

Beliz, Gustavo; Basco, Ana Inés; de Azevedo, Belisario

## Article

# Harnessing the opportunities of inclusive technologies in a global economy

Economics: The Open-Access, Open-Assessment E-Journal

### Provided in Cooperation with:

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

*Suggested Citation:* Beliz, Gustavo; Basco, Ana Inés; de Azevedo, Belisario (2019) : Harnessing the opportunities of inclusive technologies in a global economy, Economics: The Open-Access, Open-Assessment E-Journal, ISSN 1864-6042, Kiel Institute for the World Economy (IfW), Kiel, Vol. 13, Iss. 2019-6, pp. 1-15,  
<https://doi.org/10.5018/economics-ejournal.ja.2019-6>

This Version is available at:

<https://hdl.handle.net/10419/191238>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

## Harnessing the opportunities of inclusive technologies in a global economy

*Gustavo Beliz, Ana Inés Basco, and Belisario de Azevedo*

### Abstract

In this paper the authors propose that G20 countries endorse and facilitate the creation of a T20 digital platform for “Accelerating the Jobs of the Future”. In a world driven by a new wave of technological change, the platform would revalue the role of think tanks, research institutions and knowledge hubs to move the global agenda in an issue of central importance for the future of society: the creation of the jobs of the future. Building on and complementing existing experiences, the T20 platform would be a digital hub for producing knowledge, informing policies and connecting potential partners to accelerate the jobs of the future, within the context of an increasing integrated global economy. It would also contribute to the development of consensual views among the research community, allowing to discard extreme visions about the jobs of the future, dispelling both overly optimistic visions with no evidence base and unwarranted fears.

(Published as [Global Solutions Paper](#))

**JEL** J01 E24 F66 O30

**Keywords** Employment; future; digitalization; technology; industry 4.0; artificial intelligence; skills; inequality; gender gap; G20

### Authors

*Gustavo Beliz*, Institute for the Integration of Latin America and the Caribbean, Inter-American Development Bank (INTAL-IDB)

*Ana Inés Basco*, Institute for the Integration of Latin America and the Caribbean, Inter-American Development Bank (INTAL-IDB)

*Belisario de Azevedo*, Institute for the Integration of Latin America and the Caribbean, Inter-American Development Bank (INTAL-IDB), [belisariod@iadb.org](mailto:belisariod@iadb.org)

**Citation** Gustavo Beliz, Ana Inés Basco, and Belisario de Azevedo (2019). Harnessing the opportunities of inclusive technologies in a global economy. *Economics: The Open-Access, Open-Assessment E-Journal*, 13 (2019-6): 1–15.

<http://dx.doi.org/10.5018/economics-ejournal.ja.2019-6>

Received September 14, 2018 Published as Economics Discussion Paper October 9, 2018

Accepted December 18, 2018 Published January 14, 2019

© Author(s) 2019. Licensed under the [Creative Commons License - Attribution 4.0 International \(CC BY 4.0\)](#)

## 1 Challenge

*“The New Industrial Revolution brings new challenges to enterprises, workers, consumers, governments, research institutions, industry organizations and the society as a whole. New industry and business models will be established and supersede conventional ones; workers will need to adapt to new job profiles and skills requirements; the integration of innovative new technologies needs to be enabled; infrastructure, standards and policies might need to be developed or adjusted to adapt to the new environment.”*

*G20 New Industrial Revolution Action Plan, 2016 Hangzhou Summit  
Hangzhou, September 5, 2016*

The global economy is going through a new phase of technological revolution that is characterized by automation, digitalization and connectivity. Technologies such as the internet of things, cloud computing, big data, artificial intelligence (AI) and 3D printing, among others, are impacting on all aspects of economy and everyday life, shaking the traditional models of production, commerce and integration and modifying the configuration and the dynamics of work (Basco et al., 2018).

These changes bring new opportunities to increase productivity, international trade and common prosperity. Smart phones and the Internet of Things (IoT) have made digital data abundant and ubiquitous. Big data analytics and decision making in real time have a positive impact on the efficiency of the entire value chain, and digital platforms allow expanding markets and sharing information with the productive ecosystem. The valuation and flow of this data reduces transaction costs, limits distance restrictions and increases the efficiency of organizations. Greater connectivity accelerates the dissemination of ideas and allows users around the world to make use of new research and technologies, leading to the emergence of new innovative companies. The expansion of internet access also increases market efficiency by reducing barriers to entry (Meltzer and Lovelock, 2018). Moreover, the progressive implementation of robotics and artificial intelligence technologies generates cost reductions and improvements in occupational health and safety of working conditions (Gemma, 2017).

