Technology and inequality
A fairer and more prosperous world

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FTF | Fundación Innovación Bankinter
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Technology and inequality. A fairer and more prosperous world

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Thank you so much

Fundación Innovación Bankinter
The world as we know it is changing, and it is happening faster than ever. Society, the economy, and technology are inextricably linked: they’re the starting point we need to reflect from when we think about the path our current innovations are taking us on. The big question is: can technology eradicate, or at least reduce, the world’s inequalities? And further still: are recent technological developments leading us to a more equitable world... or quite the opposite?

Both answers are true. Experts that gathered at the latest Future Trends Forum (FTF), organised by the Fundación Innovación Bankinter, agreed that technology forms part of the problem (it leads to greater inequality, destroys jobs, etc.) whilst simultaneously forming part of the solution (it offers universal access to basic services and gives greater power to individuals).

Can this be solved? Yes, but by no means is it an easy challenge. Investing in communications networks or distributing devices in less privileged parts of the planet are positive steps, but they’re not enough to guarantee a more equal and democratic world. The ball is in the court of public institutions, which are responsible for creating a breeding ground (entrepreneurship support policies, civil liberties, training in new professional skills, etc.) that fosters the productive usage of new technologies, whilst simultaneously producing general improvements to society and the economy.

Technology is destroying employment but it’s increasing egalitarianism at the same time. It creates opportunities for the masses, it gives resources to the masses that before would only ever have reached the elites. Technology is a component of globalisation: it’s reaching every corner of the world. Technology can be used to unite society, just as it can be used to divide it.

Adrian Wooldridge
Management editor and Schumpeter columnist at The Economist.
**Technology and employment: how will the future look?**

It seems undeniable that the automation of certain tasks is replacing jobs at a faster rate than new positions are being created. This is causing a huge fracture in society, amplifying the rich-poor divide. Jobs that require creativity and expertise are multiplying, often those that require the use of computers, as well as those that entail unskilled labour. Thus, a ‘polarisation’ is occurring in the workforce whilst we see a ‘draining’ of the middle class, where there is no easy solution. Can online education rescue future employment prospects? Would a universal income system make the transition less painful?

**Moving towards universal access to culture**

“Education is the most powerful weapon which you can use to change the world”, said Nelson Mandela. But now, well into the twenty-first century, the reality shows that quality education is still not well-distributed. Further still, something is wrong in a world where talent cannot find work and companies cannot find talent. Some possible solutions for a more efficient education system are:

**Solutions to make higher education more accessible**

- Shorter, more flexible courses
- Online training
- The introduction of crowdfunding
- More company financing

**Solutions to align universities with job market needs**

- Involve companies in designing course content
- Customised online training (‘Serious games’)
- ‘Bootcamps’

**Solutions to improve youth employability**

- Online student mentoring
- Scaled platform for identifying talent at an early stage

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*Richard Klivel*
Advisor, entrepreneur, Professor at MIT, and Chief Operating Officer at IXCELA (The Internal Fitness Company).
Technology is producing inequality, but technology itself isn’t the problem.

Soumitra Dutta
Dean of Cornell College of Business and trustee of Fundación Innovación Bankinter.

We assume technology generates productivity and subsequently leads to stronger growth, but it’s a false assumption.

Ivan Rossignol

The goal of higher education must be twofold: first, to raise the average level of education of society as a whole, and second, to develop elite talent.

Ángel Cabrera
President of George Mason University.

We would be able to send alerts and recommendations to people via SMS or mobile phone app.

Uschi Schreiber
Chair of the Global Accounts Committee and EY’s Global Vice Chair.

Health: a universal right

In 30 years, human beings will be able to live up to 120 years old, maintaining a reasonable quality of life. Advances in the early diagnosis and treatment of cancer, genetic investigation and artificial intelligence are some of the forms of innovation that will make this possible.

