DIGITAL TRANSFORMATION AND PUBLIC EMPLOYMENT

THE FUTURE OF GOVERNMENT WORK

EDITORS | Miguel Porrúa · Mariano Lafuente · Edgardo Mosqueira · Benjamin Roseth · Angela María Reyes

IDB

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PROLOGUE

This book brings together a new opportunity and a pending challenge.

The new opportunity is digital transformation. Digital transformation is among the priorities of many governments because of its great potential for greater transparency, faster and more accessible services from anywhere and at any time, fewer opportunities for corruption, and greater efficiency in public sector institutions. In a region characterized by low productivity, socio-economic inequality, and low trust in government, digital transformation offers an opportunity to move toward the solution to many of our challenges.

The COVID-19 pandemic heightened the urgency of this agenda. From one day to the next, the restrictions on mobility imposed by the lockdowns compounded the challenges that our countries already faced. Among the numerous complications created by the pandemic, the lockdowns caused many citizens to have to confront the difficult decision whether to leave their homes, stand in line at a government institution, and risk their health to obtain a public service that they needed. For their part, many public sector officials confronted a similar choice: protect themselves from the pandemic by staying home or miss work. As we have seen, the governments furthest along in the digital transformation process managed to limit these unfortunate situations, achieving an optimal balance between the restrictions imposed by the lockdowns and continuity of public services.

The pending challenge is public sector employment. In Latin America and the Caribbean, we have a long history of diverse challenges in managing the civil service: huge payrolls, high turnover of professionals, political influence in selection processes, and limited incentives for professional development, among others.

What connects this new opportunity with the old challenge? It is simple: civil servants are necessarily at the heart of digital transformation for government. They are the ones who design, implement, and take advantage of the new tools. Digital transformation is not something that is acquired or achieved overnight; rather, it is built by people.

This book analyzes this nexus: the challenges associated with human capital brought about by digital transformation and how we can overcome them. The challenges are divided into two groups: the **drive** toward digital transformation and **adaptation** to it. To drive digital transformation, governments need digital specialists, professionals with abilities in high demand in the labor market. Institutions and civil servants also must adapt to all the changes that digital transformation brings, such as new tools, tasks, functions, and ways of working.

This topic is at the heart of what we do in the IDB's Institutions for Development Sector equip the State with the tools to meet the demands of the citizen of the 21st century, taking advantages of 21st century tools. We are pleased to contribute to such an important debate. I invite you to carefully read the book, *Digital Transformation and Public Sector Employment: The Future of Government Work.*

Moisés J. Schwartz
Manager, Institutions for Development Sector, Inter-American Development Bank.

ACKNOWLEDGEMENTS

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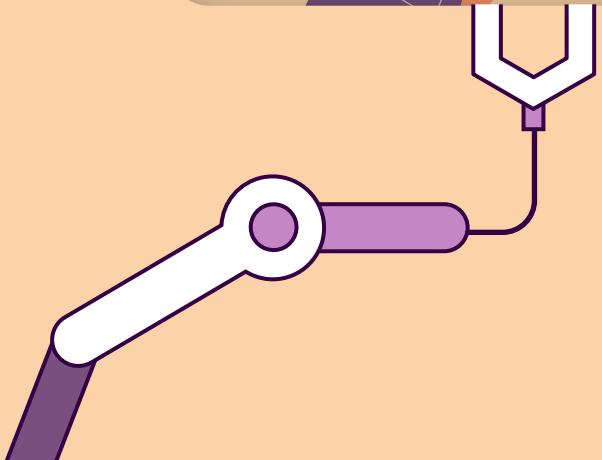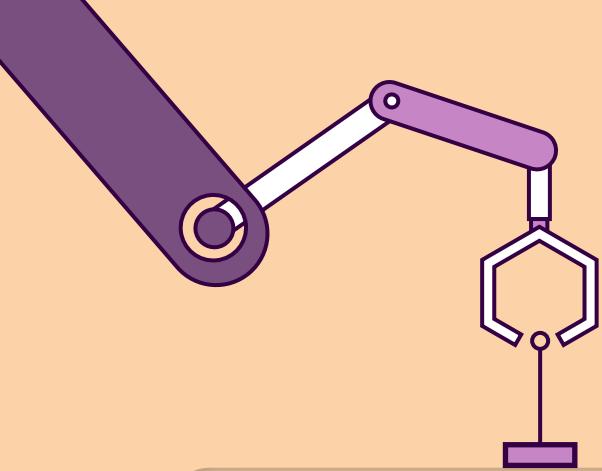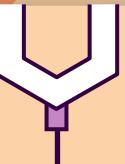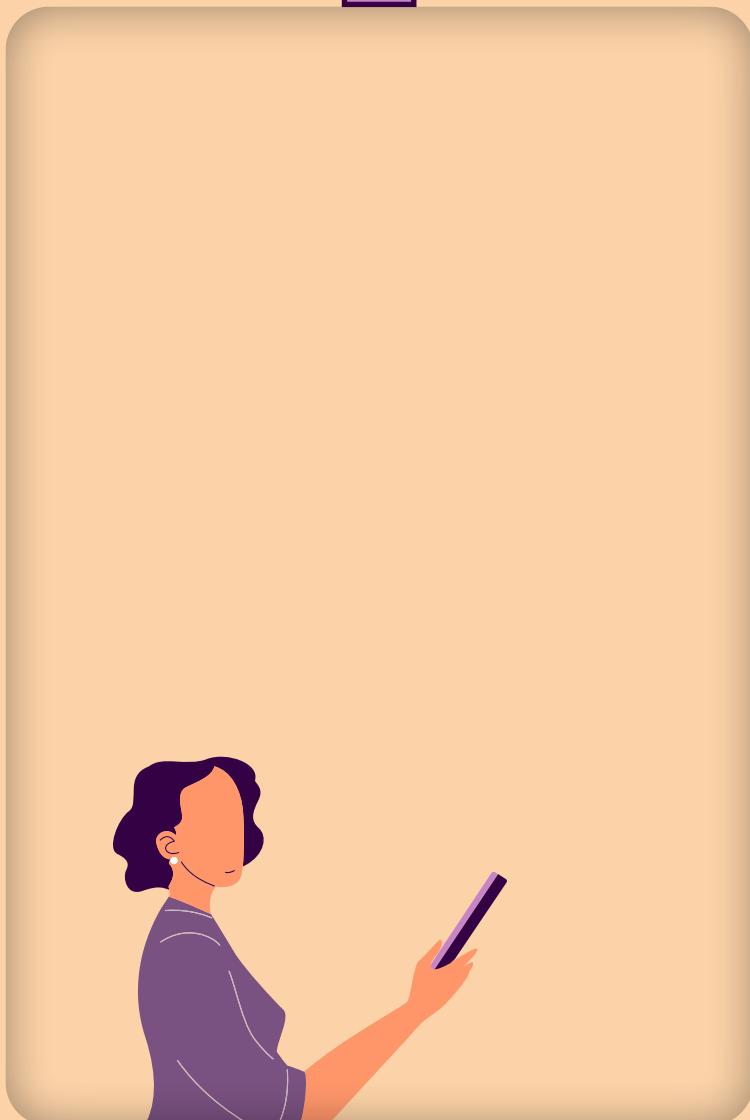
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**DIGITAL TRANSFORMATION
AND PUBLIC EMPLOYMENT**