Notwithstanding the opportunities, there are also genuine concerns about the possible impact of these changes on jobs and social cohesion. “As we move into this revolution, in which advances in technology are increasingly rapid and profound, concerns about the future of the labor market multiply: will the robots end-up getting our jobs?” (Pagés and Ripani, 2017) Indeed, technological change impacts on the dynamics of employment and raises the possibility of losing jobs to intelligent machines. The fundamental question, to which Frey (2017) refers to as “the most important battle of the 21st century”, is not whether jobs will be lost (that is already happening), but whether societies will be able to create enough new jobs, jobs of the future, to compensate the loss.

According to a survey<sup>1</sup> conducted by Latinobarómetro and INTAL on more than 20 thousand Latin Americans in 18 countries of the region, more than 70% of people consider AI

---

<sup>1</sup> Visit: <https://intal-alianzalb.iadb.org/>

and robotics as a threat to jobs and employment (Basco, 2017). Similar results have been found across Europe and the USA. Now, these fears are probably exaggerated; however, because these are emerging technologies and trends, there is a persistent gap in terms of definitions, diagnosis and measurement tools to understand the phenomenon and grasp its potential consequences, and no proven recipes that guarantee successful results (Nofal et al., 2018; Uhlig et al., 2018). Governments, companies, international bodies and people in general are faced with the challenge of deciding in an era of uncertainty.

The problem is not a lack of research -in the last years there have been countless reports about industry 4.0 and the impact of new technologies on the economy and the labor market- but the enormous variance of methodologies and results. While Cadena et al. (2017) from McKinsey Global Institute posits that automation will raise productivity in the world economy by 0.8% and 1.4% of GDP annually, Ovanessoff and Plastino (2018) from Accenture say the impact could be even double that by 2035, if AI is treated methodologically as a new factor of production all together. Rao (2018) from PwC in turn refers to a 14% accumulated impact on global GDP already in 2030. Uncertainty about the impact of automation on jobs is even more acute. Depending on the methodology used, scenarios vary from almost status quo to massive global unemployment – see Chelala (2018) and Sartorio (2017) for more information on this ongoing debate.

Related ongoing debates revolve around the ability of existing social safety nets to manage the transition (Calvo, 2017); the distributional implications of these changes, both within and across countries (Sundararajan, 2017); the skills that will be required for the jobs of the future, and whether educational frameworks and labor regulations are suited for driving this change (Pounder and Liu, 2018); the shape of effective policies and institutions to foster innovation and allow companies, particularly SMEs, to adapt (Nübler, 2017); and the challenges that developing countries, especially LDCs, are facing to participate in the creation of jobs in increasingly globalized and knowledge-intensive value chains (Korinek, 2018).

In brief, turning new technologies into opportunities for the creation of quality jobs in the future requires a better understanding of the changes in motion, as well as a deeper awareness of the risks involved. Think tanks and research organizations have ample room to help in this area.

## **2 A T20 platform for “Accelerating the Jobs of the Future”**

Given the challenges described, the proposal is for G20 countries to endorse and facilitate the creation of a T20 platform for “Accelerating the Jobs of the Future”. Open to all think tanks, research institutions and universities of the G20, multilateral development banks and international organizations, the digital platform would give the T20 a more visible and institutionalized setting for thinking about the challenges and opportunities of technological change for the creation of jobs.

The platform would aim to accelerate the adaptation of economies to new technologies to make the most of the opportunities they provide for a fair and sustainable development. For that purpose, the platform would produce and disseminate analytical material, promote high-level forums, connect public-private experiences, design policy solutions and drive collaborative

initiatives to improve the understanding of the changes underway and their impacts, reduce uncertainty and facilitate the creation of quality future jobs.

In a global context marked by the overlap of competitive strategies for the development of new technologies and the lack of multilateral approaches to the global challenges involved, the platform would have the value of emphasizing the need for collaborative solutions and global dialogues. It would also highlight the importance of evidence-based analysis and recommendations, ensuring comparable, transparent and open source methodologies, to reduce uncertainty and eliminate undue fears about jobs in the future. Finally, the platform would revalue the role of think tanks, research institutions and knowledge hubs to move the global agenda and provide effective solutions for workers, companies and policy-makers in an issue of central importance for the future of society.

## **2.1 The rationale: Harnessing the opportunities of inclusive technologies in a global economy**

*“G20 countries share the opinion that the digitalization of production has an impact on institutions and infrastructure and may act as a driver for global growth, including creating new jobs, but at the same time may potentially lead to other effects, especially on employment, transforming jobs and automating tasks. (...) Therefore, through exchange of expertise and best practices, G20 countries can encourage digital transformation in production, especially for MSMEs. This includes gaining an in-depth understanding of the impact of digitalization on economic development and particularly of how it can be harnessed in the service of industrialization and economic development in general.”*

*G20 Digital Economy Ministerial Declaration:  
Shaping Digitalization for an Interconnected World*

*April 7, 2017, Düsseldorf*

Although, as we have seen, there is clearly no consensus on the impact of technological change on future jobs, this does not mean that we must sit back and do nothing, while we debate about the nature and degree of the impacts that will occur. As Dani Rodrik explains in an interview with INTAL-IDB: “We do not know yet (how this technological revolution will impact jobs). There is always a gap between the incorporation of new technologies and the realization of benefits in terms of generalized wage improvements. Maybe we are going through a similar cycle. However, we do not have to sit idly by, but we must think about the necessary institutional transformations” (Rodrik 2017: 38, translated by the authors).