We are moving towards preventive and personalised medicine, faced with the reactive and mass model that is currently in place, which should not only be more sustainable (in 2050, 22% of the global population will be over 60 years old, according to the WHO), but also more efficient, at least in developed countries.

There is still a long way to go to do away with inequality in the field of healthcare. Inequality in the field of healthcare represents not only a social injustice, but also an immense cost for public coffers. According to ‘conservative estimates’ of the European Commission, this cost can oscillate between 1.5% and 9.5% of the Gross Domestic Product (GDP). Can technology reduce this gap, and contribute to extending the lives of all communities in society? The answer is yes.

Some technologies with high potential are:

- Wearable technology
- Big Data and cognitive intelligence
- 3D Printing
- Drones
- Blockchain
- The Internet of Things
- Nanotechnology

Social networks for collaborative learning
Crowdsourcing
More and better public information about education courses and what they can lead to

Solutions to adapt education to a continually changing world

- Remote education
- MOOCs
- Educational start-ups
A great example of how a State can contribute to the technological development of a country can be found in Singapore. In thirty years, we’ve gone from being a developing country, to a developed country.

Tan Chin Nam
Former Permanent Secretary and Singapore Public Service and Senior Corporate Adviser.
Organisations in the Digital Age need:

- More horizontal, flexible structures
- Collaborations with start-ups (open innovation)
- To hire more Millennials and let them advance within the company
- Lose the fear to experiment

Business innovation in the twenty-first century

The business environment is another big factor that marks a country’s prosperity. The reason is simple: companies create work. This is why matters such as how easy it is to start a new business, the level of bureaucracy, legislation with respect to bankruptcy and labour flexibility can determine the difference between employing few or many people, between success and failure, or between happiness and unhappiness.

As well as all this, we have to take another context into consideration, marked by aggressive global competition, which forces organisations to fully rethink their organisation structures, their business models, their strategies for capturing and retaining talent, and even their corporate cultures. In the twenty-first century, only companies that are able to innovate at the rhythm dictated by the market will survive. And everybody, businesses and employees, are taking risks on this journey.

Digital transformation takes place using technology, but there is much more to it.

Singapore

A great example of how a State can contribute to the technological development of a country can be found in Singapore. By the end of the 1960s, this country emerged as a manufacturing hub for cheap transistors and other basic devices, but over the years this has evolved. It invests 2.2% of its GDP in research and development, and is considered as one of the easiest countries in the world in which to do business.

Singapore’s transformation has been progressive and constant. With no less than seven national technology development plans behind it, it started to orient itself towards providing basic training for all citizens, then in the creation of new job positions, labour specialisations, attracting capital, technological development and, finally, innovation.

Now, a new national plan acts as an umbrella over all previous programmes. Baptised as the Smart Nation Initiative, its objective is to make the most of the Internet of Things to create a ‘smarter’ country.

One of the characteristics that distinguishes Singaporean society is its deep respect for government institutions, and its almost blind confidence in the political class, where meritocracy trumps favouritism.

As well as the long-term vision of the Government and the country’s cultural characteristics, we also have to take into account the public investments made to create a high-quality university system, a global commercial vision and a lax, progressive tax regime, which promotes entrepreneurship and attracts foreign investments.
Entrepreneurs: source of disruption

Entrepreneurs are necessary because they are the source of innovation. Furthermore, starting a business offers a work opportunity for many talented young people. Of course, not all start-ups will change the world, nor will they all innovate on the same level, but their contribution to economic and social progress is fundamental. For this reason, increasing their visibility could work as an incentive for many other young people (and those who are not so young) to follow this path.

As well as public recognition, entrepreneurs need the following factors to improve their chances of success:

- Cloud computing
- Training
- Access to financing
- Less bureaucracy
- Beneficial regulations in the case of insolvency
- Taxation that attracts start-ups and business angels

The role of the authorities

Technology belongs to its users. It is created by them, and for them. However, public institutions - both national and supranational - are able to influence, at the very least, the speed at which a new technological market develops. In the end, the public sector is responsible for ensuring progress that results in greater wealth... for everybody.

