: Telefónica's Brazil employees

Over the next decade, developed economies will feel the effects of an ageing population that will need to remain independent, active and also work for longer than before.

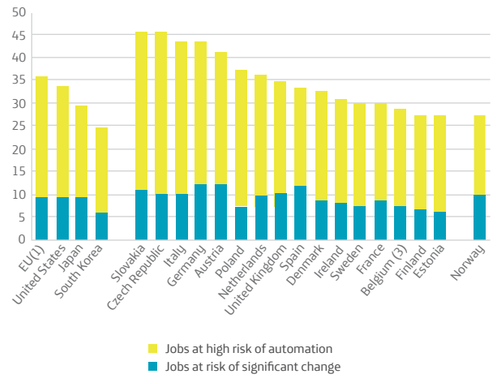
The digital revolution is helping people and organisations to progress in previously unimaginable ways. New technologies are offering many opportunities for flexible work that has moved beyond the option to work from the office. Today, people are able to work anywhere.

Many people work multiple freelance jobs since online marketplaces provide businesses with access to a scalable on-demand workforce. Technology and service companies have been a major force in the expansion of the Gig Economy that is providing opportunities for industry-specific workers to find work that fits their schedules, skills and needs. The number of people working on a project basis in non-salaried employment are on the rise and that requires a better understanding of current workers' expectations, to ensure that these new forms of work do not result in new social tensions.

Another factor shaping the new labour market is non-financial motivation. Some Internet services, like Wikipedia, have developed based almost entirely on volunteer work. Governments and business leaders must ensure that this Gig Economy is not characterised by uncertainty and precarious employment conditions, but rather by fairness and social equality. To achieve this goal, policymakers should find new formulas to afford individuals better protection in these new work models and businesses should take action across industrial sectors to develop them. **With the right policies in place, societies will be able to deliver social inclusion and generate widespread prosperity.**

Automation is also becoming a challenge for employment and the human-robot partnership will undoubtedly continue to further transform the nature of work.

Chart 1. Jobs at High Risk of Automation or Facing Significant Change, 2016



Source: OECD (2016) "Employment Outlook"

Disruption in the jobs market. Job transformation

Some have seen automation as a synonym for unemployment, but it increasingly seems that it will mainly target certain jobs profiles which are due to repetition easy to automatise. Digitalisation has already generated new jobs that did not exist a decade ago, such as Big Data specialists, social media managers, cognitive computing engineers, Internet of Things (IoT) architects and Blockchain developers. Therefore, it remains to be seen whether **digitalisation and Automation will change the world of employment, replace repetitive jobs and create demand for new skills.**

During the transition to the new economy, training and reskilling of the existing workforce will be required to help those workers displaced by Automation. Going forward, training and learning will play a major role in people's working lives because the future of work is going to be all about skills, change and adaptability.

2. Learning to learn: the new goal in education

The Organisation for Economic Cooperation and Development (OECD) estimates that 65% of today's children will have jobs that do not exist yet[11].

By 2020, more than one-third of jobs will be based on new kinds of skills. This is becoming a worldwide phenomenon and represents a new paradigm in education. In the EU, the number of digital jobs is growing by about 100,000 every year, but the number of graduates with the required Information and Communications Technology (ICT) skills isn't keeping pace with demand[15].

Beyond Science, Technology, Engineering and Maths (STEM), creativity, critical thinking and empathy are becoming ever more important for all workers: the World Economic Forum (WEF) anticipates a growing demand for cognitive abilities (52%), systems skills (42%) and complex problem-solving skills (40%)[12].

In order to avoid skills shortages, mass unemployment and continued growth of inequality, more individuals must be empowered to participate in this digital transformation.

It is vital to reform education systems and national curricula so as to meet the needs of a rapidly changing labour market, incorporating a philosophy of lifelong learning, enabled by digitalisation and connectivity.

Technology will help in those efforts. It can revolutionise education systems and engage and inspire people to learn:

- Education should no longer be something that you do at a specific institution for a specific period of time to obtain a certification. Instead, it should be a lifelong journey of exploration. To thrive in a rapidly changing world, students must learn to be self-motivated lifelong learners.
- Practical knowledge can be more relevant than traditional qualifications, so the methods and purpose of assessment must also be adapted to the digital world.
- New possibilities for remote collaboration are enabling people to access information that was previously inaccessible.
- Learning can be personalised and enriched through Artificial Intelligence (AI) and Augmented Reality (AR). New tools, such as **Massive Open Online Courses (MOOCs)** should be widely available and accessible to everybody.

Digitalisation also represents a great opportunity for disabled people to engage better with others. Virtual Reality (VR), Augmented Reality (AR) and AI applied to readers could, for instance, be a step change in how innovation makes regular content available to everyone, regardless of any disability they may suffer[13].

It is the duty of all stakeholders to maximise the possibilities for digitalisation to make content, products and services accessible to everyone.

Public Administrations should:

- Take new forms of education seriously, fostering their adoption and integration within established educational institutions in order to empower all individuals to play a full role in the data society.
- Anticipate and support the transition period predicting new skills demanded and foster reskilling across the economy.
- Reform education systems and national curricula to meet the demands of the digital world.
- Deploy agile social protection and insurance mechanisms to avoid destabilising income while prioritising rapid workforce reintegration.
- Increase education opportunities through subsidised student loans, grant opportunities and tax policies.
- Help develop new methods of education and training delivery that combine online and offline models (microcredentials, Lego education).
- Analyse open source tools that may allow societies to adapt quickly to rapid changes.
- Establish links with educational institutions at all levels, including schools, universities and corporations.

Businesses should:

- Support the reskilling of workers displaced by Automation and foster a culture of lifelong learning to support individual adaptability and resilience.
- Define strategies and policies that ensure reskilling and upskilling of existing workers, focusing on competitiveness and employability.
- Work with educational institutions to update curricula and provide workers with the necessary mindset and learning tools, creating a new learning ecosystem.
- Explore new opportunities for learning and new technologies that enable scaling of learning, tapping into new models of online and offline and modular learning.
- Spread awareness of these changes to engage in lifelong learning.

Individuals should:

- Be aware of how these changes can impact their employability in order to prepare for it.
- Explore new learning opportunities and new technologies that facilitate scaling learning, tapping into new models of online, offline and modular learning.
- Be agile lifelong learners and be comfortable with permanent change.
- Engage in lifelong learning and regular reskilling to ensure they remain employable and to maximise work opportunities.

Digitalisation is the foundation for increasing sophistication and quality by making education portable, accesible, affordable, scalable and updatable.

Case study

HOW TELEFÓNICA USES TECHNOLOGY FOR EDUCATION:

Telefónica Foundation and some of the main Information and Communication Technology (ICT) companies in Latin America are committed to the AMERICAS 2030 ICT Alliance (promoted by the Inter-American Telecommunication Commission [CITEL] and signed by the Organization of American States [OAS]). Telefónica is contributing as part of three key initiatives:

*SCOLARTIC_*

ScolarTIC: a social space for high quality learning through free online courses, innovative classroom resources, talks, presentations and workshops. The platform currently has over 220,000 teachers.

*STEMBYME_*

STEMByME: a learning and entertainment space for young, Spanish-speaking Americans which aims to inspire them through science, technology, engineering, art and mathematics, and offering new ways to build their knowledge. More than 120,000 young individuals are already participating, learning and tackling new challenges on this platform.

*MIRÍADAX_*

MiríadaX: the first Latin American MOOC (Massive Open Online Course) platform focusing on higher education. MiríadaX currently has 4 million enrolled students from all around the world and offers over 500 online courses mentored by more than 2,546 teachers from 105 universities.

ProFuturo *Comprometidos con la educación.* | Telefónica FUNDACIÓN | Fundación Bancaria "la Caixa"

PROFUTURO: ProFuturo, a major digital education project, is using digital technology to bring high-quality basic education to two million children and teens with the sponsorship of Telefónica Foundation and "La Caixa" Foundation.

ProFuturo has already provided access to education for 2 million children and will reach 10 million by 2020. It is currently present in Africa and Latinamerica, and will soon expand to Asia.

3. Social policy innovation

Public and private decision-makers must put people at the centre of this change by taking action to harness human potential. They must prevent technological change from being accompanied by talent shortages, mass unemployment and growing inequality. **There is an urgent need to consider and experiment with new approaches to sustainable social welfare.** The unprecedented speed of change in labour markets and how we work could lead to the emergence of new forms of inequality and, therefore, a new demand to help different parts of society to adapt.

New formulas for social policy innovation should be discussed broadly by societies in order to provide an answer to urgent questions, such as supporting social inclusion and generating widespread prosperity.

Could Basic Income be a solution for large-scale unemployment or any temporary labour market dislocations that may result from technological change? This option addresses the fundamental problem of people being left behind by the digital economy. Opponents argue that such an approach encourages people to stay out of the labour market and that it could lead to lower salaries as workers' income is supplemented by the basic income.

How can social welfare be financed in a digitalised economy? Should societies finance future social welfare through wealth taxation, negative taxation and taxation of robots?

Taxation of robots is being put forward as a potential lever to counteract the potential impact that massive robot adoption driven by AI development could have by displacing human jobs. Bill Gates believes that governments should tax corporate use of robots as a way to, at least temporarily, slow the spread of automation and also to fund other types of employment. Microsoft's[14] founder argues that if a robot does the job of a person, it should be taxed at a similar level as the person it replaces, including income tax or social security tax.

However, taxation of robots would also have some negative consequences:

- A specific tax on robots could discourage firms from investing in robots, lowering economic growth, deterring innovation and, to the extent that robots complement labour in some cases, leading to less hiring and lower wage growth.
- Robots can boost productivity and GDP growth by lowering prices. A robot is a capital investment and economists agree that taxation which deters investment eventually makes people poorer without raising much money.
- Taxing robots could actually leave affected employees worse off. Certain workers may suffer from being displaced by robots, but all workers are also consumers and, therefore, taken as a whole they might be better off if prices fall.

The widespread adoption of robots and automation will certainly require policymakers to take new tax policy approaches in coming years, but taxing robots could have unintended consequences. More holistic analysis and testing are needed to define the best tax policies for a digitalised world, but changes will be inevitable.

Technology and automation will only be regarded as positive forces if people are sure that values such as fairness and equality will continue to be respected.

Case study

BASIC INCOME IN FINLAND

Finland's experiment with universal Basic Income was put forward as a solution to the problem of Automation reducing the number of jobs and lowering wages. The experiment was a variation of the idea of a universal Basic Income: an unconditional income paid by the government to all citizens, whether they work or not. 2,000 unemployed people between de ages of 25 and 58 received $560 a month for two years. Finally, the Finish government decided not to extent the trail and to explore alternative welfare schemes instead.

Tax contributions by business will need to become a key lever for social welfare and national tax sustainability.

The approaches adopted by businesses will also have a direct impact on the possibility of financing new social policy instruments:

- There are concerns that digital services provided from abroad often do not pay taxes in the place where transactions take place and services are used, resulting in scarce contributions to public finances that are needed to fund public services. This tax base erosion is disturbing, as it leaves local communities with a negative impact of digitalisation, whilst repatriating the benefits exclusively to the home country of the foreign provider.

Policymakers are also concerned that such profit diversion to low-tax jurisdictions, an issue subject to profound analysis by the OECD within its Base Erosion and Profit Shifting (BEPS) workstream[19], provides an advantage for global service providers over local rivals. Tax arbitrage allows global firms to offer their services at lower rates, making the playing field uneven and making it even more difficult for smaller and local companies to compete.

Furthermore, this competitive disadvantage of local companies negatively impacts their profitability and thus diminishes their tax contribution to public finances even further. In the long run, as more transactions go online and greater profits are diverted from local economies, there could be a substantial and damaging social impact in terms of lower local national investment, employment generation and contribution to social security and pensions funds. This generates even more pressure on national budgets at the same time as digitalisation demands governments to support the digital transformation of public services, such as the education and social security systems, among others.

Technological and digital companies are already reacting to address this increasing concern. Facebook has announced[16] a policy change which will result in advertising revenue no longer being registered by its international headquarters in Dublin, but by the advertiser's national branch. This means that Facebook will pay taxes in the country where sales are made and sets a good example regarding how global digital platforms can shift to a more responsible tax policy behaviour.

Tax sustainability and financing of social welfare are a growing concern in a digitalised economy. The risk of unilateral decisions made by governments to expand their tax base by targeting digital services could materialise if businesses fail to respond to this challenge. This requires a more responsible tax behaviour by digital service providers, contributing to the wealth of those countries where their transactions take place and services are used. Fairer contributions to national budgets, could not only prevent the adoption of undesired tax measures, but also reinforce social inclusion.

Many questions remain open, but policymakers and businesses should have the same objective to work towards a human-centric digitalisation process for a sustainable and fair digitalisation of societies.

Case Study

HOW WE DO THINGS WITH TAXES

The current economic environment has placed tax contributions by large multinational companies at the centre of the debate. Telefónica is committed to acting with tax responsibility and transparency in the management of our business, as well as complying with all our tax obligations in the territories where we operate.
For every 100 euros of company revenue, 23.4 are allocated to tax payments.

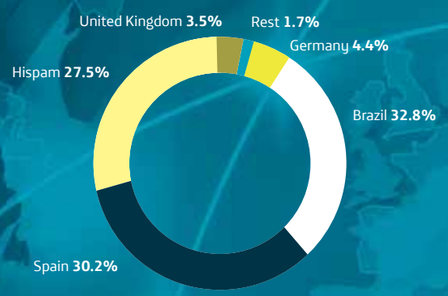
We are one of the most important driving forces of economic progress in the communities in which we are present. In 2017, we increased our contribution to the combined Gross Domestic Product (GDP) of the countries in which we operate by 52,232 billion euros, a figure which accounts for almost 0.6% of the total combined wealth generated by these countries.

We can, therefore, regard ourselves as a great enhancer of the economies of these communities, both directly and due to our capacity to generate a wealth multiplier effect by means of our activity.

Additionally, in 2017 the impact that we had on employment in these countries reflected a total of 919,035 people in a direct, indirect or induced manner. Thus, as a result of our activity, for each person recruited into our workforce, we generated an additional 7. 8 jobs in the countries in which we operate.

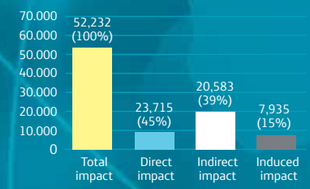
Source: Telefónica's 2017 Integrated Report.

Geographic distribution of the taxes paid by Telefónica in 2017



Impacts on GDP generated by the whole Telefónica Group

Millions of euros (%)



Total impact: Total impacts generated by corporate activity and Telefónica's expenditure and investments in the countries in which it operates.

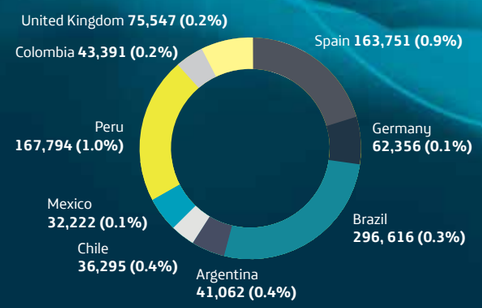
Direct impact: Impacts generated directly by Telefónica through the course of its activity.

Indirect impact: Impacts generated by Telefónica's expenditure and investments throughout its supply chain.