In particular, while there is uncertainty about the precise direction and the speed of the change, it is clear that the types of jobs that are being created are not the same as those that are being lost (Pernas, 2018a). The key question is what can we do to accelerate the creation of these new jobs, these jobs of the future? Should public policy just facilitate and de-risk, or instead actively invest in making these jobs happen? Rodrik clearly chooses the second option, with a twist, as he proposes to replace the Welfare state by an “Innovation state”. This means, among other things, to “think that the government should be seen as a direct shareholder in the development of robots and new emerging technologies” (Rodrik 2017: 38, translated by the

authors). But what policy instruments should these “Innovation states” develop to harness the potential of new technologies? What are the necessary institutional transformations to boost innovation and facilitate the creation of future jobs? What is the role of other actors, mainly companies, NGOs and academia?

At a global level, governments are already preparing national strategies that promote the evolution towards Industry 4.0 and enhance their capacities to lead in the development of these new technologies, such as AI and 5G. Some areas have already been identified as needing attention, including the need for new infrastructure, new skills, new business models, new efforts to ensure cyber-security, privacy and customer protection, and a redefinition of R&D priorities, programs and institutions, among others (Annunziata and Bourgeois, 2018). Administrations are challenged to guarantee universal access and dissemination of new technologies; reduce unwanted impacts in terms of economic concentration or social equity; define standards and regulatory frameworks that stimulate the emergence of new actors and markets, among others (Basco et al., 2018). However, the increasingly complex, shifting and uncertain nature of the technological revolution underway poses a significant challenge to both policy makers and researchers, requiring continuous updates, permanent interaction between researchers and practitioners, ‘glocal’ perspectives and more flexibility and innovation in policy solutions than ever before.

In this context, the platform would be the T20’s innovative instrument to contribute to these debates about the jobs of the future and influence decision-makers in “building consensus for fair and sustainable development”.<sup>2</sup>

## **2.2 The objective: To accelerate the creation of quality jobs of the future**

Although maintaining a broad reach and vision, the work of the platform will focus on three priority areas that contribute to accelerate the creation of quality jobs of the future. These areas are closely linked to the T20’s innovative, inclusive and gender-sensitive approach, the vision of the G20 and the UN’s Sustainable Development Goals.

**1. Prepare people and society for the jobs of the future.** The aim is to boost the skills necessary to create the jobs of the future and prepare people and institutions for the changes and social challenges that come with them.

As with other technological revolutions in the past, this period of technological change will eliminate some jobs, create new jobs and change the types of skills that people need and the conditions in which they work. This in turn creates two broad challenges.

The first challenge is to develop the skills necessary for the jobs of the future. But what are these jobs of the future? It is very difficult to say. White collar positions, traditionally safe from automation in previous technological revolutions, are now at risk in a world of intelligent machines (Susskind, 2017). Entirely new professions are appearing at the intersection between new technologies, demographic trends, such as aging, and new social demands, such as climate

---

<sup>2</sup> Overview of Argentina's G20 presidency 2018: “Building consensus for fair and sustainable development”. Available at: <http://www.g20.utoronto.ca/2018/2018-Overview-en.html>

change. Jobs linked to technology sectors, green activities and social care are some areas with potential. A new specialty in charge of human-machine interactions in working areas is likely to be increasingly in demand (Basco et al, 2018). New forms of labor organization are also emerging, driven by new business models and the possibility of collaborative economy and autonomous work. It is a future of software developers, computer specialists and professionals of all disciplines working remotely, collaboratively and freelance; a gig, on-demand and sharing future (Salazar-Xirinachs, 2017).

In this context, a mix of hard skills for adding value in an increasingly digital and technology-mediated labor market, and soft skills for differentiating from intelligent machines is becoming increasingly necessary. OECD (2018a) addresses the demand of nine cognitive, non-cognitive and social skills: literacy; arithmetic; skills related to ICT; STEM skills (science, technology, engineering and mathematics); marketing and accounting; management and communication; Problem resolution; self-organization; predisposition to learn. It shows that workers in industrial sectors intensive in digital technologies exhibit, on average, a greater endowment of all these skills compared to workers in less intensive sectors and achieve a greater return for their work. In particular, the skills in ICTs, arithmetic and STEM quantitative skills, as well as self-organization and management and communication skills, seem to be especially recognized and remunerated in the most digitized sectors. Likewise, other studies<sup>3</sup> show an increasing demand oriented towards engineering, code development, informatics, electronics and data analysis, as well as toward skills not based on hard sciences, such as critical thinking and creativity.