Nevertheless, there is a perception that public administrations and regulators are always one step behind; that consumers are the ones that mark the rhythm of innovation.

The way governments act is important because it directly influences the capacity of companies to adopt new technologies (without a clear legal framework, for example, many investments are postponed or moved to other regions). Digitised companies are not only more efficient, but they also open their operating range to a greater number of potential clients. Innovate or die, that is the question.
Furthermore, the digital availability of public services, such as online access to the police, health, the management of documents and permits, or digital identification, can contribute enormously to the perception of prosperity in a country. Did you know that one and a half billion people in the world don’t have an official ID document?

Some classical digital acceleration measures suggested by economists are:

- New growth strategies:
  - Boost R&D investments
  - Support the growth of strategic sectors
  - Education and training
  - Transparent regulatory changes

- Trade development:
  - Promote global value chains
  - Competition policies

- The socialisation of technological benefits:
  - Facilitate technology purchases
  - Promote mobility

“It is the responsibility of public bodies to consider the most significant challenges faced by a society and how to tackle them, to think about what kind of society we want to build and what steps need to be taken to get there. For a company, the world simply moves forward too quickly”, added Uschi Schreiber, global vice chair and chair of the Global Accounts Committee of EY. Governments in themselves are not a factor of a country’s prosperity, but their work undoubtedly contributes to generating it... or destroying it.

Spain: the challenge of youth unemployment

The first major problem for Spain is its fast rising and ludicrous youth unemployment rate: 46.5% (Labour Force Survey, 2nd quarter of 2016). The country is facing the real possibility of a ‘generation loss’. The result will be disastrous, both in terms of costs for the public administration, as well as poor perspectives for the future of young people.
The best way of invigorating an economy and reducing inequality is to support entrepreneurs, given that they are the ones who bring about innovation.

Iqbal Quadir
Founder and Director Emeritus, Legatum Center at MIT.
At the same time, many young people who do work do so intermittently, on a part-time basis or in positions for which they are over-qualified, causing a lack of motivation.

Unusual, complex problems don’t often have easy solutions. Training is the most effective tool to improve professional and economic aspirations among the population. Currently, Spain has the highest rate in Europe of school dropouts and major stigmatisation of professional training.

Furthermore, the increased costs of attending university has contributed to weakening universal access to higher education. 29% of young Spanish people say that they cannot afford higher education, and another 27% say that they have no time to study because of work, according to the study ‘Training for employment. Ensuring that young Europeans are in work’, elaborated by McKinsey.

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**Israel**

Thanks to the invention of drip irrigation and, subsequently, other technologies applied to agriculture, medicine and the military sector, this small country of 8 million inhabitants has become a hub for technological innovations. All large technology-based companies in the world have an R&D centre in Israel. The high technology sector represents 40% of exports and employs 24% of the country’s workforce.

Israel is the result of an unprecedented mixture of a creative and nonconformist culture, good universities, military discipline and well-considered political decisions. The ex-prime minister Shimon Peres personally became involved in the development of a leading technology industry.

In 1993, the Israeli government created a fund of venture capital funds called Yozma (‘initiative’ in Hebrew). The philosophy was simple: if a private investor was willing to risk capital in a start-up, the Israeli Government would help to inject more money. Yozma also granted tax incentives to foreign investors. The experiment worked, and the number of start-ups and foreign investments soon multiplied. Currently, Israel’s Government continues to play a crucial role in this ecosystem, giving grants that cover up to 80% of the costs of starting a new project. Besides Yozma, the Executive created the Office of the Chief Scientist, under the authority of the Ministry of Economy, which helps projects in sectors or areas where there are greater difficulties in finding financing.

The country is also working on attracting international talent, for which reason the Government recently approved the ‘Start-up Visa’, a residence permit for up to one year for foreign entrepreneurs.