Induced impact: Impacts generated by the increase in consumption arising from the increase in labour income generated by direct and indirect employment.

Impact on employment in the main countries where we operate (2017)

Total of people employed (% of total local employees)



Chapter 2: At a glance

The Issue

Digitalisation and automation challenge the sustainability of today's social policies and welfare and will impact employment as well as tax contributions. The nature of work will be transformed by collaboration of machines with humans which will change our lives, societies and economies.

65% of today's children will go on to do jobs that do not exist yet.

By 2020 more than **one third** of jobs will be based on new kind of skills.

Nearly half of all the work we do will be able to be automated by the year 2055.

Sources: OECD (2016) , WEF (2016), McKinsey Global Institute (2017)

Our Belief

01. DISRUPTION IN THE LABOUR MARKET

To adapt supply and demand policy makers need to embrace adequate policies to prepare and guide societies through periods of transitions to guarantee future employability.

02. FOCUS ON EDUCATION

To avoid skills shortages people must be empowered through education. New technologies will allow lifelong learning experiences.

03. SOCIAL POLICY INNOVATION NEEDED

The changing world of work will require new approaches to social policies and welfare. Social inclusion and wellbeing of all should guide a human-centric digitalisation.

04. RESPONSIBLE FISCAL BEHAVIOUR

Digital businesses and services should contribute fairly to local communities. Taxes should be paid where transactions take place to foster sustainable digital economies.

03

DELIVERING TRUST IN DATA

This chapter:

This chapter is about data, its huge importance and the innumerable ways in which it is empowering people in their daily lives. Here, we set out our vision for building trust: transparency, security and choice and putting people in control.

DELIVERING TRUST IN DATA

The Issue

- Data is an important part of our lives. It can enrich people's experiences and opportunities, benefit businesses and advance society as a whole.
- There is currently a lack of trust. People often do not feel in control of their personal data due to a lack of transparency and empowerment.
- Security threats are growing in importance in a digitalised and connected world, endangering people and businesses.

Our Belief

- Data is a force for good and we need to build trust by helping people to feel comfortable regarding the use of their data.
- We need new data ethics. People should be empowered to decide how and when their data is used and also be able to enjoy the value of their data.
- Transparency and choice are necessary to put people in control and build trust.
- Open Data can help to solve many social and economic challenges.
- Data security and confidentiality must be assured more than ever when everyone and everything is connected. New digital experiences should be designed around keeping people's data safe and secure.
- New forms of public and private cooperation are needed, as well as additional efforts to improve the security of products and services.
- Nation States have the responsibility to guarantee the security of their citizens but also need to respect their fundamental rights.
- Cybersecurity needs to be enhanced across the entire value chain of digital products and services, as the weakest link defines the security of the whole system.

The main challenge for a sustainable digitalisation process and Data Economy will be to mitigate the risks of data usage whilst grasping its opportunities.

Communications networks are the foundation of the Internet and the digital economy, as they transport amounts of data that are growing exponentially. In an increasingly digitalised and connected world, everything we do leaves behind a data footprint: every journey, shared moment, payment sent, celebration, news, reaction, travel and fun. And behind every data point, there could be a personal story.

And it's not only about personal data: millions of sensors generate huge amounts of data about weather, climate, pollution, traffic flows, consumption of energy and other resources. With the advent of the Internet of Things (IoT), the number of objects including sensors will grow very fast, opening up new and untapped ways of improving our world through more insights based on data. IoT, automation and Artificial Intelligence (AI) are creating additional opportunities for the reconfiguration of current industrial processes and supply chains based on data.

Data is at the heart of digital growth and, therefore, privacy and security are the pillars of a healthy and sustainable digital future. Digitalisation needs to be accompanied by new and responsible data ethics.

1. The lack of trust

Data-driven services and solutions exist in a social, economic and institutional context but, for many people, they are triggering a lack of trust, increasing uncertainty and a feeling of vulnerability.

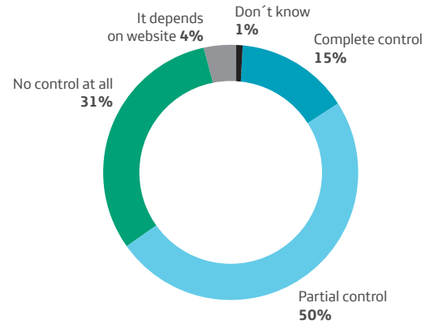
Many individuals are increasingly concerned by the loss of control over their digital lives. People are no longer sure of how their personal data is collected, stored and used, by whom and for what purpose.

Chart 1. USA - Major concerns related to privacy and security risks[17]

Source: NTIA Digital Nation Data Explorer, 2016

Chart 2: EU - Perception of control over data shared online

How much control do you feel you have over the information you share online?



Source: Eurobarometer 2015

The less comfortable people feel about how their data is being used, the less willing they will be to share it. For a society with a growing dependence on digital technologies, this is a considerable issue and can even become a barrier to digitalisation.

Building trust in relation to personal data could be improved by tackling the following:

- **Transparency:** people should be allowed to access all the information they generate.
- **Putting people in control:** people should have access to tools that enable them to reap the full benefit of their personal data in simple and convenient ways.
- **Choice:** people should have meaningful choices about how and for what purpose their data is used.
- **Data security:** in order to guarantee privacy, people's data need to be kept safe and secure.

2. Data as a force for good

Data underpins new experiences, new services, and is transforming entire industries. Without access to data, progress would stop. More than ever before, we have access to information and metrics that can make the world more efficient, resourceful and informed.

Open Data represents an important opportunity to solve many of the current social and economic challenges we face, such as the reduction of energy consumption and pollution, the optimisation of traffic and the improvement of healthcare.

Administrations, companies and citizens should all work closely together to build an ecosystem that can capitalise on Open Data.

We consider that public data should be:

- Available for everyone without restrictions.
- Available and accessible online, ready to use.
- Shaped for its reuse and redistribution, even for transformation.

Data enriches people's lives, but can also help organisations to make better decisions and improve the quality of everyone's life:

- Transport can become smarter, reducing congestion, improving air quality and also minimising traffic accidents and victims.
- City infrastructure can be developed with better insight into people's needs, making all civil services more efficient and saving money that could be allocated to other needs.
- Epidemics and natural disasters can be better managed, saving human lives.
- Migration due to climate change can be monitored in order to measure its impact and plan actions accordingly.
- Diseases can be diagnosed earlier, making better healthcare possible, increasing quality of life for patients and their families.

Data can enrich people's lives, benefit businesses and advance society as a whole. Indeed, data analytics will be crucial for the transformation and progress of societies and in creating a better future.

Case Study

LUCA: DATA-DRIVEN DECISIONS

Transforming transport services

Crowd location data combined with data from public transport services is informing the "when", "where" and "why" of mass movements, helping to improve public transport infrastructure across cities. A better planning and execution of public transportation services could mean millions in savings and, more importantly, a dramatic reduction of traffic accidents and victims. In big cities, air pollution is a public health problem of the first magnitude. Mobile data is helping to forecast when air quality metrics are likely to worsen, allowing authorities to act accordingly.

Transforming tourist services

Helping all stakeholders (private companies, public administrations, local agents, technological centres and universities) to build synergies, work together and reach a consensus on how to make tourist destinations more attractive, while also improving the quality of life for local residents.

Banking the unbanked

We enrich lives by providing access to financial services for customers who do not have a bank account or do not have enough banking history. This problem affects many of our customers in Latin America. Credit scoring based on mobile data is a service that we offer through "LUCA Scoring." We can help our customers by sharing some of their information with third parties, thus enabling them to obtain access to financial services.

Preventing Bank Fraud

Through real-time services, we help to protect customers' transactions and avoid fraud by verifying customers' identities and confirming that they are really at the same location as a transaction taking place.

Big Data for Social Good. Reducing the impact of natural disasters and predicting the spread of disease

Mobile data is being used in the aftermath of natural disasters, such earthquakes and major floods, to understand the event's impact on population concentration and mobility, and to guide relief operations. In the case of flooding, mobile data help to determine the relationship between the timing and intensity of rainfall and the delay before its impact on each area, thus yielding vital insights for future evacuation and relief planning. The value of data related to emergencies is increased even further when it is provided in real time.

In this sense, Telefónica announced a collaboration with UNICEF through their Magic Box initiative – a Big Data for Social Good platform which collects real-time data, combining and analysing aggregated and anonymised data from private sector companies and other existing public datasets relating to climate, GIS (UNICEF's Geographic Information System), and socioeconomic and epidemiological information. Magic Box was launched in 2014, when it was used to respond to the Ebola crisis in Western Africa, and more recently to the spread of the Zika virus.

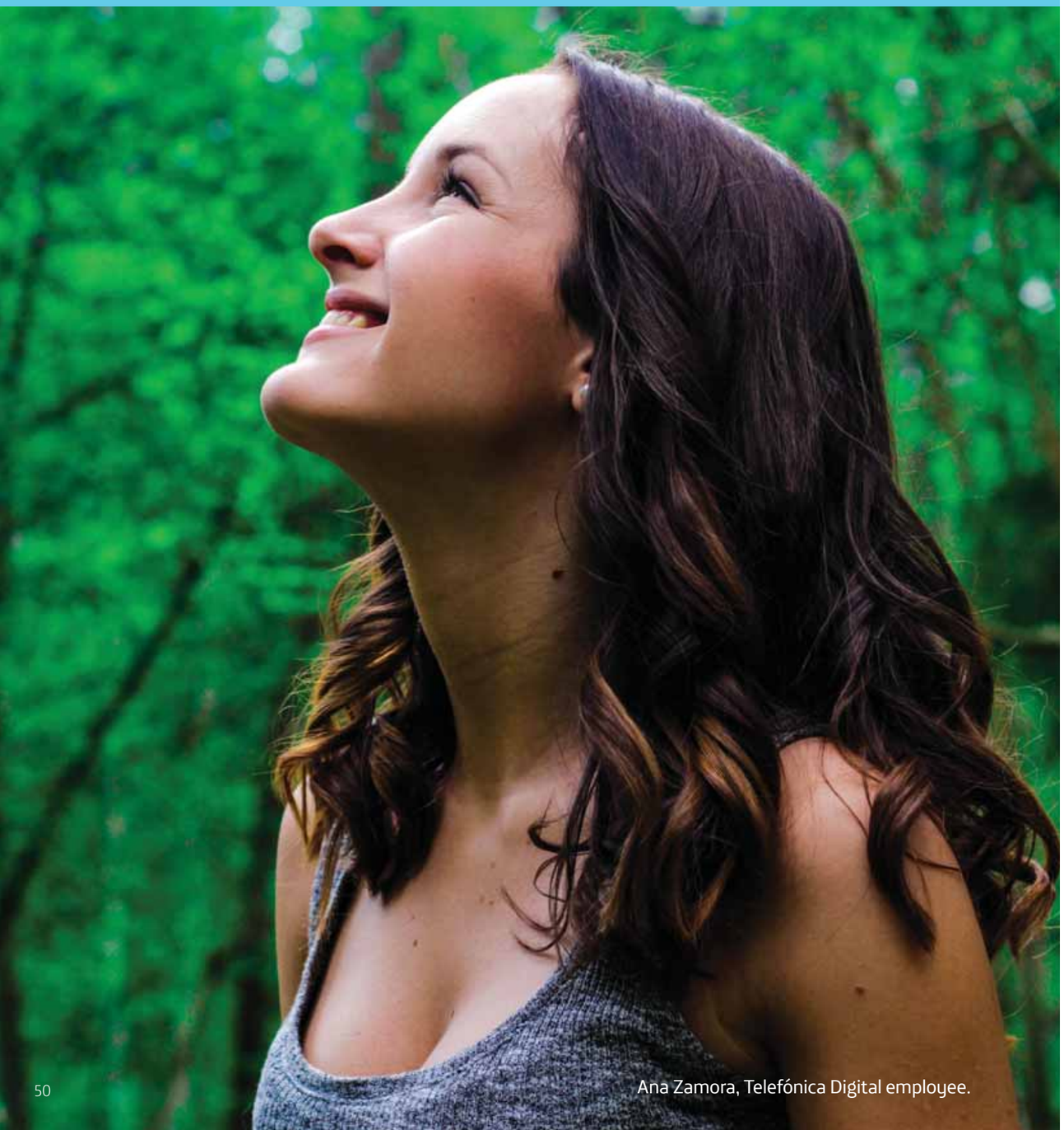
The response to public health emergencies and natural disasters can be optimised by unlocking the value of real-time data, contributing to protect children and save lives in an increasingly unpredictable world.

Measuring fulfilment of the United Nations Sustainable Development Goals (SDGs)

Mobile data and other indicators related to telco services are a valuable resource to infer the progress on fulfilment of SDG goals; a key challenge addressed by the UN. For example, the use of text messaging is correlated with literacy levels among populations and the volume of international calls between countries reveals their level of mutual trade.

"A more human-centric approach is needed which empowers individuals to control how their personal data is collected and shared".

Giovanni Buttarelli, European Data Protection Supervisor



Ana Zamora, Telefónica Digital employee.

3. Building trust in data through new data ethics

Given the huge value of data-driven services for people and society, data ethics are becoming increasingly important, embracing responsibility, transparency and choice.

Data is powering the digital economy, but to have value, data must be put to work, not locked away. The power and number of opportunities that data presents grow rapidly when different types of data from various sources are combined. For example, data about non-human activity, such as weather and environmental data, can provide significant value, especially when combined with other information.

At this point, it is relevant to bear in mind the differences between personal and non- personal data. **We can consider as personal data any information that is linked to a customer and enriches the understanding of their reality. Non-personal data refers to information that is not linked to any specific customer.** For example, anonymous data is non-personal data. Much of the value and benefits of data usage can be harvested by using non-personal, anonymised data and insights based on data, thus respecting people's privacy[22] (see case study on Luca).

Building trust in data is an ongoing process. **Better transparency should mean being open with people about what data is being collected, when it is collected and how it is used.** Common approaches are being reconsidered, so that long, complex and generally unread "terms and conditions" may cease to pass for transparency[23]. In order to achieve a meaningful level of transparency, people should be offered access to their personal data in a way that is simple and easy to use.

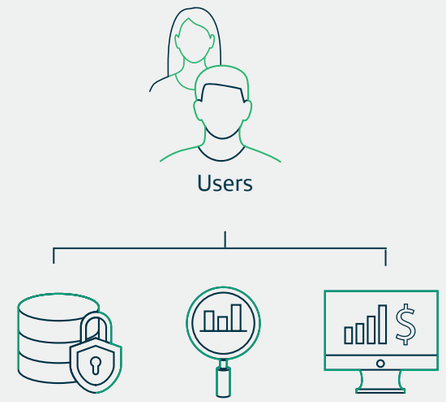
In that regard, Big Data and AI also represent an opportunity to improve transparency. Companies can use these technologies to build a personal relationship with each individual customer, tailored to their needs and preferences. In other words, they can provide people with better access to their own information, helping them to understand their options and giving them the ability to make personal choices. Such transparency is related to pricing and billing conditions, technical service features, liabilities and, most importantly, how personal data is collected, stored, processed and used[24].

Chart 3: Personal info to anonymous insights

People should be empowered with their personal data, giving them control over how it is used. This means helping them to understand their data and giving options about its use.

Jessica Rodriguez, Daniel Souto and Marieli Granato, Telefónica's Brazil employees.