Future workers thus need to be well equipped for these new jobs and skill requirements, as well as motivated to train and pursue trajectories related to fast growing industries and occupations less exposed to automation. While this seems simple, Pounder and Liu (2018) show that many young Australian people are currently being trained for tasks and entering jobs that are at risk of automation. “About 60% of Australian students (70% of those who receive training and professional training) are studying or training for occupations in positions that involve a substantial part of tasks that could be automated before 2030. Approximately 70% of young people Australians are accessing their first job in positions that either will be very different or will be completely lost due to automation over the next 10 to 15 years” (Pounder and Liu, 2018).

The second broad challenge is managing the transition to this new job scenario in a fair and sustainable manner, making sure it does not become a new source of inequality. “The lesson that the previous processes of change leave us is that investing in new technologies and adopting them is better for growth and for long-term employment, but also that, throughout the process, the transition is likely to generate winners and losers in the labor market” (Pounder and Liu, 2018). As in previous periods of technological change, workers affected by job loss in declining activities are not those that are benefitting from the new job opportunities emerging in expanding areas. Moreover, labor markets appear to be polarizing, with middle-skilled jobs declining and low- and high-skilled jobs growing (OECD, 2018b). New forms of labor are also

---

<sup>3</sup> McKinsey Global Institute (2017), World Economic Forum (2016) and “Entender el futuro del Trabajo”. Organización Internacional de Empleadores (OIE); February, 2017. Available at: <https://www.ioe-emp.org/index.php?eID=dumpFile&t=f&f=128041&token=b24f69097f4681e635121c33c4f6f761011a508f>

challenging existing social security systems and call for a new social contract, adapted to future working conditions.

Success therefore lies in the ability of the education sector to help develop creative talent in the use and development of exponential technologies, as well as to provide the right mix of skills to successfully navigate ever-changing work environments. But skills development is not just about schools. It increasingly involves lifelong learning and training on the job, as well as entrepreneurial skills that have more to do with developing institutions and “a culture that can encourage risk taking and tolerate failure” (Lakhani 2018: 131). It also requires reimagining social policies to achieve an effective and sustainable labor transition, creating, for instance, transfer programs that incorporate creatively the dimension of training in technological capabilities, or new instruments to “guarantee social security benefits for freelancers” (Krueger 2017: 299). In any case, enhanced social dialogue and concerted efforts between governments, employers, workers and their representatives, including through the development of national strategies can increase the chances that the transition to the jobs of the future will be less painful and overall benefits will be greater (Beliz, 2017).

**2. Foster the participation of developing countries in the jobs of the future.** The aim is to increase the participation of firms and workers from developing countries, particularly LDCs, in the benefits of knowledge intensive Global Value Chains (GVC) that will drive job creation in the future.

“While the debate on the future of employment focuses mainly on developed countries, developing economies have the potential to benefit from new emerging technologies” (Nübler, 2017). It is an opportunity for structural transformation, diversification and increasing complexity of products. It is also a “window of opportunity” for developing countries to benefit from technological transfer, by imitating, learning and innovating.

This technological revolution is no different. With small infrastructures dispersed in the urban space, an SME in a developing country can be part of deconcentrated global production networks. Fast progress in connectivity allows access to online global markets and marketing channels with small fees and operational costs. The diffusion of ICTs and technologies such as cloud computing, IoT and big data, further reduce the costs of global coordination, including in areas of trade facilitation, with higher potential benefits for developing countries. Emerging technologies such as blockchain can drastically reduce costs, allowing startups and micro and small companies all over the world to become global designers, international brands, multi-market exporters and even single-person multinationals. Cloud computing enhances these opportunities: instead of buying massive IT systems, small businesses in developing countries can rent cloud-based services at very low cost (de Azevedo, 2018). In addition, the democratization of access to specific technologies such as 3D printers, circuit printers and Computerized Numerical Control (CNC) systems, and the availability of open source AI solutions can reduce the importance of economies of scale and foster the emergence of global start-ups in developing countries (Pernas, 2018b).

At the same time, however, these new technologies challenge established patterns of comparative advantage, by reducing the relative importance of wage competitiveness. E-commerce, digitalization of products and services and servification linked to industrial processes enable the fast growth in the participation of knowledge-intensive services (KIBS) in



value generation and international trade.<sup>4</sup> The result is the need for more demanding ecosystems in terms of infrastructure, logistics, human resources, regulatory requirements, supplier base, etc., that benefits suppliers of intellectual and robotic capital, concentrated in developed countries. Meanwhile, companies are encouraged to establish production centers closer to the end customer, benefiting developed countries as well as large and growing markets in Asia (Basco et al., 2018).

