



# HUMAN CAPITAL 2.0: THE FUTURE OF WORK IN THE AMERICAS

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## KEY STATISTICS

- **Robots and technology are more and more accessible.** The quality-adjusted price of industrial robots decreased by 80% between 1990 and 2005. Automation of production processes will increase in the coming years.
- **This will have a major impact on employment.** [McKinsey \(2017\)](#) estimated that around 51% of jobs in the United States are susceptible to being replaced by automation by 2050. The World Bank (2016) estimates that this figure is at around 57% in OECD economies. At the global level, [McKinsey \(2017\)](#) estimates that automation could impact 1.1 billion employees and US\$ 15.8 trillion a year in wages.
- **We need more and better skills.** The education level required in tech and automated jobs is higher than in jobs that are being replaced by technology ([McKinsey, 2017](#); [Kaiser Foundation/NY Times/CBS News](#)). However, it is estimated that 13% of activities carried out by university-educated professionals could eventually be automated ([McKinsey, 2017](#)).
- Although inequality has decreased in Latin America and the Caribbean (LAC), there is concern that technology will undo this trend.

## INTRODUCTION

**Explosive advances in technology promise to bring about major changes in the working world.** Robotics, artificial intelligence, big data, 3D printing, biotechnology, the cloud and cryptography will give way to an endless stream of new goods and services. This will require new jobs, new employee training and new interactions between employers and employees. Technological advancements will also enable the automation of many tasks.

**The jobs of the future will be more flexible.** On the one hand, employees will have more freedom to choose where and when they want to work. On the other hand, the new jobs will be more informal and temporary. This, together with the lack of regulations and audit capacity by government agencies will cause some uncertainty with respect to the lack of protection for these future workers.

These structural changes will determine the skills needed to join the labor markets of the future. In fact, experts predict a considerable increase in demand in information systems and technology skills (e.g., programming) and soft skills (e.g., effective communication and customer service).

## DIAGNOSTIC AND TRENDS

Accelerated technological change has the potential of modifying the nature and availability of jobs.

**Digital technologies contribute to abundant new forms of employment.** The ability to be permanently connected and communicating through network platforms, together with easy access to major flows of information, enable the rise of the on-demand economy, the sharing economy platforms, and more flexible labor relations of shorter duration. On the one hand, it offers an opportunity to create jobs, especially by generating conditions to incorporate groups that have been traditionally excluded from the labor market. On the other hand, it becomes necessary to establish regulations and consensus to address increased levels of unprotected and informal labor.

**The separation between human and automated activities turns vague.** Activities such as driving vehicles, running ad campaigns in social networks and even playing board games (go, chess) have experienced the arrival of artificial intelligence and automation. This stresses the potential of machines replacing<sup>1</sup> humans. As mentioned earlier, this comes hand in hand with lower tech prices (robots<sup>2</sup>, micro-processors, artificial intelligence, among others).

**The impact of new technologies on labor markets is huge.** Recent studies estimate that technologies available today can be adapted to automate occupations<sup>3</sup>. This figure is 51% in the United States and 57% in OECD countries. At the global level, automation will impact 1 billion workers, accounting

<sup>1</sup> Alphabet's *AlphaGo* program defeated the best Go player in the world, Ke Jie, in 2017..

<sup>2</sup> Graetz y Michaels, 2018.

<sup>3</sup> McKinsey, 2017.

for US\$ 15.8 trillion in wages. This is why the biggest challenge is the expected transition of millions of workers from obsolete jobs towards other sectors of the economy.

Cross-sector and tech skills will be essential in the labor markets of the future

**The arrival of new technologies implies changes in the set of skills sought by employers.** Cognitive skills (such as creativity, abstract thinking and complex problem solving), and soft skills associated with social intelligence (such as proactive learning and communication), will be highly significant in a world where technology will take over the routine aspects of the job. Furthermore, skills associated with technological development (such as use and management of new technologies, programming, information design and database management), and systems skills (monitoring and assessment) will be crucial. Finally, in a more interconnected and international world, language skills (especially English) will be essential.

Technology promises to invigorate work environments

**Automating the routine aspects of the job<sup>4</sup> can lead to more creative and challenging work environments.** This would give workers space to invest more time on communication, creative innovation and strategic interaction with clients or providers. This is particularly true with highly qualified staff<sup>5</sup>. Additionally, labor relations could be more flexible and promote a better work-life balance.

Digital platforms unlock new tools for inclusion, training and internationalization

**Online training has the potential of reaching large segments of the population, even those that have been**

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<sup>4</sup>Such as scheduling meetings, financial reporting, etc...

<sup>5</sup>Gibbs, 2017.

**traditionally excluded.** The arrival of ICTs to large segments of the population in LAC, together with the development of new learning and training platforms, have the potential of increasing the coverage, efficiency and effectiveness of job training. This is particularly true in digital skills technical training, where there will be a significant increase in demand.

**Digital platforms can also ease the transition between different jobs.** Platforms such as LinkedIn or Trabajando.com, or platforms for freelancers such as Upwork, can simplify the job search. This is crucial given the large number of job displacements caused by technological disruption.