Chart 4. How we do things.



1. Data must be safe and secure. Data security and customer privacy are the foundation of our business and our primary consideration when designing our services and collaborating with partners.
2. People should be able to decide how their data is used and remain in control of it. We will provide simple tools to manage their data-sharing choices, enabling easy access to their data, helping them decide how it is used and highlighting the associated risks and benefits.
3. We will make is easy for our customers to unsubscribe from services if they change their mind.
4. We will provide choices beyond the usual "take it or leave it" terms and conditions.
5. People should benefit from their data. Subject to their approval, we will use our customers' data to offer them simple and helpful services. We will provide personalised experiences and services. We will innovate with third parties to provide new data-enhanced services and generate value for our customers: value for themselves.

Data protection laws ensure fair processing and transparency practices, but the application of these concepts can be ineffective, since the global nature of data flows creates a complex situation for enforcement beyond national borders. Better international harmonisation of data protection and enforcement would help. In fact, cross-border data flows are increasingly regulated at international, regional and national levels to help protect people's privacy (see chapter 5 Modernising rights and policies).

A further step is to share the value of people's data with them. Such value may be realised in terms of improving digital products and services, making them better and simpler to understand. This also involves finding better ways to educate people about how their data is being generated and used. Transparency is a prerequisite for this control because it enables an understanding of the available choices. True choice is not possible without transparency.

People may also be presented with opportunities to use their data to generate value for third parties. Telefónica is developing a range of partnerships in order to allow our customers to put their data to work for them.

In addition, data portability needs to be improved. People should be able to use data for their own benefit across different platforms of their choice. For this to happen, people will need tools that facilitate access to the data they generate when using digital services and that enable them to transport that data.

In general, a good practice to achieve better privacy is "privacy by design". This ensures that privacy risks are fully considered and mitigated at the design stage of products and services.

Case Study

AURA, THE NEW RELATIONSHIP MODEL WITH OUR CUSTOMERS

Aura

Telefónica has developed Aura, an Artificial Intelligence (AI) service which aims to establish a new relationship model with customers by using personal data and cognitive services on top of our telecommunication infrastructure.

Aura aims to provide our customers with four superpowers:

- **Simplifying.** Performing actions and sending commands to the network and services quickly, just by talking to the tool.
- **Running algorithms** on customer datasets to infer insights that enrich their experience with Telefónica's services.
- **Empowering,** providing transparency and control over data generated by using Telefónica's services.
- **Discovering** what customers can do with the data they generate (proposals to use data for a purpose in exchange for a benefit/value, protecting privacy).

Aura's value proposition improves over time; it will be a trust path for customers: Aura will start with simple and enhanced ways for customers to interact with the company's existing services and will subsequently increase customers' benefits through new services, allowing them to control and exploit their own data within the telco or with third parties.

Aura uses cognitive intelligence to understand customers' needs and help proactively them by transforming available information into valuable knowledge. This knowledge about customers evolves over time, as they use Telefónica's products and services, while always leaving in the customers' hands to decide which of this knowledge the company maintains.

1. **Aura is a cognitive intelligence platform that listens to Telefónica's customers,** learning from them and enriching their experience of Telefónica's products and services.
2. Aura offers **a new way for customers to establish a relationship with Telefónica, introducing natural language capabilities:** technology adapted to people, not the other way round.
3. **Aura will empower people,** providing new ways for them to use their data, such as improving and personalising Telefónica's services and helping them to discover new ways to put their data to work for their benefit.
4. **Aura will give customers the power to decide** what data can be used in this knowledge generation process.
5. As **a cognitive intelligence platform,** Aura can be accessed through different paths (proprietary channels like our Mobile app, third party channels like Facebook Messenger and even through other assistants).

Aura is focused on helping customers get more from Telefónica's services and technology.

Digital transformation should put people first. It is enabled by disruptive technologies that both consume and produce data. Companies must protect and respect the data generated by users. Empowerment is key to a successful and trusted digital transformation. This can transform society and create a better future.

In short, Telefónica believes that platforms and services that adopt strong ethical principles, including transparency and control, will command trust and confidence and thus achieve the greatest and most sustainable success.

4. Rights and security

Networks and information systems play a crucial role in our current society. Their reliability and safety are essential for economic and social stability. Cybersecurity incidents can interrupt economic activities, generate considerable financial losses, undermine user confidence and cause great damage to a State's economy.

By 2022, 29 billion objects will be connected[18]. As the IoT grows, cars, planes, homes, cities and even animals will be interconnected, so the number of incidents affecting citizens' privacy and cybersecurity is also set to increase. Insufficient attention by the public and private sectors to cybersecurity could undermine trust in the Internet and jeopardise its ability to act as a driver of innovation.

Security and rights are inextricably linked. National security activities, like mass surveillance, need to guarantee human rights, which should be upheld by both public and private sector organisations. A stronger global dialogue, along with cooperation and standards, are needed in order to manage the inherent tension between cybersecurity and fundamental rights.

Initiatives by governments[19] and private companies are underway to promote annual transparency reporting regarding[20] government requests for data.

One example is the Global Network Initiative (GNI)[21], which takes a multi-stakeholder approach.

Others are more government-based, working within the United Nation system, or academic, like Ranking Digital Rights[22].

Such initiatives support collaboration between the public and private sectors for a healthier and sustainable digital ecosystem while developing global standards for transparency reporting by companies and government accountability regarding cybersecurity activities.

Keeping people's data safe should inform and shape the design of a new digital experience. Preventing data breaches should be a priority for every company. The complexity of technology, cyber threats and the potential for human error can lead to information being lost, deleted or falling into the wrong hands. Risk management is a continuous process and a prerequisite for building confidence.

Public and private cooperation, along with trust building and information sharing, are essential in order to anticipate attacks. Likewise, this cooperation is essential for incident management, in order to mitigate the impact and reverse the effects of any incidents.

Encryption has emerged as an essential security technology and is now widely deployed to guarantee data privacy. While it is a key security technology, it is equally important that it does not frustrate the efforts of public authorities to protect national security and public safety. Security and policy authorities like the FBI argue that they are ultimately unsuccessful to access encrypted information with legal authorisation, and call for a solution to this urgent public safety issue. It is vital that the impact of technologies on different rights is properly assessed and the principle of

proportionality is respected. Ultimately, lawful and appropriate processes need to be defined to grant authorities proportionate access to information in a similar way as it happened with traditional telephony in the past.

5. Security in products and services

Going forward, the growth of the Internet of Things (IoT) will enable the connection of all devices and this greater dependency on technology is going to generate new security concerns that will require a more comprehensive and resilient security environment.

Society is adopting technology faster than it can secure devices, so risks will be exponentially multiplied despite the efforts made and best practices applied by the industry.

Additionally, the level of protection of digital products and services regularly declines over time. Therefore, all players across the entire value chain must strive to incorporate security measures into their products, from the first stages of engineering to the last (security by design). Furthermore, product manufacturers must maintain a strong commitment with security and respond quickly to deliver patches that solve new vulnerabilities as soon as they become aware of them. A clear security maintenance policy for devices should be a key topic of any contractual relationship.

The cost of security and the need to shorten time-to-market cannot be an excuse to avoid building the safe and secure products and services that consumers demand and need. It will be important to create a level playing field to enhance levels of cybersecurity across the entire value chain like, for example, the new EU NIS Directive does. Current regulatory asymmetries should be modified by adopting a "same service, same rules" approach for all companies, seeking to protect their users when they access any product, service or device. The IoT will interconnect all products and will turn all companies into technology companies. Any cybersecurity approach should, therefore, have a holistic and horizontal focus.

It is important to explore new ways of providing better cybersecurity:

- Cybersecurity self-certification of products, apps and services based on stakeholders' best practices and recommendations would set common standards and improve transparency for consumers and businesses.
- Consumers should have the possibility to update their digital products and services to the latest security standard within a reasonable timeframe.
- Improved awareness and knowledge by consumers through campaigns and better education on cybersecurity.

Case Study

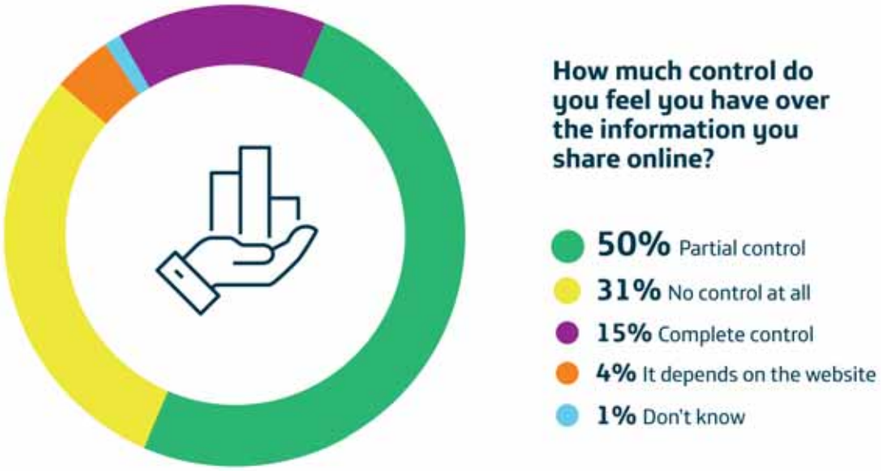
WANNACRY RANSOMWARE

- On May 12th 2017, 300,000 computers across 150 countries were frozen by a ransomware attack known as WannaCry.
- The attack crippled several hospitals in the British Public Healthcare System and infected a significant number of computers in multiple companies. China and Russia in particular were hardly affected.
- Spain was one of the first countries to acknowledge that it had been targeted by the ransomware, due to Telefónica's quick response confirming the attack the same morning its computers were infected.
- From the beginning of the incident, Telefónica contacted the authorities to inform them about the situation and collaborate in its resolution, opening an investigation and alerting other companies.
- Internally, security protocols were activated and none of the customer network's services were affected. The impact of the incident on the internal network was contained and normality was restored within 48 hours.
- Telefónica decided not to keep quiet in an exercise of transparency that helped governments and other companies to coordinate actions and mitigate the ransomware's effects.

Chapter 3: At a glance

The Issue

Data can enrich people's experiences and opportunities, but people often do not feel in control of their personal data and security risks are increasing.



Source: Eurobarometer (2015)

Our Belief

01. NEW DATA ETHICS

A human-centric approach should empower people to decide how and when their data is used.

02. TRANSPARENCY AND CHOICE

People should have access to their data and to all the information generated by them while having meaningful choices to be able to enjoy the value of their data.

03. NEW FORMS OF PUBLIC AND PRIVATE COOPERATION

New forms of public private cooperation as well as additional efforts to improve the security of products and services are needed.

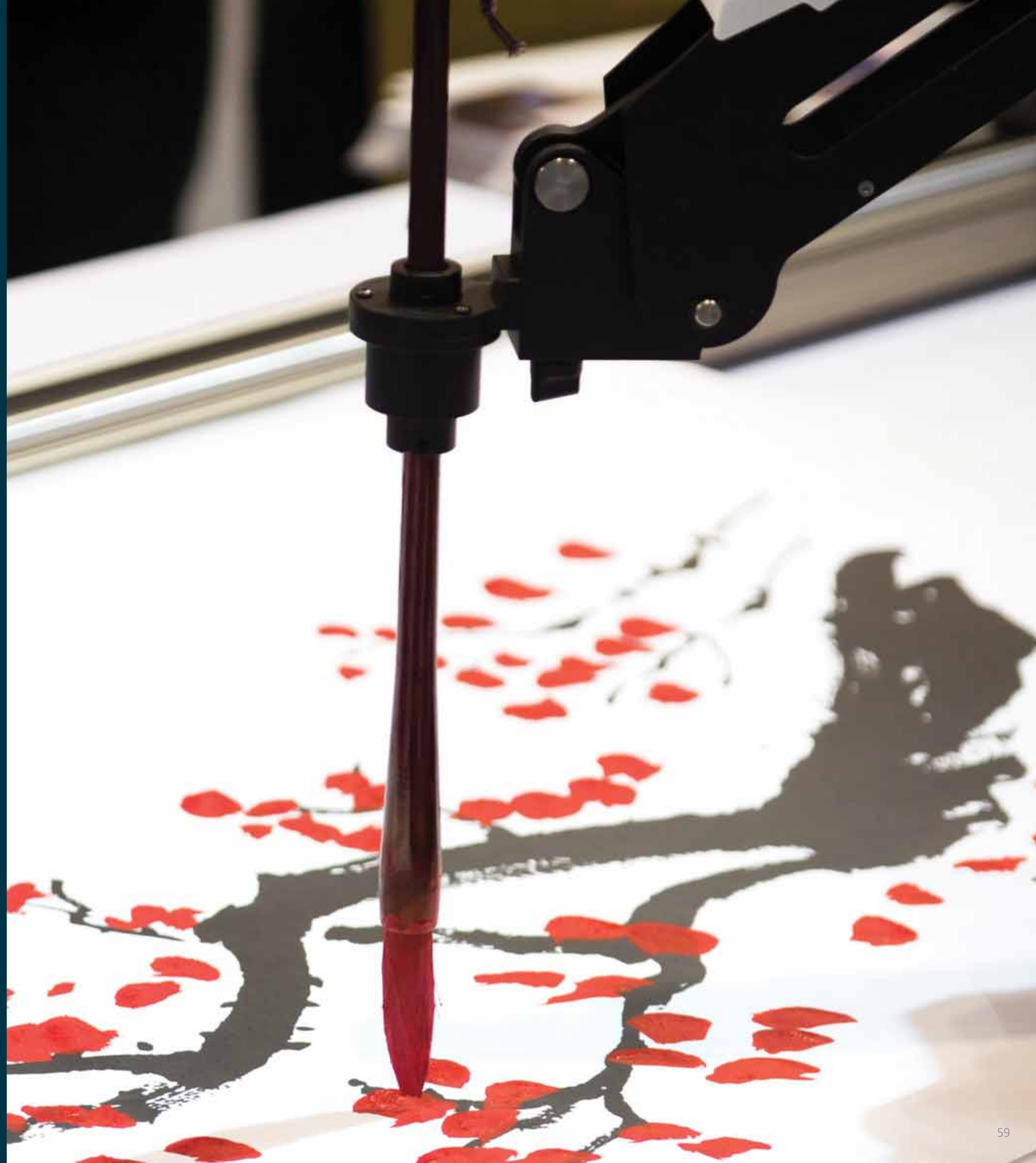
04. GUARANTEEING SECURITY

It will be important to create a level playing field to enhance cybersecurity across the whole value chain.

04
SUPPORTING FAIRER PLATFORMS AND ACCOUNTABLE ALGORITHMS

In this chapter:

You will learn why global platforms should adopt a responsible and accountable behaviour, to ensure a sustainable open Internet experience and prevent that privileged access to huge amount of data, Artificial Ingelligence (AI), algorithms and new technologies transform platforms into enduring bottlenecks.



SUPPORTING FAIRER PLATFORMS AND ACCOUNTABLE ALGORITHMS

The Issue

- A small number of global platforms are becoming the new gatekeepers of people's digital experience with a disproportionate influence on their lives and even the ability to shape public opinion.
- Their privileged access to huge amounts of data and the adoption of data-driven Artificial Intelligence (AI) and algorithms have the potential to increase their influence, ultimately creating persistent and essential digital bottlenecks that shape users' digital experience and threaten competition.
- The global nature of digital platforms creates additional challenges regarding enforcement of national rules on taxation, security, privacy and consumer protection.