A report by Citigroup and Oxford Martin School finds that 70% of Citi's institutional clients surveyed believe that automation will encourage companies to relocate their manufacturing processes to the country of origin (Citigroup 2016). Smart factories, which use sensors and data communication technology to automate production and optimize the value chain, encourage a similar flow of reshoring (World Bank, 2018).

These trends could end-up increasing the challenges that most developing countries face, especially LDCs, to benefit from technological transfer, create innovative firms and expand their participation in GVCs limiting their capacity to create jobs of the future.

How can developing countries benefit from new technologies for economic convergence? What strategies are more effective for developing innovative advantages and integrating into the emerging global productive scenario? What policies can help diversify developing countries' productive and export structure? How to strengthen local innovation in these countries? Are KIBS a new path for income convergence? How can bilateral and multilateral rules foster technological transfer? Are global and regional trade institutions suited for boosting opportunities during periods of fast change? Developing countries face multiple questions and difficult challenges to create the jobs of the future. Encouraging further debate about their specific challenges is an important the first step.

**3. Ensure the equal participation of women in the jobs of the future.** The aim is to develop innovative strategies to close the digital gender gap and foster the fair participation of women in the skills and job opportunities of the future.

How will the future of work look for women? One might think that the ongoing transformation would most likely weaken the position of women in the labor market. Although automation has so far been most common in manufacturing, where men dominate, in the future, automation is expected to spread rapidly in some sectors traditionally dominated by women, such as retail trade, food and beverage services, leaving women potentially more exposed to job elimination or displacement (OECD, 2018c).

Moreover, while women outperform men in overall educational attainment, they remain less likely to pursue studies in the most specialized STEM fields more closely linked to potential new job opportunities. In OECD countries, fewer than 1 in 3 engineering graduates and fewer than 1 in 5 computer science graduates are girls. And even when girls do graduate from scientific fields of study, they are much less likely than boys to work as professionals in these fields, more often choosing to become teachers. Among OECD graduates with science degrees,

---

<sup>4</sup> Conexión INTAL n. 260. Available at: <http://conexionintal.iadb.org/antiores/?nc=n260>

71% of men versus only 43% of women work as professionals in physics, mathematics and engineering (see OECD Database on Gender Equality<sup>5</sup>).

Also, women have generally less access than men to new technologies. According to Basco (2017), in average, almost 65% of men in Latin America have portable computers, against 58% of women; 47% of men in Latin America have a Smartphone, against 41% of women; and 16% of men purchased online in the previous month, against 12% of women. A study by INTAL-BID on the millennial population in Argentina supports these findings (Basco and Carballo 2017). Women use technology less at work than men: only 24% of them declared using "many times" or "all the time" technology in this area, while in the case of men this value rises to almost 30%. Also, men report having greater technological skills than women. For example, in the case of computing, while 82% of men recognize having this ability, this value drops to 72% for women.

These skills gaps limit women's opportunities to profit from the new technologies. A similar picture emerges when looking at entrepreneurship. Women face numerous challenges to financing, owning, and growing businesses, including access to capital, lack of networks and knowledge resources. A report from the OECD and the European Commission shows that in 2016, men were, on average, 1.7 times more likely to be self-employed than women (OECD and European Commission 2017). Similarly, the Global Entrepreneurship Monitor<sup>6</sup> estimates that men are 1.6 times more likely to be new business owners. Given the relevance of entrepreneurship for future value and job creation, this gap puts women at a great disadvantage.

All these indicators stress the need for concerted efforts on developing digital skills among women and reducing barriers to female entrepreneurship. The G20 initiatives "#eSkills4Girls" and "Women Entrepreneurs Finance Initiative" are steps in the right direction.

However, technological change is not all bad news for women. A closer look at the evidence suggests a mixed picture. Indeed, jobs in the future are likely to grow the most in business services, health, education and social services, many of which have been traditionally female-dominated. In addition, more flexible and remote ways of working may make it easier to combine paid work with household responsibilities, which are still more often taken on by women. In the United States, for example, the proportion of female drivers is higher for Uber (14%) than for traditional taxis (8%); and women (42%) are more likely than men (29%) to say that their main reason for driving with Uber is that they "can only work part-time or flexible schedules" because of a "family, education, or health reason" (Hall and Krueger, 2016).

The challenge is to understand better and harness the potential of digital transformation to reduce traditional barriers that women in the workforce have been facing. This, however, will not happen automatically and, without innovative thinking and targeted action, inequalities could even increase (Mariscal et al., 2018).