The current Israeli economy is not exempt from challenges. The country faces high inflation and increasing social inequality. To encourage the integration of communities such as ultra-orthodox jews in the productive system, the Government of Benjamin Netanyahu is promoting involvement from within its curriculums (making the most of differentiated schools) for subjects such as mathematics, and even building specific universities and start-up accelerators, where business ideas can be developed.
Unemployment is not only affecting new generations. The crisis and the automation of many work positions have created an incredibly difficult situation for people of all ages, many of whom have few options to retrain and find a new job. In the EU-28, Spain has the second highest rate of long-term unemployment, behind Greece. According to data from the 2015 Eurostat, 11.4% of Spanish citizens have been unemployed for more than one year, seven points higher than the average of the community.

Faced with a lack of job offers, young people, as well as those who are not so young, are choosing to start their own businesses. According to the report’s national edition, GEM 2015, \textit{5.7\% of the Spanish population between 18 and 64 years old is involved in entrepreneurial initiatives} (and has been for between 0 and 3.5 years). This represents a 4\% increase with respect to 2014 data. However, almost one in every four

\hspace{2cm} \textit{Public authorities' main issue is that they're always late to climb every technological wave. And as such, regulation tends to be out-of-date and incomplete.}
We still haven’t clarified what new institutions will come from the next shift in the business world. We are still a way from understanding the macroeconomic changes new business ecosystems and the collaborative economy will bring.

Chris Meyer
CEO of Nerve LLC.
12 FTF proposals to fight inequality in the world

1 Recognise the Internet as a human right. The Internet - without restrictions or censorship - is the door to a whole host of basic services. The establishment of infrastructures that would make this possible would take place, primarily, through public-private partnerships.

2 Digital mentors based on artificial intelligence. Another of the most supported proposals among FTF experts was to develop an artificial intelligence system capable of building digital mentors that could help students - regardless of their economic status - to choose academic courses, choose a place of study, create a curriculum, etc. Given that this would be a virtual system, it could be applied to training individuals throughout their lifetimes. And with good reason, given that, in the Digital Era, citizens will need to keep training throughout their professional careers.

3 Digital ‘exam’. Make children between 10 and 12 years of age take a test - potentially online - to verify their main aptitudes and abilities, particularly those related to personality and digital knowledge. This would allow teachers and mentors to better adapt to pupils’ needs, strengthening them in the areas that best correspond with their talents.

4 Introduce crowdfunding into the education sector, in such a way that companies can fund the studies of disadvantaged pupils who have high potential, who would be identified in advance thanks to Big Data.

5 Open Data in the healthcare sector. Open and updated information, in the field of health and medical research, has saved more lives than many health and pharmaceutical innovations have in recent years. The FTF has also suggested that this open information could develop into a greater degree of ‘open innovation’.

6 Mobile application to quickly report incidents in the public sphere. Corruption and public uncertainty are problems that can be tackled via simple technologies, such as a mobile application to quickly and anonymously submit reports. This technology could also be applied to the corporate sphere, compensating ‘whistleblowers’ with tax benefits, or other kinds of benefits.

7 Digital bank of intellectual property. Large businesses can make intellectual property that they do not use accessible to SMEs and entrepreneurs, so that they are able to create new products and services. In return, they can share ownership of new creations and charge a small fee.

8 Digital bank of skills. This would entail large companies integrating their internal training programmes and making them available to SMEs, students and entrepreneurs, in exchange for a fee that could be subsidised by public bodies or non-profit organisations.

9 Introduction of specific KPIs (Key Performance Indicators) on inequality in the report of companies’ social responsibilities, and a legal compulsion to contract suppliers that surpass certain qualifications.

10 Create a collaborative economy platform that contributes to reduced prices and provides access to basic necessities in exchange for a subscription, which could be subsidised by public bodies or charity organisations.