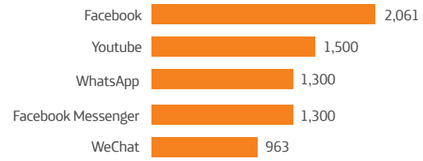
Our Belief

- Societies demand respect for their laws and values from all businesses, as well as fair contributions to national welfare, employment and taxes.
- Digital platforms should match their great power with increased responsibility by adopting ethical principles, make better choices and increase transparency for users.
- Policymakers and regulators should hold platforms accountable and insist on defending the application of existing values, norms and rule of law.
- Data is a competitive asset with real value and should be considered as such by authorities during their supervision of markets.
- Use of Artificial Intelligence (AI) and algorithms should be human-centric, ethical, and avoid undue discrimination and anti-competitive outcomes.
- Blockchain may provide new possibilities to keep digital markets competitive by fostering decentralisation, could help with better market supervision by authorities and give people better control over their data.

1. The Internet of platforms

Our digital experience circles around a few digital applications and services. People may have many applications installed on their smartphones, but in reality they spend most of their time on only a handful[32]. These applications serve to access information and entertainment, communicate with others and buy products.

Chart 1. Number of active users (in millions)



Google's Android[24] and Facebook[25] each have more than 2 billion active users –over half of Internet users–, with Facebook having three of the top five apps by number of active users (Facebook, WhatsApp and Facebook Messenger), and Google having the two most used search tools, its Google search engine and YouTube's.

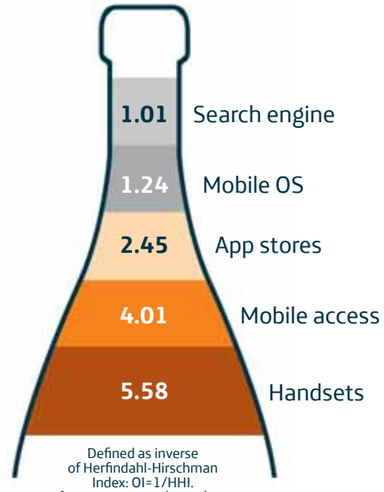
These globally used applications and services have become the main drivers of digitalisation, powering the global expansion and growth of smartphone-based Internet usage.

They access and capitalise on huge amounts of data, a fact that is often not fully grasped by their users, who erroneously consider these services to be free.

These applications and services run on digital platforms owned by the same companies that have become the main drivers of digitalisation, acting as hubs of the managed data. Moreover, as platforms usually integrate several vertical markets, users may find themselves locked into a closed ecosystem. Indeed, some platform owners bundle devices, operating systems, app stores and other services, such as communication, video and e-commerce. Due to this vertical integration, platform owners usually compete with third parties in downstream markets and have the ability to discriminate in favour of their own services, apps and products in those markets, a situation[26] that has already raised many concerns by competition authorities[27].

Additionally, network effects are creating "winner-takes-all" market dynamics, where the most widely used application, service or platform is continuously becoming more attractive for users, leading to monopolistic markets with only one or two players and services, further reinforcing dominant positions of such vertically integrated players.

Chart 1. Digital Market Openness Index (Brazil)



Market shares

Search engine	
Google	99.5%
Yahoo	0.3%
Bing	0.2%

Mobile OS	
Android	89.1%
Mobile OS: Android	10.3%
Mobile OS: Microsoft	0.5%

Handsets	
Samsung	52.7%
Lenovo-Motorola	15.4%
Huawei	11.4%
LG	13.6%
Apple	14.3%
TCL-Alcatel	17.5%
ZTE	5.2%

App stores	
iOS	55.3%
App Stores: Google Play	27.6%
App Stores: Other Android	16.3%

Mobile access	
Telefonica	31%
Telecom Italia	24%
Telecom Americas	25%
OI	17%

Source: Telefónica analysis based on data from App Annie, Strategy Analytics, Anatel and Stat Counter.

The combination of new data processing technologies based on AI, automated decision-making processes by Machine Learning and massive access to data have the potential to further reinforce the dominance of just a few digital platforms. AI only works well with access to massive amounts of data and information. Today, only the major digital platforms are in a privileged position to access and use such great "data lakes", enabling them to offer new, customised and better services. This will add another barrier which will make disruption by smaller competitors increasingly unlikely, if not impossible[28]: there seems to be an increasing degree of stability and concentration in the Internet. In the early years, there was a significant rotation of leading businesses, with eight of the top 15 US online services providers from 1999 no longer existing or being absorbed into another company by 2009. By contrast, six years later, eleven of the top 15 in 2009 were still among the top 15 in 2015.

2. The issue of digital platforms and bottlenecks

It is not necessarily digital platforms themselves that are creating concerns, but rather **the combination of network effects, access to huge amounts of data and the use of AI and algorithms that are in some cases causing digital platforms to become gatekeepers and bottlenecks.**

Such platforms can abuse their powerful position as gatekeepers to control the digital experiences of people globally and, therefore, create digital bottlenecks.

Other companies have no choice but to deal with them in order to be able to run their business in an increasingly digitalised economy, making some of these platforms essential elements of most commercial and economic activity. Even governments are becoming increasingly dependent on them, as they turn to platforms like social media or app stores to ask for help in imposing restrictions and limitations. This creates major constitutional issues in democratic societies, while additionally highlighting the power of such digital gatekeepers in controlling access and activities on their platforms and how indispensable they have become to exert such control.

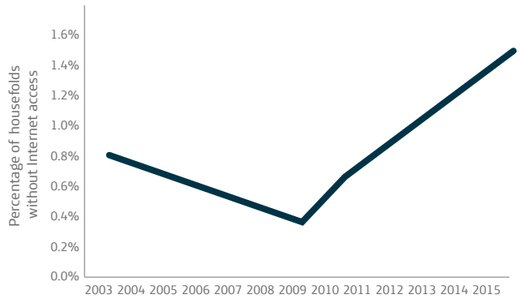
Digital platforms are becoming gatekeepers and bottlenecks, controlling the digital experiences of people, businesses and governments globally.

In addition to such concerns about dominance and power, other issues related to digital platforms are increasingly being raised:

- The global nature of many popular platforms can lead to situations where tax contributions are not made in the local communities where transactions take place and digital services are used. Additionally, security, privacy and consumer protection rules may not be enforceable against global platforms and services, decreasing consumer protection and lowering privacy standards. All these issues create an uneven playing field for local companies, which must comply with local laws (privacy, consumer protection, etc.) whilst providing a competitive advantage to such global players.
- Competition law and procedures are not prepared to tackle challenges arising in digital markets with new, digital, data-based business models due to the unprecedented speed of market developments.
- Individuals and even administrations and supervisors lack the necessary knowledge and understanding of digital business models which are often based on access to and use of massive amounts of data by AI and algorithms.

These issues are a threat to the sustainability of digitalisation because they generate unease, lack of trust and unwillingness to provide access to data. That puts at risk the positive contributions which digital platforms can bring to societies.

Chart 2. Privacy or security concern as main reason for household not online[29]



Source: NTIA Digital Nation Data Explorer, 2016

"The web that many connected to years ago is not what new users will find today. What was once a rich selection of blogs and websites has been compressed under the powerful weight of a few dominant platforms. This concentration of power creates a new set of gatekeepers, allowing a handful of platforms to control which ideas and opinions are seen and shared".

Sir Tim Berners-Lee, founder and web inventor

3. The clash of global platforms with national jurisdictions

The global nature of digital platforms creates challenges regarding taxation, security, privacy and consumer protection, areas that are mostly subject to national policies and legislation.

The world has become a global marketplace for companies and communities, both small and large, with digital platforms of all sizes offering services across borders to a global customer base. As such, cooperation at global and regional levels remains a priority. Most of these platforms are legally constituted in a single country, where they are subject to local legislation and regulations, such as those related to privacy, consumer protection, the powers of legal enforcement agencies and taxation. However, they provide services to users in jurisdictions across the world.

This clash of global services and national jurisdictions raises significant issues:

- **People:** when using similar digital services, people may be subject to different rights depending on where the service provider is based, thus generating confusion and uncertainty. Even if it is clear how to exercise their rights, it may not be feasible to start a legal procedure in a foreign country.
- **Nations and governments:** legal enforcement agencies and courts may not be able to enforce decisions if there is no local legal representative. Defined international legal procedures, like MLATs, are too inefficient and slow for a digital and globalised economy.
- **Global businesses:** they may be confronted with diverging legislations, forcing them to decide whether to comply with the law in their home country or that in another country where their service is delivered, thus posing a significant legal risk for the company, its operations, managers and representatives.

In many societies, there is a growing perception that **global digital companies do not make a fair contribution to the countries where they operate and provide their services (see chapter 2).**

Digital platforms are, in some cases, becoming detached from control and national regulations. They are defining the terms and conditions of their services and deciding how they are implemented and enforced by themselves. Transparency and accountable processes for redress of decisions and complaints are often lacking or insufficient. Global digital platforms can dictate the rules which customers need to accept, and reserve for themselves the right to decide about enforcement of legal obligations on their platforms. Concessions are often only made under strong pressure from users, public opinion and administrations, if at all. Some platforms are responding to concerns by changing their behaviour and implementing self-regulation[30], but more should be done to avoid further backlash by societies and policymakers.

Jesús Gil, Rafael Muñoz and Angélica Roa, Telefónica's Venezuela employees.

Case Study

THE UNEVEN GLOBAL DISTRIBUTION OF THE APP ECONOMY

Good examples of two-sided markets are app stores, which provide perhaps the easiest and fastest way to start a digital business. Once an app is created, the developer only has to upload it to an app store which takes care of the rest: worldwide sales, storage, discovery, distribution, delivery and payments. It is an ecosystem which has grown to be worth billions of dollars in just a few years.

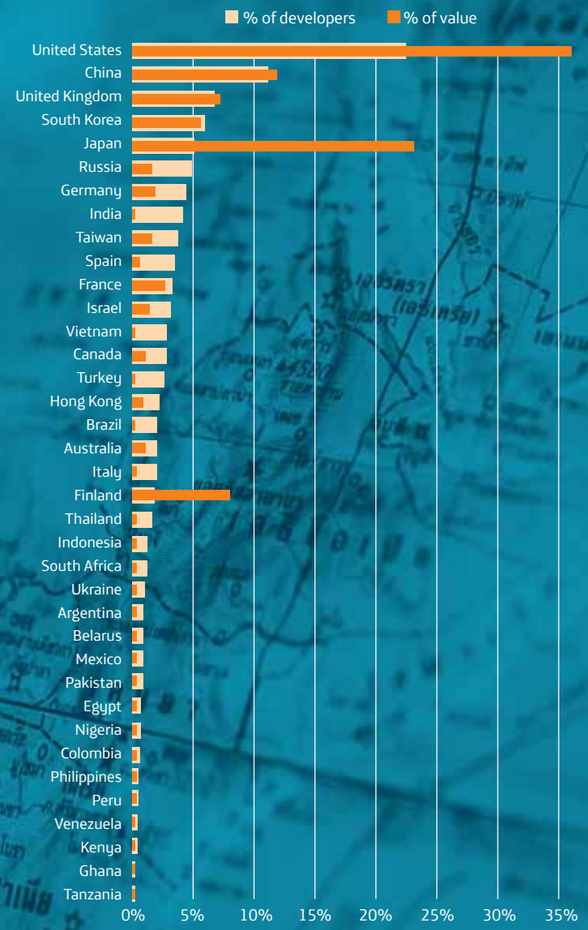
Nevertheless, a major concern raised is that the **value of the app economy is not equally divided across geographies.**

Developed countries, and especially the U.S., capture a vast amount of value from apps, while developing countries – where the majority of Internet users live – obtain just a very small percentage:

- A country like Brazil has half the number of Internet users but captures only a tenth of the value from the app economy in comparison to the U.S.
- Even China, which ranks second globally with a 10% share of value, has a considerable lower share as it hosts twice the number of Internet users of the US, but only captures a third of the value.

Sustainable, global, digital development will require a more balanced distribution of the app economy between the global south and north.

Relative share of developers and value capture across 37 markets.



Source: Caribou Digital (2016)

4. The importance of Artificial Intelligence and algorithms

Algorithms are the engines within platforms and a key factor that shapes the digital experiences of users. These algorithms decide what people read on social media, what they find when searching the Internet and app stores and what products or content is recommended to them by e-commerce and video platforms. This puts them increasingly into the focus of regulators and policymakers. Algorithms are also key to AI and Machine Learning processes.

Artificial Intelligence

AI technologies trained from massive amounts of data are able to learn from patterns and eventually can make autonomous decisions. Development of advanced AI systems would not be possible without access to huge amounts of data (such as pictures, voice recordings, etc.).

AI can offer great benefits to society. For example, it helps to obtain better medical diagnostics by analysing images of skin lesions which, combined with patients' health data, provide doctors with objective data for melanoma and skin cancer detection. Technology not only accelerates the detection process and thus increases the survival rate, but it also reduces the number of unnecessary biopsies, making the process less stressful for patients while significantly reducing healthcare costs[31].

However, AI also creates relevant challenges. For example, some applications are powered by algorithmic pricing whereby sellers set their prices using computer algorithms. Travel websites and e-retailers have already adopted algorithmic pricing strategies, which can make them more competitive and potentially increase their revenue. This can create significant challenges regarding accountability and competition analysis when going a step forward: pricing based on Machine Learning. Such systems could eventually even learn to collude on prices, an illegal practice where competing businesses agree to fix market prices, if this is the most efficient pricing strategy between competing platforms. In that case, who should be held responsible for such illegal collusion? How can this outcome be prevented?

Even greater challenges will come when AI evolves to replace people in decision-making processes. Once machines start making their own decisions, this will have massive ethical implications:

- Faced with a clearly predicted collision, should an autonomous car opt to save the vehicle's occupants by swerving onto the pavement or else protect a group of school-children playing on that side of the street?
- Can AI-based recruiting processes take what are supposed to be most efficient decisions if they result in discriminating minority groups or other actions that unduly discriminate groups of society? How can it be prevented that machine-learning systems, e.g. used in companies' recruitment processes, inadvertently start to discriminate candidates based on biased data or – even more complex to detect – a combination of information (such as school attended, home address, etc.) that may indirectly reveal sensitive data, such as race and gender?
- What should be done if autonomous AI systems deny control over themselves to their creators and owners?
- Who is responsible for an AI system's decisions? The algorithm's designer, its manufacturer, its seller or the final owner?
- Since data used for training determines how AI operates, how do we ensure that data used for training is not biased and thus results in replication of unfair behaviours observed in real life?

Societies and decision-makers will need to reflect on these complex issues. A wide range of stakeholders should be involved in finding more human-centric and ethical approaches to AI development.

Watchdogs, NGOs and consumer associations are already stepping up their knowledge and activities related to AI and algorithms. In Germany, AlgorithmWatch was founded already in 2015 as a non-profit research and advocacy organisation to evaluate and shed light on socially relevant, algorithmic decision-making processes. The organisation has developed "The ADM Manifesto", proposing a set of principles for an accountable governance and use of algorithms.

In the same way as environmental impacts of production are today seen as a corporate responsibility, businesses will be held accountable for the impact of AI on societies.