---

<sup>5</sup> Available at: <http://www.oecd.org/gender/data/wherearetomorrowsfemalescientists.htm>

<sup>6</sup> Visit: <https://www.gemconsortium.org/>

### **2.3 The instrument: A digital place for research collaboration and multi-stakeholder engagement to accelerate the jobs of the future**

With these three priority areas in mind, the proposal is to create a digital place for research collaboration and multi-stakeholder engagement. This platform would seek to complement, not replace existing initiatives, such as the G20 Insights Platform,<sup>7</sup> organized by the T20 to offer policy proposals to the G20. Unlike G20 Insights, that acts as a repository of recommendations to the G20, the T20 platform for “Accelerating the Jobs of the Future” would allow for digital interaction, providing not only access to new knowledge, but also opportunities for knowledge exchange and collaboration between members. Through communities of practice, the platform would provide live and interactive spaces for members to learn about new research and projects related to the jobs of the future, share documents and ideas and contribute to discussions on policy reforms. The platform would also facilitate synergies to achieve concrete impact, by connecting academia and companies, facilitating public-private cooperation, linking offer and demand of knowledge and bringing together innovative ideas with funding opportunities.

The EU Digital Skills and Jobs Coalition<sup>8</sup> provides an interesting background in this area. Created in 2016, the Coalition brings together EU Member States, companies, social partners, non-profit organizations and education providers to tackle the lack of digital skills in Europe. Actions carried through the platform range from training unemployed people and giving Massive Online Open Courses for teachers, to giving coding classes for children and cutting-edge training for ICT specialists. The Coalition also selects innovative projects and shares digital skills initiatives, to be replicated and scaled up across Europe. The Digital Opportunity traineeships scheme for example is a pilot project that allows students and recent graduates an opportunity to get hands-on training in digital fields such as cybersecurity, artificial intelligence, coding or digital marketing in companies who are members of the Coalition.

Along these lines, the eTrade for all platform<sup>9</sup> is a new information-hub, sponsored by UNCTAD, “to help developing countries drive development through e-commerce”. The platform allows companies, entrepreneurs and policy-makers from developing countries to learn about trends and best practices and access up-to-date e-commerce data, but also look for concrete solutions by connecting with potential partners, funding opportunities and ongoing e-commerce initiatives. Likewise, ConnectAmericas,<sup>10</sup> a digital initiative by INT (Integration and Trade Sector) of the IDB, is a social network dedicated to help SMEs in the Americas to grow their businesses internationally. With support from globally renowned companies, such as Google, DHL, Visa and Alibaba, the goal is to address fundamental obstacles that SMEs confront when they seek to expand internationally, by providing access to communities of clients, suppliers and investors in the region and the world, as well as useful information about trade procedures and regulations and financing opportunities.

---

<sup>7</sup> Visit: <http://www.g20-insights.org/>

<sup>8</sup> Visit: <https://ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition>

<sup>9</sup> Visit: <https://etradeforall.org/>

<sup>10</sup> Visit: <https://connectamericas.com/>

Building on these experiences, the platform would be more than a knowledge repository. It would be a digital hub for producing knowledge, informing policies and connecting potential partners to accelerate the jobs of the future. As such, it may undertake the following activities: a) Development and dissemination of unpublished research on the jobs of the future, including diagnostics, prospective analysis and new tools to measure the digital economy; b) Funding of innovative projects to improve educational outcomes, expand digital and entrepreneurial skills, boost SME's participation in GVCs and promote new trends in economic integration and international trade; c) Organization of seminars to promote educational, labor and social institutions with capacity to face the challenges of creating the jobs of the future; d) Dissemination of trainings and strategies to reach target audiences with greater impact: policy-makers, SME entrepreneurs, women, and unemployed and low-skilled workers at greater risk in a context of technological transition, for example; and e) Virtual communities of practice to share experiences and connect researchers, companies, governments, investors and other stakeholders.

The platform would also contribute to the development of consensual views and diagnoses among the research community around the main trends and policy challenges related to the jobs of the future.

A relevant example in this case is the experience of the Intergovernmental Panel on Climate Change (IPCC).<sup>11</sup> Set up in 1988 by the World Meteorological Organization and United Nations Environment Programme, the IPCC provided policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. Although no stranger to critics, the IPCC developed common diagnoses about the definition, trends and challenges of climate change, based on original peer-reviewed research, and was instrumental in putting the issue of climate change high in the global agenda. "(...) The IPCC is a widely recognized example of an inclusive multi-stakeholder platform to achieve consensus on the reality of climate change. The IPCC has served as a basis for designing, implementing and enforcing policies and a global governance system that concluded with the Paris Agreement" (Mialhe and Lannquist, 2018).

Although different in structure and reach, the T20 platform for "Accelerating the Jobs of the Future" would act as an informal place for consensus building on issues related to the jobs of the future. The idea is not new. When launching France's national strategy on AI, President Emmanuel Macron urged to strengthen international coordination and proposed the creation of "an IPCC for AI" (Rabesandratana, 2018). As the IPCC allowed discarding extreme visions about climate change, so would the T20 platform help form consensus, dispelling both overly optimistic visions about the future with no evidence base and exaggerated fears about the (lack of) jobs of the future.

A representative Board comprised of expert members of the platform would provide strategic leadership, summarize and link research to develop, in an inclusive and transparent manner, consensus reports around the main issues of the jobs of the future.