**Digitalization favors the internationalization of exportable goods and services,** as well as the growth of sectors that will require intensive maintenance and use of technology such as health, child and adult care, agribusiness and tourism, among others. Small local businesses can start to compete in international markets thanks to the interconnection and possibility of outsourcing and leasing by tech companies<sup>6</sup>.

More and better training will help us be successful in the Fourth Industrial Revolution

**Permanent technological advancements require constant update of training material.** This reality changes the traditional role of instructors and/or professionals. In the future we will need mentors and continuous orientation and coaching that is constantly being updated given the advances in technology in the work environment.

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<sup>6</sup>IDB, 2017.

## THE ROLE OF THE PRIVATE SECTOR

1. Strategically adapt to identify and create the workforce of the future

**The private sector will be in the forefront of the impact of new technologies on skill demands.** Companies must prioritize to identify the skills they need instead of positions, titles and tasks. Skills, more than staff trained in specific activities, will render companies more flexible and better able to deal with a changing economic environment.

**Innovation requires changes in management practices.**<sup>7</sup> These changes can have a better impact than investments in technology, innovation and personnel<sup>8</sup>. The private sector by adopting better management practices in areas such as monitoring, defining goals and metrics, and structuring incentives can help technological advancements have a positive impact on productivity.

2. Work on recognizing on-the-job training and promote training paths for workers

**Recognize previous on the job training as an integral part of the worker's value.** For example, by certifying an individual, without a college education, in Excel/Word to perform certain accounting tasks would not only benefit the worker but any future employer that will be able to save the cost of having to teach these activities.

**Develop national skill qualification frameworks.** These frameworks must include regionally recognized credentials based on skills, which must be accumulative. Today,

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<sup>7</sup>Bloom et al 2014, Verhoogen et al 2017, Bloom et al 2017.

<sup>8</sup>IDB, 2017.



technology offers many shortcuts (e.g., Microsoft, [Amazon](#) and [Google](#) issuing e-certificates for their platforms) and there are many international standards (global services skill profiles) that many companies do not know about or do not know how to use. This is highly relevant due to the fact that LAC has a large non-educated non-certified population.

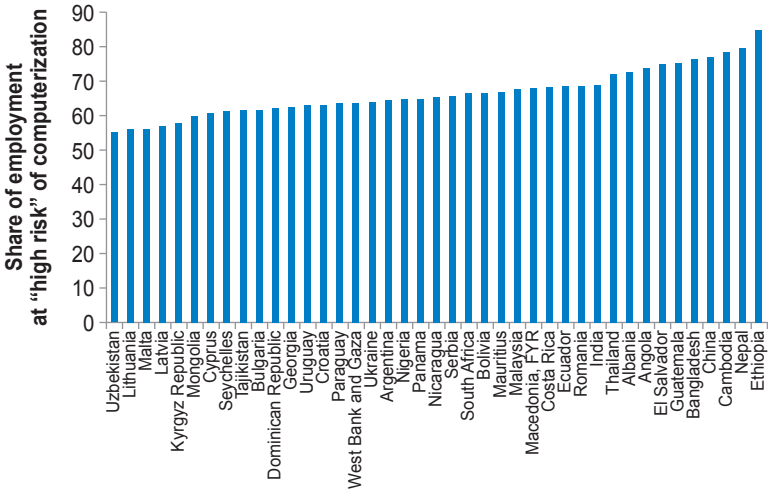
### 3. Establish effective public-private collaboration strategies for training

**Develop new public-private programs to address skill gaps.** A combination of resources (public, private, individuals) and comparative advantages (between the productive sector and the public sector) is required in order for public and private investment to converge and deliver in optimal quantities. The productive sector must lead in identifying and developing the necessary skills to satisfy the demand. Once this demand has been identified it is essential to work with the government in bridging these gaps (e.g., through apprenticeship contracts, training subsidies and others).

**Training investment is cost effective.** Evidence shows that by strengthening soft skills business sales and productivity increase in LAC.

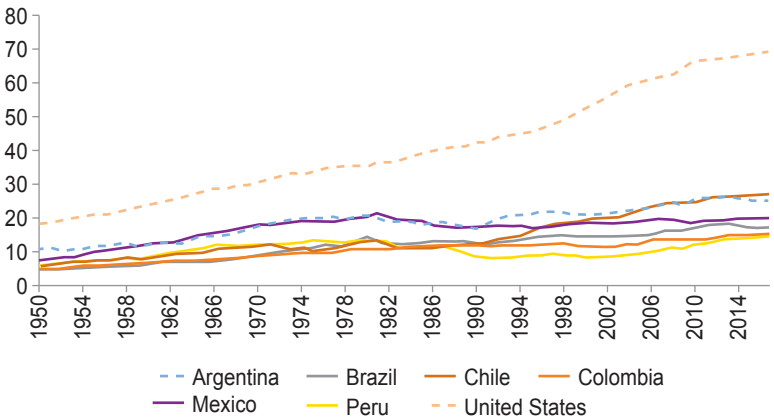
## ATTACHMENTS

Automation susceptibility in developing countries



Source: City GPS.

Productivity per hour, 2016 US\$



Source: The Conference Board Total Economy Database™. May 2017.