Businesses could do so by:

- Implementing in-company AI ethics committees to provide oversight and guidance for the company's AI initiatives. AI start-up, Lucid, took the lead by creating an Ethics Advisory Panel within the company[32], an example followed by other like Microsoft with its AI[33] and Ethics in Engineering and research (Aether) advisory panel.
- Developing industry partnerships to formulate and share best practices, improve people's understanding and openly discuss the benefits and challenges of AI. Partnership on AI has gathered wide representation from AI industry leaders with this aim.

Fake News

The rising prevalence of fake news on social networks and media has become a global concern for individuals and governments. Social media is now the main source of information for many people in the U.S.[34], playing an increasingly decisive role in political processes. Social networks have given social movements a quick and inexpensive method of disseminating information and mobilising people, for example playing an instrumental role in the success of the anti-government protests that led to the fall of regimes during the "Arab Spring"[35]. But social media has recently also played a significant role in the US election, where it is claimed that Russian operatives bought over 3,000 social media ads[46] with the aim of influencing voters' decisions.

This particular use of fake news is seen as the most harmful because of its impact on democratic processes and elections. The information people see and read shapes their opinions and, ultimately, influences their vote. Cases like the last US general election, France's presidential election and the UK's Brexit referendum have shown that the targeted use of fake news via social media can have an impact on democratic processes.

Algorithms play a decisive role in spreading fake news. It is an algorithm that decides who will see which news and information, based on interests and other information on users collected previously. This greatly enhances the effectiveness of fake news by targeting users that are receptive to them and, accordingly, more willing to share them again, multiplying their effect and visibility.

Due to public and political pressure, global platforms have shown a willingness to take action: from publicly starting to disclose information on the reach of fake news[37], to hiring staff devoted to checking news[38]. However, these measures have been criticised for their limited impact and potential negative effect on freedom of speech through censorship without proper judicial overview.

Therefore, other solutions to address this problem have been put forward:

- Social media should be regulated as traditional media and broadcasters, following disclosure obligations on political ads.
- Allowing users to choose whether their news feed is sorted chronologically or in another, more objective way, or prioritised by algorithms.
- Reduction of anonymity on social platforms by requiring verification of users' real identities in order to enhance their accountability.

Going forward, this situation will most probably require the application of various measures, from improved transparency and disclosure as in traditional media, to better control by social media platforms. However, it seems that changes to the algorithms that make fake news visible to users will be required in order to have a scalable and sustainable solution to prevent them being spread. **Additionally, it may be necessary to give users greater choice about how they want to visualise information**, e.g. filtered by algorithms or not, and also use specific algorithms that are able to detect fake news and provide alternative content, in order for social networks to become more reliable sources of information.

Improved responsibility, accountability and transparency are basic principles that should guide solutions to the fake news conundrum.

Virtual Assistants: the new app stores?

The main channel to access digital information, applications and services has changed over the last years, from the World Wide Web and Internet browsers to applications running on smartphones. **By 2021, revenues from app stores[39] are expected to be five times greater than those from the music industry[40] and double Internet TV and video revenues[41].** At the same time, app stores and operating systems are highly concentrated and globally dominated by just two companies, making them bottlenecks of the digital experience (see chart 1). This high concentration of apps stores and operating systems has already generated various dominance and control issues. (see case study " Why are people concerned with App Stores?)

Case Study

WHY ARE PEOPLE CONCERNED WITH APP STORES?

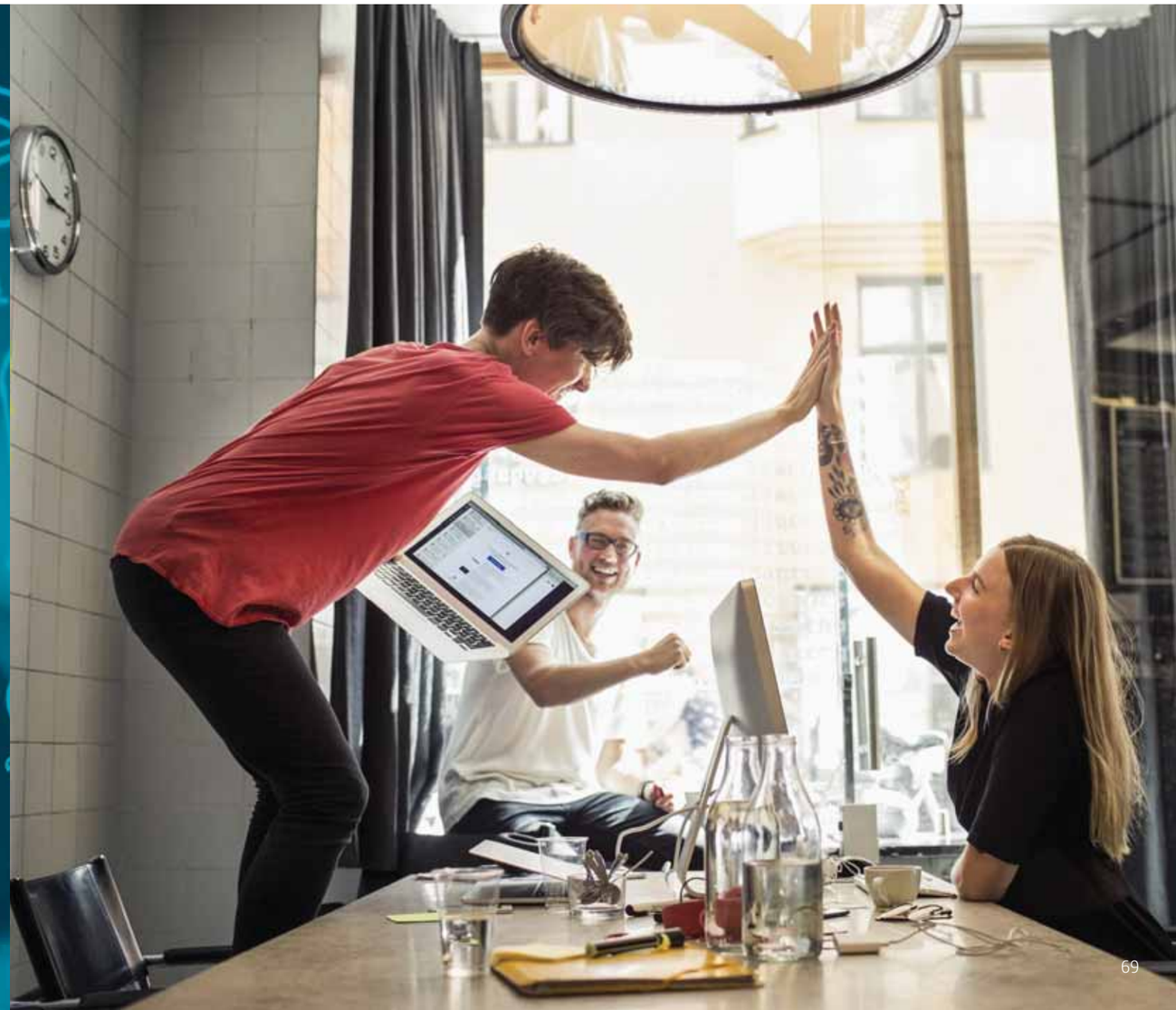
Certain essential platforms can determine our digital experiences, the services and apps we use and the content we access. As governments become increasingly aware of this situation, they seek to take advantage of it in order to implement effective forms of censorship:

- As Internet usage has become increasingly mobile based, apps have become the main way to use services. However, app stores are highly concentrated, with just two global providers reaping over 80% of revenues (App Annie; Market Forecast 2016-2021; actual data for 2016), thus making them convenient choke points — the very points of control that the Internet was originally designed to eliminate.
- The Chinese and Russian governments have demanded that app stores remove certain apps after the developers failed to comply with their demands. By excluding an app from a local app store, it effectively does not exist in that country. This is a far more effective measure than blocking a website, since a VPN and other means can be used to circumvent those government censorship actions.

The power to determine digital experiences is not just abused by governments; platforms are also exerting such power themselves.

- Chinese app developers have lodged an antitrust complaint against Apple with accusations of anti-competitive behaviour.
- App developers have alleged unfair treatment: when Apple's partners complain about apps infringing their rights, Apple will eliminate them from its App Store with very little evidence. In June 2017, Apple removed 58,000 apps after deeming they had breached their conditions, with Chinese developers claiming that they did not receive sufficient explanation for this action.
- The complaint also extends to Apple's policy for in-app purchases, for which Apple charges a 30% revenue share fee. This fee has also been contested by companies in Europe.

Source: MLex, 18 July 2017.



However, the next wave of innovation is already being deployed; Virtual Assistants like Amazon's Alexa, Apple's Siri, Google's Assistant and Microsoft's Cortana are set to become the new channel to digitally access information and services. They will provide a convenient voice interface to search products, services and information. The underlying AI will be powered by algorithms and access to user's data, preferences and information.

Although this creates new interfaces for users, it will not change the underlying problem of digital bottlenecks. In fact, it is more likely to fuel the current debate on concentration of online search markets and app stores. The issues of transparency and accountability of algorithms will become even more pressing in the future, when virtual assistants guide people through the digital world and even become able to make commercial decisions on their behalf ("Order a pepperoni pizza"). **It is quite likely that these voice interfaces powered by data and AI will become the main channels for information and consumption, making them future key bottlenecks for people's digital experience.**

Most likely, the principles discussed as remedies for online search and to prevent users being locked into digital platforms – **interoperability, data portability, non-discrimination and transparency** – will also need to apply to the friendly Alexas, Siris and Cortanas of the future.

5. Policy responses

Due to their great relevance, it does not come as a surprise that analysing the impact of digital platforms and addressing identified concerns has become a focus area for governments and public administrations:

- In France, the communication regulator has published reports on the "State of the Internet in France"[42] and "End-user devices: Analysis of their influence on Internet Openness"[43]
- In Germany, the Federal Ministry for Economic Affairs and Energy has published a "White Paper on Digital Platforms"[44]
- In the UK, a green paper on "Internet Safety Strategy" was published by the UK Government[45].

Through such reports, regulators and policymakers are assessing how to respond to new, data-driven platform models. It is becoming apparent that both **the economic value of data, as well as the effect of data in competition make modernisation of rules a necessity.**

Examples include:

- EU Merger Control Regulation currently includes an obligation to notify mergers to the EU based on the companies' turnover. This is not fit for purpose in a world in which services are provided to people in exchange for their personal data rather than money.
- The competitive effects of data concentration in digital markets with strong network effects are also out of sight for merger control regulation. The difficulty in defining relevant markets in the digital economy, an unavoidable first step in competition analysis procedures, together with unquantified network effects, has permitted significant mergers to go "unnoticed" despite evidence of negative effects on competition. Facebook's acquisitions of WhatsApp and Instagram, both fast-growing competitors, clearly highlighted those shortcomings and the need for an update to the EU's Merger Control Regulation, in order to fully address the far-reaching implications of such mergers between digital companies[46].

Renan Kawakami, Luana da Olieria and Bianca Guardia, Telefónica's Brazil employees.

6. The way forward

Digital platforms are key for digitalisation of societies and have many positive effects. However, it is also obvious that they entail relevant risks and challenges. As a result, resistance towards them is growing across the world. A comprehensive approach which includes elements of self-regulation and policy modernisation should be adopted in order to avoid further backlash from societies and policymakers.

A potential way forward would include these elements:

- **A more responsible and accountable behaviour by digital platforms:** platforms should take a more human-centric approach, adopt ethical principles in the implementation of their algorithms and put people back in control of their data. Consumer choice, transparency, innovation and inclusiveness are essential for a sustainable Internet. Societies demand that businesses respect local laws and values and contribute to national welfare, employment and taxes, in order to share the value of digitalisation more fairly across different geographies.
- **Policymakers and regulators should hold platforms accountable and insist on defending the application of values, norms and rule of law:** they need to modernise policy frameworks to ensure that fairer tax and other contributions are made to the communities in which transactions take place and digital services are used, and adapt consumer and data protection regulations to ensure that companies compete on an equal footing, while preserving fundamental privacy and security rights. It is essential that data, the foundation of most business models in the digital economy, is not exclusively considered in terms of privacy. Instead, going forward it should be increasingly regarded as a competitive asset with real value. Competition authorities should take this into account in their analysis and competition rules should be reviewed in this light in order to account for the value of personal data provided in exchange for "free" services.

- **The use of AI and algorithms by platforms should be guided by ethical principles and seek to avoid undue discrimination and anti-competitive outcomes:** decentralised and distributed technologies, like Blockchain, may provide a technical solution to challenge dominant positions and keep digital markets competitive.

Data as a currency or a form of remuneration

Data, the foundation of business models in the digital economy, **should not only be considered in terms of privacy: it is a competitive asset with real value.** Access, management, storage and use of personal data are dealt with by privacy and data protection regulations. Compliance with such regulations is necessary, but not sufficient to achieve digital sustainability. People still do not feel in control of their data. A new, more responsible approach to transparency and choice is required from businesses in order to empower users and put them in control of their digital footprint[58].

Data should also be viewed and treated differently by regulators. Just like businesses already do, it is important to regard data as a strategic asset which needs to be subject to the same oversight and control as other key assets. Data is valuable and access to it and control by users will have an increasingly important impact on competitive dynamics and the possibility to innovate. **Remedies, including data portability, should be put in place whenever competition problems are identified.**

Global services and national jurisdictions

There is an expectation by societies that global business and services need to respect the sovereignty and laws of States and consider each set of national, cultural, historical and socio-economic approaches, traditions and values when they offer their services.

Digital platforms need to adopt a more responsible and accountable behaviour and always strive to fully comply with local requirements.

It appears that a sustainable digitalisation process will require a more responsible and value-driven approach from all stakeholders, particularly from digital platforms. When market developments outpace legal systems and policymaking, businesses need to go beyond strict legal compliance and act responsibly in the interest of their users and the whole of society.

Digital services should, therefore, always strive to fully comply with local requirements:

- **Consumer protection:** e.g. possibility for local redress to courts for consumer services.
- **Privacy and Data Protection:** e.g. as stated in the new EU Regulation on Data Protection.
- **National security requirements:** as long as they respect international Human Rights standards (e.g. lawful intercept of communication by independent judges).
- **Fair taxation:** by considering the place where transactions take place and services are used.

AI and ethics

The development of AI will need to be human-centric and take ethical considerations and established values into account. In the same way as environmental impacts of production are generally seen today as a corporate responsibility, businesses will be held accountable for the social impacts of their AI platforms on societies[59].

Businesses should engage with stakeholders, decision-makers and civil society to ensure that their concerns about transparency, ethics, accountability and others aspects are addressed during the development of AI technologies. Sharing of best-practices and self-regulation initiatives between companies would be helpful.

A first step could be to define principles of responsible innovation for AI between key players. Moreover, businesses should not shy away from acting responsibly and be open regarding the social impact of automation and AI, e.g. on labour, jobs and taxation.

Policymakers should foster and engage in these debates and also insist on platforms respecting the established values of democratic societies. In some cases, regulation might be needed for certain applications of AI and automation (e.g. modernisation of traffic rules for autonomous vehicles) and to provide legal certainty in some cases (e.g. responsibility for damages caused by an AI's decisions). Authorities should also make sure that the combination of new technologies like AI, voice interfaces and massive access to data will not reinforce the current dominance of leading digital platforms and that innovation around AI is also possible for smaller companies and players.