To conclude, as the principal global forum of think tanks and research institutions, the T20 has the legitimacy and capacity to provide evidence-based consensual views, foster cooperative

---

<sup>11</sup> Visit: <http://www.ipcc.ch/>

solutions and shape the policy agenda on the jobs of the future. The challenge is fundamental: the creation of quality jobs of the future, which become a source of prosperity and diminishing inequality among people and countries.

## References

- Annunziata, M., and Bourgeois, H. (2018). The future of work: how G20 countries can leverage digital-industrial innovations into stronger high-quality jobs growth. *Economics: The Open-Access, Open-Assessment E-Journal*, 12 (2018-42): 1–23. <http://dx.doi.org/10.5018/economics-ejournal.ja.2018-42>
- Basco, A.I. (2017). La tecno-integración de América Latina: Instituciones, comercio exponencial y equidad en la era de los algoritmos; INTAL-IDB; November, 2017. <https://publications.iadb.org/handle/11319/8657?locale-attribute=es&locale-attribute=en>
- Basco and Carballo (2017). Compás millennial: La generación Y en la era de la integración 4.0. INTAL-IDB; July 2017. <https://publications.iadb.org/bitstream/handle/11319/8347/Compas-Millennial-La-generacion-Y-en-la-era-de-la-integracion-4-0.pdf>
- Basco, A.I., Beliz, G., and Coatz, D., and Garnero, P. (2018). Industria 4.0: Fabricando el Futuro; INTAL-IDB and Unión Industrial Argentina (UIA); July, 2018. <https://publications.iadb.org/handle/11319/9015>
- Beliz, G. (2017). A sociotechnological contract for Latin America. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB, *Integration and Trade Journal*; 21(42): 11–23. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Cadena, A., Lund, S., Bughin, J., and Manyika, J. (2017). The productivity leap. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*, 21(42): 102–113. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Calvo, C. (2017). Toward a universal citizen income. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB, *Integration and Trade Journal*; 21(42): 324–335. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Chelala, S. (2018). Microdata or Macrodata: An Alternative Measure for the Risk of Job Automation. In: Algoritmolandia: Artificial Intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): 272–287. <https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Citigroup (2016). Technology at work v2.0: The future is not what it used to be. Citi GPS: Global Perspectives & Solutions. Citigroup and Oxford Martin School, January 2016. <https://www.oxfordmartin.ox.ac.uk/publications/view/2092>
- de Azevedo, B. (2018). Proteccionismo 4.0: de la guerra comercial a la guerra por los datos. In *Conexión INTAL*; n. 261; May, 2018. <http://conexionintal.iadb.org/2018/05/30/ideas-1/>

- Frey, C.B. (2017). Workers against robots?. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): 26–34.  
<https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Gemma, J. (2017). Efficiency and the labor market: robots create jobs. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): 190–191. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Hall, J., and Krueger, A. (2016). An analysis of the labor market for Uber’s driver-partners in the United States. NBER Working Paper No. 22843; November, 2016.  
[https://s3.amazonaws.com/uber-static/comms/PDF/Uber\\_Driver-Partners\\_Hall\\_Kreuger\\_2015.pdf](https://s3.amazonaws.com/uber-static/comms/PDF/Uber_Driver-Partners_Hall_Kreuger_2015.pdf)
- Korinek, A. (2018). Income distribution on the planet of the superstars. In: Algoritmolandia: Artificial Intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): 288–296.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Krueger, A. (2017). Interview: “We need to guarantee social security benefits for freelancers”. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB, *Integration and Trade Journal* 21(42): 298–301.  
<https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Lakhani, K. (2018). Interview: “Tolerance of failure is the key to development”. In: Algoritmolandia: Artificial Intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): 46–55.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Mariscal, J., Mayne, G., Aneja, U., and Sorgner, A. (2018). Bridging the gender digital gap. Economics Discussion Papers, No 2018-60, Kiel Institute for the World Economy. <http://www.economics-ejournal.org/economics/discussionpapers/2018-60>
- McKinsey Global Institute (2017). Jobs lost, jobs gained: what the future of work will mean for jobs, skills, and wages. Report, December 2017. <https://www.mckinsey.com/featured-insights/future-of-organizations-and-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>
- Meltzer, J.P., and Lovelock, P. (2018). Regulating for a Digital Economy – Understanding the Importance of Cross-Border Data Flows in Asia. March, 2018.  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3164401](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3164401)
- Miailhe, N., and Lannquist, Y. (2018). A challenge to global governance. In: Algoritmolandia: Artificial intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): 206–217.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Nofal, B., Coremberg, A., and Sartorio, L. (2018). Data, measurement and initiatives for inclusive digitalization and future of work. Economics Discussion Papers, No 2018-71, Kiel Institute for the World Economy. <http://www.economics-ejournal.org/economics/discussionpapers/2018-71>