11 Digital transformation of the public sector. Public administrations are in need of restructuring and a dramatic digitisation, which can bring them to the same level of technology as citizens and private companies.

12 Legal compulsion to use a fixed percentage of profits on activities to finance connectivity in rural or deprived areas. As for academic institutions, the provision of public funding could be adapted according to their social impact.
<table>
<thead>
<tr>
<th>Predictions</th>
<th>2016</th>
<th>2018</th>
<th>2020</th>
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<tbody>
<tr>
<td><strong>Corporate</strong></td>
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<tr>
<td>● Sponsor shark-tank like programs.</td>
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<td>● Include inequality KPIs their social responsibility reports.</td>
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<td>● Companies to dedicate x% of their profits to bring free connectivity to under privileged areas.</td>
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<td>● Education for employment.</td>
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<tr>
<td>● Suggestion to Bankinter Foundation: 1) Organize government officials, corporate leaders &amp; entrepreneurs for learning tours in different countries. 2) Organize co-creation workshops.</td>
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<td>● Contribute to the new open technology bank.</td>
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<tr>
<td>● Work together to set up a skills platform/bank. Offer it to SME, entrepreneurs, students...</td>
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<td>● Work on IP/ideal bank. Offer everyone the ideas for purchase.</td>
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<tr>
<td>● Take initiative &amp; leadership to engage government. Learning institutions, charity organizations and community to co-create eco-systems.</td>
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<td>● Incubate the ai-based lifelong mentoring program to rebalance (to merit from privilege). Access to best/most appropriate skilling opportunities.</td>
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<tr>
<td>● Create a technology bank for open source unused IP</td>
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<tr>
<td>● Create a skills bank for start ups and open innovation initiatives.</td>
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<td><strong>Civil</strong></td>
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<td>● Education moon shot.</td>
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<td>● AI-Mentor/coach for 15 phis.</td>
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<td>● Education partnership.</td>
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<td>● Efficient, friendly, computerized, public sector as service to citizens.</td>
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<td>● Frame Q. Re-tool the system as an integrated, innovation and skills-based meritocracy for a mobile workforce.</td>
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<td>● Infrastructure of opportunity for job creation.</td>
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<td>● Digital, data based, universal and continuous.</td>
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<td>● Government public services APIs.</td>
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<td><strong>Civil &amp; Corporate</strong></td>
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<td></td>
<td>● Promote young profiles business start-ups. Who?</td>
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<td></td>
<td>● Mind-set + swift. A new global youth apprenticeship (life prep) that pathways to new societal premium: Innovative mind, service heart, entrepreneurial spirit and collaborative outlook.</td>
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<td><strong>Public</strong></td>
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<tr>
<td>● Blockchain applied to election recount.</td>
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<td>● Digital access as a basic human rights for all.</td>
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<td>● Open data in healthcare.</td>
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<td>● Universal digital access to all basic public services.</td>
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<td>● Free wearable devices for all chronic patients.</td>
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<td>● Inclusive Europe movement: 1) Collaboration between national government and EU. 2) A public, private and people partnership. 3) Elementary School with clothes washer for mum. 4) Adult literacy classes. 5) Handhold teacher and parents.</td>
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<td><strong>Entrepreneur</strong></td>
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<tr>
<td>● More fair/balanced stock distribution among a start-up workforces.</td>
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<td>● Meritocracy for 21st century. Use data science to identify talent in the population and provide undeserved talent with opportunities.</td>
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<tr>
<td>● Establish later stage venture funds.</td>
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<td>● Initiators: Philanthropist.</td>
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<tr>
<td>● Recognition and status for proto SMEs. Before start-up registers, it is part of the informal economy. Don’t demonize the mothership of innovation + new business. Over regulated bottleneck.</td>
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<tr>
<td>● Reduced cost of living through physical goods shared economy allowing subscription based universal access.</td>
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<td>● Initiators: entrepreneurs.</td>
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Executive summary.