Overall, the objective of all stakeholders should be to foster a fair, accountable and transparent development of AI technology.

Blockchain

Decentralised and distributed technologies, like Blockchain, may provide a technical way to challenge the dominant positions of digital platforms and keep digital markets competitive.

Blockchain technology is widely regarded as a way to decentralise transactions of all kinds and make Peer-to-Peer value transactions possible. Up until now, the most popular applications have included cryptocurrencies, like Bitcoin, but the use of Blockchain technology is already being considered for many other services and usage cases, including many which today are dominated by a few players (e.g. social networks, car and house sharing). Additionally, the reward mechanism of digitalised tokens could generate new business models for digital services[60].

Regulators should also study the possibilities offered by Blockchain for **better market supervision** and a potential way to provide remedies in cases of dominance and market concentration. Blockchain-driven innovation could, for example, offer people the possibility to better control and manage their data and digital identity. **Data portability based on Blockchain** technology would make data and its value interoperable and transferable, improving competition in digital markets. Ultimately, this would result in greater public awareness of the value of their personal data, potentially changing attitudes and market dynamics.

Case Study

BLOCKCHAIN: A POTENTIAL SOLUTION TO ADDRESS DIGITAL BOTTLENECKS

Blockchain's inherent decentralisation can contribute to a fair distribution of the value generated by the sharing economy and two-sided digital business models, potentially lowering the dominance of centralised systems and platforms that act as intermediaries.

- Blockchain allows the creation of Decentralized Autonomous Organizations (DAOs). These enable individuals and communities to exchange value without the intervention of intermediaries through a token or cryptocurrency defined by the DAO.

- Thus, DAOs can provide the trust required by parties and enable transactions between them without the need for any additional or prior trust or relationship.

- Such DAOs could replace the role of current digital platforms by enabling a trusted and direct interaction among participants without a need for intermediary.

Another application of Blockchain technology could be for people sharing computing power for mining activities. This could create a new business model to compete with the current one, in which "free" services are paid for by providing access to users' data and advertising:

- Cryptocurrencies, such as Bitcoin and its successors, are backed by a system of "miners", who race to be the first to solve complex computing problems in exchange for a reward. To do so they require large amounts of computing power, which can be increased by adding the processing power of connected devices that work for the miner.

- Instead of presenting online ads and charging advertisers, websites and applications would send mining code, which the users' devices would then execute to share part of their computing power for mining activities. This computing power would be the users' payment to access the "free" services and content provided by the website or application, replacing ad revenues.

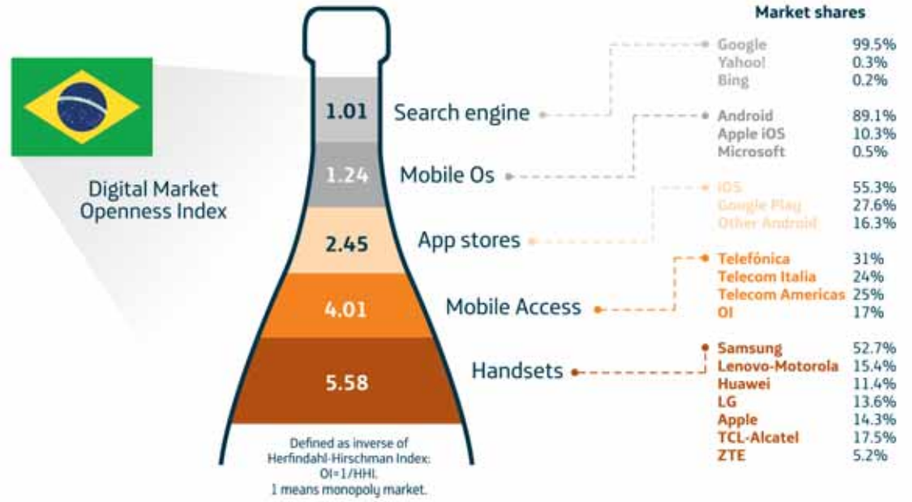
- In such a scenario, online advertising would cease to be the dominant revenue source of Internet-based businesses, thereby limiting the need to use personal data and advertising.

Such a profound change might open digital markets to new entrants, creating more competition and choice for consumers.

Chapter 4: At a glance

The Issue

Global platforms are becoming bottlenecks of the digital experience, a position that could be strengthened through their access to data and the adoption of Artificial Intelligence. These platforms are challenging enforcement of national rules on taxation, security, privacy and consumer protection.



Source: Telefónica analysis based on data from Anatel, Strategy Analytics, Stat Counter and App Annie.

Our Belief

01. RESPONSIBLE AND ACCOUNTABLE BEHAVIOR

Global platforms should take a human-centric and value driven approach by putting people back in control of their data, adopting ethical principles in the implementation of AI and algorithms and assuring fair tax contribution to local communities.

02. UPHOLD THE APPLICATION OF VALUES AND RULE OF LAW

Policymakers and regulators should hold platforms accountable and insist on defending the application of existing values, norms and rule of law. They should make sure that companies compete on an equal footing, while fundamental privacy and security rights are preserved.

03. DATA AS A COMPETITIVE ASSET

Data is a competitive asset with real value and has an important impact on competitive dynamics and possibility to innovate. Regulators and policy makers should view and treat data accordingly, and not just in privacy terms.

04. GLOBAL SERVICES AND NATIONAL JURISDICTIONS

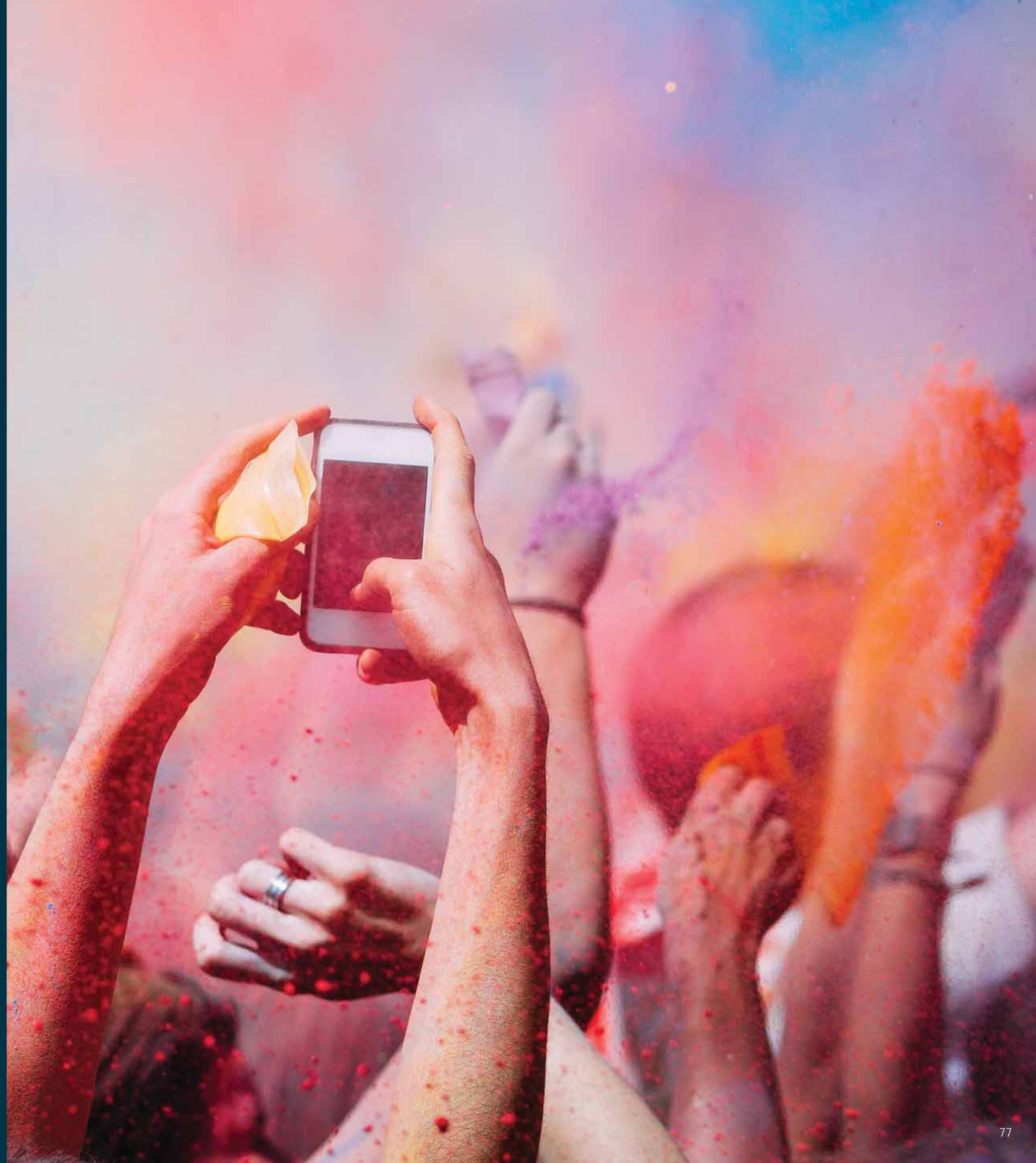
Global business and services need to respect the sovereignty and laws of states, and consider the cultural, historical and socio-economic approaches, traditions and values when offering services. They should always strive to fully comply with local requirements.

05

MODERNISING RIGHTS AND POLICIES

In this chapter:

You will learn about a “Digital Bill of Rights” – the rights and obligations that should apply equally online as they do offline. This chapter is also about the urgent need of modernisation of policies and regulation providing a new vision. It is also highlight the need of a greater cooperation at global level.



MODERNISING RIGHTS AND POLICIES

The Issue

- Today's policy and legal frameworks were not built for the digital age: the fast changes brought about by digitalisation have left many norms and policies outdated and created an urgent need for modernisation.
- People's fundamental rights are challenged in new ways through digital services, platforms and applications.
- Uneven application and enforcement of existing norms are distorting markets and placing local business at an unfair competitive disadvantage versus global corporations.
- Preserving the open Internet will depend on society's response to global challenges.
- Growing, global cybersecurity threats are challenging national governments and creating risks for the sustainability of digitalisation.

Our Belief

- A profound policy review and responsible corporate leadership are needed to achieve a sustainable development of digitalisation.
- A "Digital Bill of Rights" should guarantee human-centric digitalisation and the same level of protection for fundamental human rights online as offline. We must apply national and international human rights instruments to the digital world.
- Business and industry self-regulation, policy modernisation and smarter regulatory supervision need to be combined in a new approach.
- Legislation and supervision should focus on regulating activities ("what") rather than entities ("who"), always following a horizontal and technology-neutral approach.
- Regulation should avoid stifling innovation and leave room for market experimentation, whilst closely monitoring and investigating market developments so as to intervene quickly and with better expertise, if necessary.
- Policymakers should strive to find international solutions and coordinated policy approaches on a global and regional level to avoid disruption of cross-border data flows.
- Global cooperation on cyberdefence and better public-private cooperation on cybersecurity will be necessary due to the scope and complexity of cybersecurity threats.

The speed of technological progress and disruption by new digital services have left policy frameworks and regulation in urgent need of modernisation. Our regulatory frameworks were not built for the digital age. Convergence of services makes sector-specific regulations ineffective and creates an unfair and uneven playing field for traditional industries.

Fundamental human rights are challenged by digitalisation and need to be protected and guaranteed online as they are offline.

1. Digital Bill of Rights

Digitalisation creates new challenges for people's rights. Therefore, Telefónica calls for a "Digital Bill of Rights" to adapt people's rights to new dimensions brought about by technological innovation and to guarantee enforcement of those rights.

The first element in the analysis of the impact of digitalisation on people's rights and the definition of a "Digital Bill of Rights" should be the principle of equality[47] related to access to connectivity and digital technologies, as this impacts the exercise of all other rights, including the rights to education, information and employment. All international fora have recognised the critical role that Internet access plays in reducing inequalities, fostering inclusive societies and achieving the 2030 Agenda for Sustainable Development[48].

Second, the right to informational self-determination[49], understood as the right to decide about the disclosure and use of each individual's personal data, should be at the heart of any initiative to modernise current legal and policy frameworks. In general terms, this right provides a harmonised understanding of people's right, within a global data economy, to decide what information about themselves should be communicated to other parties and under what circumstances.

The right to informational self-determination is a modality of personal liberty granted to the individual in order to protect and respect their "digital identity", i.e. to protect users against non-consented and unlimited collection, storage, use and disclosure of personal information.

Other rights, such as education, privacy, freedom of expression and information, digital neutrality, digital identity, the protection of personal data and the right to be forgotten, among others, should also be reviewed within a digital context. A revision of these rights should also include an analysis of the impact of technology on their effective protection.

"We must develop a comprehensive and globally shared view of how technology is affecting our lives and reshaping our economic, social, cultural and human environments. There has never been a time of greater promise, or greater peril".

Klaus Schwab, Executive Chairman of the World Economic Forum

The following, non-exhaustive list, presents examples of some of these rights:

- **Right to education:** training in digital content creation and use of technologies should be among the goals sought by education systems. This involves fostering digital education at every level of the education system, incorporating subjects and contents that allow students to acquire the necessary skills and abilities for a proper and fruitful use of the Internet and other technologies.

  It is also necessary to educate on the risks associated with the use of the Internet and other technologies.

- **Right to freedom of expression:** the guarantee of the right to freedom of expression has been modified due to the characteristics of the Internet and social media platforms, since they allow people to express their opinions easily, quickly and almost without barriers.

  The Internet has created new challenges regarding the protection of intellectual property and misuse of freedom of expression, such as "hate speech"[50].

- **Right to information:** the right to information refers to the right to be informed without the state or any other agents being able to manipulate information and deciding what citizens have the right to know, as well as preventing anyone from doing so.

  In addition, it also includes the freedom to present public opinion with truthful, free, effective, objective and plural information.

  The proliferation of unlawful content, fake news created deliberately to misinform, blocking and discriminating content across the Internet and social media are interfering in democratic processes and altering the right to information.

- **Right to digital neutrality:** this right aims to provide citizens with an open, unrestricted and non-discriminatory Internet experience, thus applying to digital devices, content, services, applications and networks. It also seeks to guarantee that individuals can access and use the content, services, apps and devices of their choice over the Internet.

- **Right to data protection:** Technology facilitates the massive use of data, directly impacting people's privacy. Therefore, any entities which handle personal information have a duty to keep it private and safe.

- **Right to digital identity:** digital identity represents the right to have a personal, formal identification to be used online. Subjects should be able to exercise control over the information that they have uploaded to a platform, to modify or delete it and to regain control of their identity to prevent against identity theft.

- **Right to be forgotten:** the right to be forgotten reflects the doctrine established by the Court of Justice of the European Union's ruling on May 13th, 2014 which established that the use of data by search engines is to be considered as data treatment and, therefore, subject to the corresponding standards. The ruling recognises subjects' right to request, under certain conditions, that any links to their personal data not appear when a search for their name is made on the Internet.

Most concerns in this regard are related to the issue of privacy, and the way in which citizens are losing control over personal information, in particular with the expansion of the Internet of Things (IoT), sensors, AI and robots. The ethical and legal implications of these new technologies[51] should also be studied. Likewise, a mandate for transparency should govern both public and private stakeholders, as long as they possess information of vital importance for the exercise of an individual's rights and freedoms.