- Nübler, I. (2017). Transforming production: opportunities for middle-income countries. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): 303–317.  
<https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- OECD (2018a). Towards the implementation of the G20 roadmap for digitalization: skills, business dynamics and competition. Report prepared at the request of the 2017 G20 German Presidency; OECD. [http://www.oecd.org/g20/OECDreport\\_Implementation\\_G20\\_Roadmap.pdf](http://www.oecd.org/g20/OECDreport_Implementation_G20_Roadmap.pdf)
- OECD (2018b). Transformative technologies and jobs of the future. Background report for the Canadian G7 Innovation Ministers' Meeting; OECD; March, 2018.  
<https://www.oecd.org/innovation/transformative-technologies-and-jobs-of-the-future.pdf>
- OECD (2018c). Going digital: the future of work for women. Policy brief on the future of work; OECD; July, 2017. <https://www.oecd.org/employment/Going-Digital-the-Future-of-Work-for-Women.pdf>
- OECD and European Commission (2017). *The missing entrepreneurs 2017: policies for inclusive entrepreneurship*. OECD publishing.  
<http://www.oecd.org/industry/the-missing-entrepreneurs-2017-9789264283602-en.htm>
- Ovanessoﬀ, A., and Plastino, E. (2018). The Productivity Leap. In: Algoritmolandia: Artificial intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44), August, 2018: 27–44.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Pagés, C., and Ripani, L. (2017). Employment in the Fourth Industrial Revolution. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal* 21(42): 262–272. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Pernas, M. (2018a). La próxima generación de empleo. In Conexión INTAL; n. 258; February, 2018.  
<http://conexionintal.iadb.org/2018/02/27/la-proxima-generacion-de-empleo/>
- Pernas, M. (2018b). Inteligencia Artificial: la región se abre al desarrollo. In Conexión INTAL; n. 262; May, 2018. <http://conexionintal.iadb.org/2018/05/30/ideas-2/>
- Pounder, K., and Liu, G. (2018). New Jobs. In: Algoritmolandia: Artificial intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): August, 2018: 254–269.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>
- Rabesandratana, T. (2018). Emmanuel Macron wants France to become a leader in AI and avoid 'dystopia'. *Science*. March 30, 2018. <http://www.sciencemag.org/news/2018/03/emmanuel-macron-wants-france-become-leader-ai-and-avoid-dystopia>
- Rao, A. (2018). A New Phase in Globalization. In: Algoritmolandia: Artificial Intelligence for a predictive and inclusive form of integration in Latin America; INTAL-IDB; *Integration and Trade Journal* 22(44): 46–55.  
<https://publications.iadb.org/en/integration-and-trade-journal-volume-22-no-44-july-2018-planet-algorithm-artificial-intelligence>

- Rodrik, D. (2017). Entrevista: “Debemos impedir la fragmentación del mercado de trabajo”. In: Robot-lución: El futuro del trabajo en integración 4.0 de América Latina; INTAL-IDB, *Integration and Trade Journal* 21(42): 36–40. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Salazar-Xirinachs, J.M. (2017). The metamorphosis of work. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): 71–83. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Sartorio, L. (2017). Automatización, empleo y comercio: ¿qué nos dice la literatura económica?”In: Conexión INTAL; n. 253; October, 2017. <http://conexionintal.iadb.org/2017/10/02/automatizacion-empleo-y-comercio-que-nos-dice-la-literatura-economica/>
- Sundararajan, A. (2017). Crowd-Based Capitalism. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): August, 2017. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Susskind, D. (2017). White-collar unemployment. In: Robot-lución: The future of work in Latin American integration 4.0; INTAL-IDB; *Integration and Trade Journal*; 21(42): 274–282. <https://publications.iadb.org/handle/11319/8487?locale-attribute=es&>
- Uhlig, A., Rapetti, M., Abrieu, R., Mathur, V., Aneja, U., Chetty, K. (2018). Technological innovation and the future of work: a view from the south. Policy Brief for the T20; Future of Work. May, 2018. [http://www.g20-insights.org/policy\\_briefs/technological-innovation-and-the-future-of-work-a-view-from-the-south/](http://www.g20-insights.org/policy_briefs/technological-innovation-and-the-future-of-work-a-view-from-the-south/)
- World Bank (2018). Trouble in the making? The future of manufacturing-led development. World Bank Group; September, 2017. <http://www.worldbank.org/en/topic/competitiveness/publication/trouble-in-the-making-the-future-of-manufacturing-led-development>
- World Economic Forum (2016). The future of jobs: employment, skills and workforce strategy for the fourth industrial revolution. Global Challenge Insight Report. January, 2016. [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf)



Please note:

You are most sincerely encouraged to participate in the open assessment of this article. You can do so by either recommending the article or by posting your comments.

Please go to:

<http://dx.doi.org/10.5018/economics-ejournal.ja.2019-6>

The Editor