Legal and policy framework must guarantee that rights and obligations apply equally online as they do offline. The measures adopted must respect the rights of individuals as recognised by the legal system.

We must apply national and international human rights instruments to the digital world. The development of public policies must necessarily embrace digital transformation as a tool at the service of citizens within a model of technological humanism and must take into account this new dimension of rights. This is an effort that requires stable cooperation from all parties involved to reach universal standards: the public and private sectors, as well as civil society.

2. Smart Public Policies

Digitalisation and new digital business models are increasingly challenging the tools that administrations have developed to regulate markets and safeguard consumer protection. Most supervisory and regulatory authorities are still focusing on traditional markets and following approaches that prove inefficient and even inadequate to protect fair competition and consumers. Technology, digitalisation and new business models are outpacing policy and regulatory supervision. As digitalisation changes everything, obviously policy and regulatory frameworks and supervision also need to change.

The dynamics of competition in digital markets have led to the concentration of power in the hands of a small number of global players.

Dominant digital platforms have a far-reaching impact on people, competition and economies that often goes beyond that of traditional businesses. Whilst innovation still exists in the digital ecosystem, there is a significant risk that it increasingly only takes place with the permission of these powerful firms, through the proprietary rules they enforce on the bottlenecks they control.

Additionally, the geographic limits of national regulators to enforce rules on global service platforms is another barrier to guaranteeing fair competition and protection of consumers and national security. However, these concerns should not be used as a justification to impose data localisation obligations or restriction on

Roberto Gomes, Telefónica's Brazil employee.

international data flows which could lead to negative and unintended consequences on social and economic development. Therefore, what is needed is **a new policy and regulatory paradigm** based on accountability, transparency and self-regulation of the private sector, combined with a smarter public policy approach and supervision of digital markets.

First of all, businesses should strive for a human-centric digitalisation process and be driven by values and responsible behaviour. This means that companies should anticipate the impact of their services and digitalisation process, and act responsibly to achieve a sustainable digitalisation through a responsible innovation approach. This includes existing services, but also, going forward, AI and advanced algorithms, Machine Learning and cognitive intelligence should be developed and used in a transparent and accountable way, guided by ethical guidelines and self-regulation. Some initiatives already exist in that regard, but need to be reinforced[52] by collective industry approaches.

A cross-sector approach of major players could help to define and follow self-regulation principles that could include:

- Recognition of the sovereignty of countries and compliance with national laws.
- Respect for human rights.
- Willingness to make digitalisation human-centric.
- Transparency on and accountability for the impact of businesses and services on societies, particularly regarding labour markets and tax contributions.
- Fairness and non-discrimination as a principle for dominant platforms.

Being a digital leader should mean more than just having the highest market capitalisation or largest number of users. With leadership comes great responsibility and that means being accountable and acting responsible towards people and societies.

The public sector must also modernise supervision to make it smarter and allow faster intervention. The traditional mindsets and regulation of specific sectors will need to be abandoned in favour of a broader, more holistic supervision that allows innovation for all players in the digital sector. Competition dynamics specific to digital economy, like network effects, should be better understood and the use of technologies like AI and algorithms should be closely monitored by policymakers and regulators, who should insist on applying established values, principles and rules. When markets do not deliver good outcomes for consumers and competition becomes unfair, regulators **need to have the ability and clear mandate to intervene in a fast and decisive manner.**

Overall, regulatory frameworks should strive to use a less "ex-ante" approach, as it is difficult to regulate"ex-ante" in fast-moving digital markets without a considerable risk of impairing innovation. Rather, all digital businesses should be provided with the freedom to experiment, e.g. by using "regulatory sandboxes", while being closely observed by supervisors, in order to rapidly and efficiently intervene when undue discrimination and abuse emerge.

To achieve this, it is vital to have modernised regulatory policies and competition laws:

- Focusing on "what" rather than "who" is regulated.
- Considering personal data within competition analysis as the way to pay for services within a platform and data economy.
- Increasing expertise on digital markets within authorities, making them fit for a digitalised economy and society.
- Providing instruments to foster transparency and benchmarks for digital markets, e.g. information disclosure and reporting.

In a fast-paced, disruptive, global and digital environment, regulation must become more responsive to the behaviours and activities of all businesses and less focused on specific industries or sectors.

Case Study

EUROPEAN UNION

The European Commission has started a process of modernisation of different regulatory frameworks in order to make them fit for the digital era. The result of this effort can be seen in the following outcomes:

- **General Data Protection Regulation** coming into force on May 25th, 2018.
- European **Electronic Communication Code (ECC)** in progress.
- **Network and Information Security Directive.**
- Considering **Online Platform Regulation.**
- Public consultation about the review of Merger Control Regulation, including the need for new thresholds to capture transactions of companies with very low turnover (particularly present in digital markets).

3. Improving global cooperation

Today's regulatory frameworks were not built for this digital age. The work must progress on the basis of a strong understanding of how new technologies, business models and markets emerge, in order to avoid passing premature regulation that stifles innovation.

Preserving an open Internet will depend on how society responds to global challenges. National policies can trigger network fragmentation, compromise freedoms and rights and undermine people's trust in the global Internet.

Public and private sector roles could become blurred as businesses assume responsibilities that have traditionally been adopted only by governments. It is necessary to compel all actors involved, both public and private, to work together on collaborative approaches that can respond to the complex challenges ahead.

International cooperation initiatives

The global nature of the Internet forces all stakeholders to think globally. We believe that a kind of "legal interoperability" is needed, a framework that makes scenarios of compatibility between different national standards possible. The rise of a globalised and digitalised economy has defined a new realm in which the transnational replaces the international. It is evident that sovereign states continue to represent their citizens at the international policy level. However, the challenges we face require a broader dialogue with companies, experts and civil society.

Many excellent initiatives are trying to find new ways to cooperate at an international level:

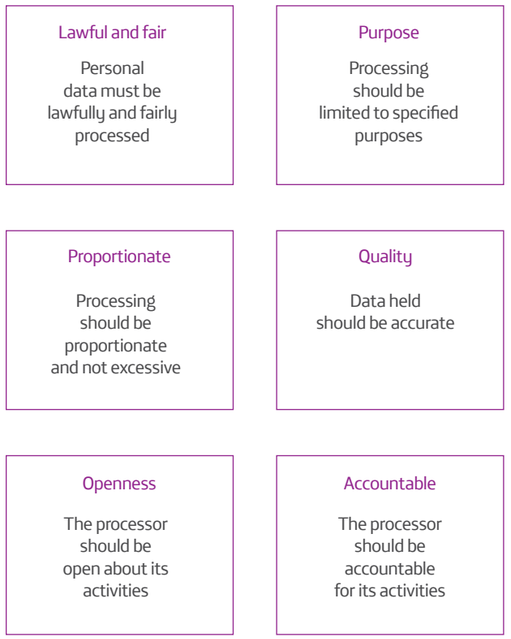
- When courts, as enforcement agencies, seek to enforce legal resolutions, they face inefficient Mutual Legal Assistance Treaties (MLATs), which take months and, in some cases, years to be resolved, making them too slow for a highly dynamic and fast-changing digital environment.

The problem raised by jurisdiction and outdated MLAT processes is currently being addressed by two relevant initiatives:

- The Internet & Jurisdiction Policy Network facilitates a global policy process to promote legal interoperability and establish due process across borders.
- The governments of the US and the UK agreed in a bilateral agreement to grant their administrations direct access to private companies abroad.

- The Privacy Shield and the EU e-Evidence Directive for cross-border access to data define legal interoperability of data protection standards between the US and EU.
- The 2009 Madrid Resolution encourages consistent international protection of personal data and embraces privacy approaches to facilitate "the international flow of personal data needed in a globalised world" among the five continents.

Chart 1. The Madrid Resolution advocates six privacy principles to be adopted by policymakers



Source: GSMA, Cross-border data flows, 2017

- The Network and Information Security Directive promotes cooperation and information sharing between EU Member States via Computer Security Incident Response Teams (CSIRT) and competent national NIS authorities.

- The Clarifying Lawful Overseas Use of Data Act (or CLOUD Act) is a federal bill enacted in March 2018 in the US that culminates successive public authorities' efforts to obtain remote data through service providers regardless of where they are located. It provides an alternative route to MLATs through "executive agreements" between the US and foreign countries. The CLOUD Act represents an important milestone for a new generation of international agreements that has been supported by major technology companies.

International cybersecurity policies

The frontiers that used to insulate countries from foreign threats are less effective in the borderless Internet era. Expert-driven responses will be necessary to face the scope and complexity of cyber threats, and this will come from global cooperation on cyber defence between countries, since state-sponsored actors have become one of the most omnipresent malicious agents in cyberspace, but also better cooperation between the private and public sectors.

Today, it is easier to attack a country's oil, energy or communication infrastructure digitally, rather than physically.

A recent alarming example was the malware known as BlackEnergy, which constituted a cyberattack on Ukraine's power grid and cut off the supply to 230.000 people for several hours in December 2015.

In July 2016, NATO officially declared cyberspace the fifth warfare domain, aware that cyberattacks could constitute an act of war between States because digital firepower can be massive and intense and could undermine democracies. Attacks on critical infrastructure and sensitive industries, the use of malware and social media operations, like fake news, can be used to wage psychological warfare that could destabilise opponents in the online and real worlds.

Cyber resilience must also be a top concern for governments, especially in the case of critical infrastructures and the "cascading" effects frequently associated with such attacks.

However, as most critical infrastructure is owned by the private sector (over 80% in Spain and most western countries), the State itself may no longer be able to ensure the comprehensive security of critical infrastructure and may be largely dependent on the private sector for this purpose. A well-defined public-private partnership is essential in order to develop protection policies for critical infrastructure.

Case Study

TECH ACCORD FOR CYBERSECURITY

Leading technology companies have recently launched the **Tech Accord for Cybersecurity which aims to** create and defend a trustworthy environment for Internet users. Its goal is to prevent cyberattacks and to empower users and consumers everywhere by strengthening their cybersecurity protection.

Members of the Tech Accord have committed to a **set of common principles and behaviours,** requiring them to:

- Refrain from offensive cyberoperations;
- Protect their customers everywhere;
- Collaborate to bolster for a first-response effort;
- Support government's response effort;
- Coordinate to address vulnerabilities;
- Fight the proliferation of vulnerabilities.

This agreement **demonstrates the commitment of the private sector to defending the Internet and its users** from increasing cyberthreats. Leading tech companies like Microsoft, Siemens, Cisco, Oracle, Facebook, Nokia, BT, Hewlett-Packard and Symantec have signed the Tech Accord. Telefonica has also supported the initiative right from its start.

Such initiatives from private companies are necessary and helpful, because public authorities alone cannot control the risks of cyberspace. **The private sector's control of key elements like the infrastructure, platforms and services on which the Internet operates,** makes its involvement and cooperation important. Such Codes of Conducts, industry-led initiatives and public-private cooperation are therefore necessary and relevant to achieve a secure cyberspace and protect Internet users.

Moreover, the use of cyber weapons is increasingly accepted as a way for countries to exercise their power. According to United Nations Secretary, Antonio Guterres, "concerns about digital threats keep rising without any adequate international response. It's time to seriously discuss a global legal framework for cyberwarfare" [53]. There is a need for governments to reach agreements in order to control the use of such digital weapons.

Cyberattacks are the fastest growing type of crime, malicious actions are increasing in size, sophistication and cost, and will soon be more profitable than the global trade of all major illegal drugs combined. Cybercrime damages are predicted to cost $6 trillion annually by 2021[54]. This represents the greatest threat to economic wealth in history and puts the incentives for innovation at risk.

The Convention on Cybercrime, also known as the Budapest Convention, was the first international treaty on crimes committed via the Internet and other computer networks. Its main objective was to pursue a common criminal policy aimed at protecting society against cybercrime by fostering international cooperation. It was signed over 15 years ago, in 2001, a period in which cybercrime has evolved alongside digitalisation. An urgent update is therefore needed.

Cyber diplomacy as a useful tool. Communication technologies are creating opportunities for governments to explore new methods of conducting diplomacy among international actors that could help enhance global stability. Some governments, like Spain's, have already appointed Ambassadors for Cyber Affairs who seek to improve interactions between countries in order to tackle geopolitical tensions.

Case Study

A "ROBOETHICS" FRAMEWORK

Scientific progress related to robotics and AI need to be monitored in order to anticipate responses to big ethical questions facing humanity. Technological advances are creating robots with higher degrees of autonomy.

Ethic codes need to be built into the sort of decisions that AI systems are making on behalf of humans, now that robots are becoming more powerful and more prevalent in our daily lives. There is an urgent need to introduce clear rules, not only to govern autonomous cars but also military technology innovations that are developing super soldiers with increased strength and Autonomous Weapons Systems that, once activated, can select and engage targets without further interaction by human.

Originally published as part of a science fiction series, Isaac Asimov's Laws of Robotics set out to govern how robots interact with humans and the world around them.

Asimov's Laws of Robotics:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence, as long as such protection does not conflict with the First or Second Laws.

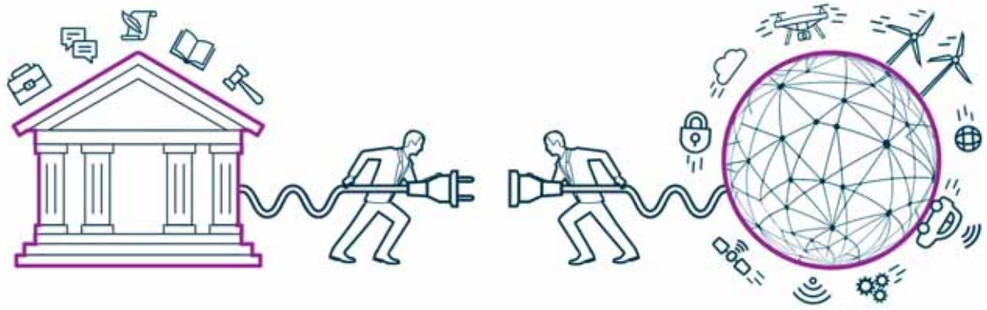
Taking into account all technological advances since these Laws were written, it is time to set a moral framework for interactions between humans and robots to ensure that AI will serve humanity, and to guard against their becoming destructive overlords.

A guiding framework should establish ethical standards in the design, production and use of robots, placing human dignity as the foundation of all rights, as set out in Art. 1 of the Charter of Fundamental Rights of the European Union: **"Human dignity is inviolable. It must be respected and protected"**

Chapter 5: At a glance

The Issue

The rapid changes brought by digitalisation have left many public policies and legal frameworks increasingly outdated. This challenges people's rights, consumer protection and fair competititon. There is an urgent need of modernization.



Time of regulatory approval process

- **EU Electronic Communications Review:** 6 years and 10 months
- **GDPR:** 6 years and 6 months
- **CETA (Canada - EU Trade Agreement):** 8 years and 4 months

Time to reach 50 million users

- **TV:** 13 years
- **Facebook:** 2 years
- **Youtube:** 10 months
- **Twitter:** 9 months
- **Pokemon Go:** 19 days

Source: Telefónica

Our Belief

01. DIGITAL BILL OF RIGHTS

A "Digital Bill of Rights" should guarantee a human-centric digitalisation so the rights of people are protected equally online as they do offline.

02. A NEW REGULATORY PARADIGM

A new policy and regulatory paradigm is needed, which combines business self-regulation, policy guidance and an improved supervision based on regulating activities rather than entities.

03. PROTECT PEOPLE AND COMPETITION

Markets and companies need to be able to innovate while authorities should defend established values and be able to intervene quicker and more decisively to protect competition and people, if necessary.

04. IMPROVE GLOBAL COOPERATION

Policy makers should strive to find international solutions on global and regional level due to the global nature of the Internet and digital services in order to avoid disruption of cross-border data flows.

CONCLUSIONS

Digital technology is changing everything. The possibilities for our societies are almost limitless, but we need to make sure that digitalisation benefits everyone.

Telefónica publishes this New Digital Manifesto to propose a New Digital Deal that empowers people and achieves a human-centric digitalisation.

In new cooperative and inclusive effort societies should define such a **New Digital Deal** to **renew our social and economic policies** and modernise our democracies for the digital age.

People's rights need to be protected online as they are offline. A new "Digital Bill of Rights" must be debated to ensure that individual's rights are adequately guaranteed. The establishment of a "Digital Bill of Rights" should be a subject of public debate and address challenges related to the right to education, information, privacy and data protection, digital neutrality, digital identity and freedom of expression.

Human-centric digitalisation will require corporate policies and responsive behaviour to ensure that technology resolves, rather than exacerbates, inequalities between people.

A profound policy review is needed to achieve a sustainable development of digitalisation. Technology and digital services have improved market dynamics but also created new bottlenecks and dominant platforms. Market supervision and regulation need to become smarter in order to adequately protect consumer's rights, innovation and fair competition:

- The focus of legislation and supervision should be on regulating activities ("what") rather than entities ("who"), always using a horizontal and technology-neutral approach.
- Regulation should foster innovation and leave room for experimentation of markets but also monitor and investigate market developments closely to be able to intervene faster and with better expertise, if necessary to safeguard fair competition and consumer protection.
- Policymakers should strive to find international solutions on global and regional level due to the global nature of the Internet and digital services and to avoid disruption of cross-border data flows.
- Industry self-regulation, policy modernisation and smarter regulatory supervision should be combined for a new approach.

These are the principles that we consider fundamental in this debate:

1. INCLUSIVENESS:

Nobody must be left behind: Since connectivity is the foundation of digitalisation, the public and private sectors need to work together to connect everyone. Digital transformation needs to be accompanied by social policies to enable a transition period; technology and connectivity will help to provide better education for everyone.

To achieve this goal, Telefónica recommends:

- Making broadband deployment a priority for national developments, attracting private investment by removing obstacles for infrastructure buildout and by adopting demand-side policies.
- Modernising how businesses and regulators approach the way broadband infrastructures are deployed and commercialised.
- Governments should reform policies to avoid tax erosion caused by the adoption of digital services, in order to ensure that public education, social policies and welfare are adequately funded.
- Education systems must adapt knowledge and skills to a digital world, and people need to understand learning never ends in order to embrace a lifelong learning philosophy.
- Businesses must adopt this new approach by continuously reskilling workforces to guarantee employability.

2. TRANSPARENCY AND CHOICE:

Transparency and choice are necessary to put users in control and build trust. Data is a force for good and people need to feel comfortable about the usage of their data.

To achieve this goal, Telefónica recommends:

- New data ethics. Users should be empowered to decide how and when their data is used in a secure and private environment, and also be able to enjoy the value of their data.
- Individuals should be able to know how data is collected and used, in order to make informed decisions.
- Implementing people's choice means providing alternatives to the usual "take it or leave it" terms and conditions.

3. ACCOUNTABILITY:

Governments and businesses must accept responsibility and be accountable for their actions in the digital space.

To achieve this goal, Telefónica recommends:

- Policymakers and regulators should hold platforms accountable for their actions as are guarantors of existing values, norms and the rule of law.
- Nation States have a responsibility to guarantee the security of their citizens, but also need to respect their fundamental rights.
- The use of Artificial Intelligence (AI) and algorithms should be ethical, so businesses should be guided by in-company ethical committees and best practices defined and shared by industry partnerships.
- Companies should demonstrate how they uphold citizens' rights when using data, and when designing and training Artificial Intelligence (AI).

4. RESPONSIBILITY:

Businesses need to be value-driven and contribute adequately to societies in order to make digitalisation sustainable.

To achieve this goal, Telefónica recommends:

- Businesses should protect human rights and contribute to the societies where they operate in terms of employment, economic development and taxes.
- Global digital businesses should adopt responsible tax behaviour and contribute fairly to societies where their activities and transactions take place.
- New forms of public and private cooperation are required, as well as additional efforts to improve the security of products and services.
- Data security and confidentiality must be assured by design as everyone and everything becomes connected. New digital experiences should be designed around keeping user data safe and secure.

5. FAIRNESS AND NON-DISCRIMINATION:

People should be able to enjoy fair, competitive and non-discriminatory digital services.

To achieve this goal, Telefónica recommends:

- Adopting Digital Neutrality to secure an open, unrestricted and non-discriminatory digital experience throughout the whole value chain: devices, content, services, apps and networks.
- Businesses and digital platforms must respect local laws and values, fairly contributing to national welfare, employment and taxes, and adopting ethical principles and best practices in transparency for users.
- Artificial Intelligence (AI), algorithms and new technologies should be at the service of people, following ethical principles and avoiding unfair discrimination and anti-competitive outcomes.
- Authorities and market supervisors should consider data as a competitive asset with real value.






APPENDIX

1. World Economic Forum (2016). 4 billion people still don't have Internet access. Here's how to connect them. See more at: https://goo.gl/87WOyJ
2. McKinsey Global Institute (2017). Harnessing automation for a future that works. See more at: https://goo.gl/hCtqxW
3. European Commission (2017). ICT for work: digital skills in the workplace. See more at: https://goo.gl/JYZvhL
4. OECD (2016). Forum 2016 issues: The future of education. See more at: https://goo.gl/Xqzf93
5. World Economic Forum (2016). The Fourth Industrial Revolution: what it means, how to respond. See more at: http://bit.ly/1pBfye4
6. ITU (2017). ICT facts and figures. See more at: https://goo.gl/WVFYpn
7. UN Sustainable Development Goals. See more at: https://sustainabledevelopment.un.org/sdgs
8. World Economic Forum (2017). Connecting the unconnected. Working together to achieve Connect 2020 Agenda Targets. See more at: https://goo.gl/F64nT9
9. ITU (2018). ICTs, LDCs and the SDGs: Achieving universal and affordable Internet in the LDCs. See more at: https://goo.gl/Nt59ZZ
10. ECLAC (2016). Status of broadband in Latin America and the Caribbean. (Spanish version). See more at: https://goo.gl/3X6vWk
11. OECD (2016). Forum 2016 issues: The future of education. See more at: https://goo.gl/Xqzf93
12. World Economic Forum (2016). Employment, skills and workforce strategy for the Fourth Industrial Revolution. See more at: https://goo.gl/aqeX6w
13. The Economist (2017). Lifelong learning: How to survive in the age of automation. See more at: https://goo.gl/bBfau5
14. Delaney, K. (2017). The robot that takes your job should pay taxes, says Bill Gates. Quartz. See more at: https://goo.gl/AKjBkP
15. OECD (2018). Base erosion and profit shifting. See more at: http://www.oecd.org/tax/beps/
16. Wehner, D. (2017). Moving to a local selling model. Facebook press release. See more at: https://newsroom.fb.com/news/2017/12/moving-to-a-local-selling-model/
17. ISOC (2016). Global Internet Report. See more at: https://goo.gl/3q5wuI
18. Ericsson (2017): Internet of Things forecast. See more at: https://goo.gl/kAuK2q
19. Finland and Sweden are pioneering countries in this field, publishing transparency reports on data requests.
20. Telefónica (2017). Report on transparency in telecommunications. See more at: https://goo.gl/zjEuaM
21. Global Network Initiative is a multistakeholder group of companies, civil society organisations (including human rights and press freedom groups), investors and academics which has spent two years negotiating and creating a collaborative approach to protect and advance freedom of expression and privacy in the ICT sector, as well as forming an Initiative to take this work forward. See more at: https://goo.gl/uM58w5
22. Ranking Digital Rights (RDR) is a non-profit research initiative housed at New America's Open Technology Institute, working with an international network of partners to set global standards for how companies in the information and communications technology (ICT) sector should respect freedom of expression and privacy. See more at: https://goo.gl/KCcZCx
23. Khalaf, S. and Kesiraju, L. (March, 2017). U.S. consumers time-spent on mobile crosses 5 hours a day. Flurry Analytics blog. See more at: https://goo.gl/jqjwCa
24. Popper, B. (2017). Google announces over 2 billion monthly active devices on Android. The Verge. See more at: https://goo.gl/fmmcgS.
25. Facebook (2017). Reports third quarter 2017: Results. See more at: https://goo.gl/FKYpqf
26. European Commission (2017). Antitrust: Commission fines Google €2.42 billion for

abusing dominance as search engine by giving illegal advantage to own comparison shopping service. Press release. See more at: https://goo.gl/NxCx7X

27. Zalesin, J. (2016). Brazil continues Google antitrust probe without Microsoft. Law 360. See more at: https://goo.gl/N8aJ8B
28. GSMA (2016). The Internet value chain: A study on the economics of the Internet. See more at: https://goo.gl/BzzgiC
29. Internet Society (2016). Global Internet Report. See more at: https://goo.gl/3q5wuI
30. Wehner, D. (2017). Moving to a local selling model. Facebook press release. See more at: https://newsroom.fb.com/news/2017/12/moving-to-a-local-selling-model/
31. Kubota, 7. (2017). Deep learning algorithm does as well as dermatologists in identifying skin cancer. Stanford News. See more at: https://goo.gl/6AVVTK
32. Cision PR Newswire (2016). Lucid selects new member to join ethics advisory panel. See more at: https://goo.gl/xSYxcj
33. Partnership on AI to benefit people and society. See more at: https://goo.gl/eV398k
34. Eltantawy, N. and Wiest, J.B. (2011). The Arab Spring| Social media in the Egyptian revolution: Reconsidering resource mobilization theory. University of Southern California. See more at: https://goo.gl/eR9M0W
35. Gottfried, J. and Shearer, E. (2016). News use across social media platforms 2016. Pew Research Center. See more at: https://goo.gl/KM3YNV
36. Shane, S. and Goel, V. The New York Times (2017). Fake Russian Facebook accounts bought $100,000 in political ads. See more at: https://goo.gl/HFsNhy
37. Ingram, D. (2017). Facebook says 126 million Americans may have seen Russia-linked political posts. Reuters. See more at: https://goo.gl/C5gvmF
38. Constine, J. (2017). Facebook will hire 1,000 and make ads visible to fight election interference. TechCrunch. See more at: https://goo.gl/vsKKrx
39. Estimates of 2021 app stores revenues by App Annie.
40. Statista (2017). Music industry revenue worldwide from 2012 to 2021, by source (in million U.S. dollars). See more at: https://goo.gl/yWUwLX
41. Digital TV research Ltd (2017). See more at: https://goo.gl/YYpED3
42. Autorité de Régulation des Communications électroniques et des postes (2017). The state of Internet in France. See more at: https://goo.gl/gwQ2ch
43. Autorité de Régulation des Communications électroniques et des postes (2017). Enduser devices: Analysis of their influence on Internet Openness. See more at: https://goo.gl/iTgD3a
44. Federal Ministry for Economic Affairs and Energy (2017). White paper on digital platforms. See more at: https://goo.gl/1aQdGs
45. United Kingdom Government (2017). Internet safety strategy green paper. See more at: https://goo.gl/ZQXAHE
46. Medina, E. (2016). Facebook/WhatsApp transaction: learnings for merger control in the digital age. Telefónica's Public Policy blog. See more at: https://goo.gl/CWHqNp
47. UN (2016). Human Rights Council, nonbinding resolution on The promotion, protection and enjoyment of human rights on the Internet. See more at: https://goo.gl/PYJqJJ
48. G20 Leaders' Declaration (2017). Shaping an interconnected world. See more at: https://goo.gl/1ENu4g
49. The German Federal Constitutional Court ruled that "[....] in the context of modern data processing, the protection of the individual against unlimited collection, storage, use and disclosure of his/her personal data. Limitations to this informational self-determination are allowed only in case of overriding public interest [...]".
50. UN General Assembly (2016). Special rapporteur on the promotion and protection of the right to freedom of opinion and expression. See more at: https://goo.gl/JFJcax
51. Analysis elaborated by the World Economic Forum (2017). New emerging key technologies. The Global Risk Report. See more at: https://goo.gl/P5Zmym
52. For instance, Partnership on AI to benefit people and society. See more at: https://goo.gl/JF7AVw
53. Khalip, A. (2018). U.N. chief urges global rules for cyber warfare. See more at: https://goo.gl/ozph4Q
54. Cybersecurity Ventures (2017). Annual Cybercrime Report. See more at: https://goo. gl/LSXn3x Eliminar las mayúsuclas: Cybersecurity Ventures (2017). Annual cybercrime report. See more at: https://goo.gl/LSXn3x

Acknowledgements
Many have contributed to this document and we would like to thank especially: Pablo de Carvajal, María García-Legaz, Carlos López Blanco, Enrique Medina, Trinidad Jiménez, Juan Luis Redondo, Beatriz Gutiérrez, Alfredo Timermans, Nuria Talayero, Carlos Rodríguez Cocina, Nicholas Blades, Beatriz Sanz, Cristina Vela, Alberto Moreno, Gonzalo García, Jorge Morillo, José Antonio Pocino, Frederick de Backer, José Juan Haro, Marian Juste, Ana Valero, Eduardo Cabrera, Eduardo Salido, Elena Valderrábano, Geert Paemen, Juan Antonio Mielgo, Pedro Pablo Perez, Chema Alonso, Elena Gil, Irene Gómez, Francisco Montalvo, Carme Artigas, Olvido Nicolás, Rames Sarwat, John Foster, Richard Benjamins, Gema Esteban, Carlos Gavilanes, Sebastián Urban, Enrique Lloves, Jacobo García-Palencia, Antonio Muñoz, Stefano Fratta, Juan Montero, Juan Carlos Gómez, Jaime Rodríguez-Ramos, Marta Ramírez, Vicente Muñoz, Manuel Crespo, Marta de las Casas, Miguel Sánchez, Elisa Caballero, Michael Duncan, Ignacio María Aberg, Francisco Javier Arizaleta , Camino Álvarez, Laura Abasolo, Jesús Romero, Juan Antonio Mielgo, José Luis Gómez Navarro, Emilio Maillo, Aitor Goyenechea, Laura Encinas, Fiona Maharg, José María Hoyos, Gonzalo Martín Villa, David del Val, Juan Campillo, Patrick López and Miguel Arias.

Authors:
Christoph Steck, Andrea Fabra, Eusebio Felguera, Fernando Menéndez, Gonzalo López-Barajas, Jonny Shipp, Paloma Villa and Raquel Carretero.

We are interested in your opinions and feedback, please feel free to contact us:

E-mail: TefPublicPolicy@telefonica.com
Web: www.telefonica.com/manifiesto-digital

Edition:
Telefónica, S.A.

Consultancy and design:
Hill+Knowlton Strategies

Legal deposit:
M-28022-2018

Want to know more?
Digital version and videos available at:
www.telefonica.com/digital-manifesto