The Future of Work
in Government

EXECUTIVE SUMMARY

GOVERNMENT DIGITAL TRANSFORMATION IS AS MUCH HUMAN AS IT IS DIGITAL

Government digital transformation and human talent management agendas are intimately related. No digital transformation is possible unless there are digital specialists to carry it out and civil servants that are capable of properly implementing the new technologies. The connection between the digital agenda and human capital management is both undeniable and inescapable. However, their alignment is not automatic and calls for new human capital management policies and processes.

This book centers on the need to incorporate human capital management in the public sector into the debate on the digital transformation of government. It analyzes both the **drive** toward digital transformation (the creation and implementation of new technological systems) and **adaptation** to it (the use of new digital tools and the corresponding reorganization of work).

Although the book was planned before the onset of COVID-19, the pandemic has made its publication even more urgent. To comply with lockdowns and social distancing rules, many governments used digital tools to maintain their operations and continue providing services to their citizens. This sudden transition enabled many governments to appreciate the potential of digital transformation to not only improve the quality of public services, but also to optimize public spending. Governments have also been able to identify which challenges still need to be tackled to exploit the full potential of digitization. These include the changes in human capital management policies and processes that would provide the knowledge, capacities, and skills needed to undertake a profound digital transformation of public administration.

This book presents new evidence on the implications of digital transformation for the management of human capital in the public sector. Three surveys more were carried out: one of them included more than 700 Latin American public managers, another queried 25 digital government authorities in the region and three leading countries in digital transformation at the global level, and a third asked more than 9,300 Chilean civil servants about their degree of preparedness for digital transformation. Moreover, the authors analyzed global experiences managing human capital throughout the introduction of integrated financial management systems (IFMISs) in the period 1980–2010. They also studied recent cases to find out how leading institutions have addressed the disruptions that digital transformation has brought to the workplace. This book has also benefited from the Inter-American Development Bank's (IDB) experience in supporting the implementation of digital transformation and the modernization of civil service management in the region in recent decades.

CHALLENGES IN HUMAN CAPITAL MANAGEMENT FOR DIGITAL TRANSFORMATION IN LATIN AMERICAN AND CARIBBEAN PUBLIC ADMINISTRATIONS

The majority of the region's governments have not examined the relationship between human capital management and digital transformation in depth. Although many governments generally recognize the need to strengthen civil servants' information and communication technology (ICT) capacities, no detailed assessment has been conducted in this regard. This scenario contrasts with the approaches adopted by the world leaders in digital government. For example, in the digital strategies of Canada, Estonia, Israel, Singapore, Spain, and the United Kingdom there is a more complex approach that tackles the need to build ICT capacities as well as to strengthen digital leadership, deepen the knowledge of cutting-edge topics, and promote new forms of work that support digital transformation.

Latin American and Caribbean (LAC) governments have not viewed digital transformation as a key input for public strategic workforce planning. This differs from what happens in other countries, such as the United Kingdom, where a large part of the civil service strategic vision is directed toward enabling public employees to adapt to the new digital context,[1] or Estonia, where the role of technology is largely built into the skill set required from senior public management.[2]
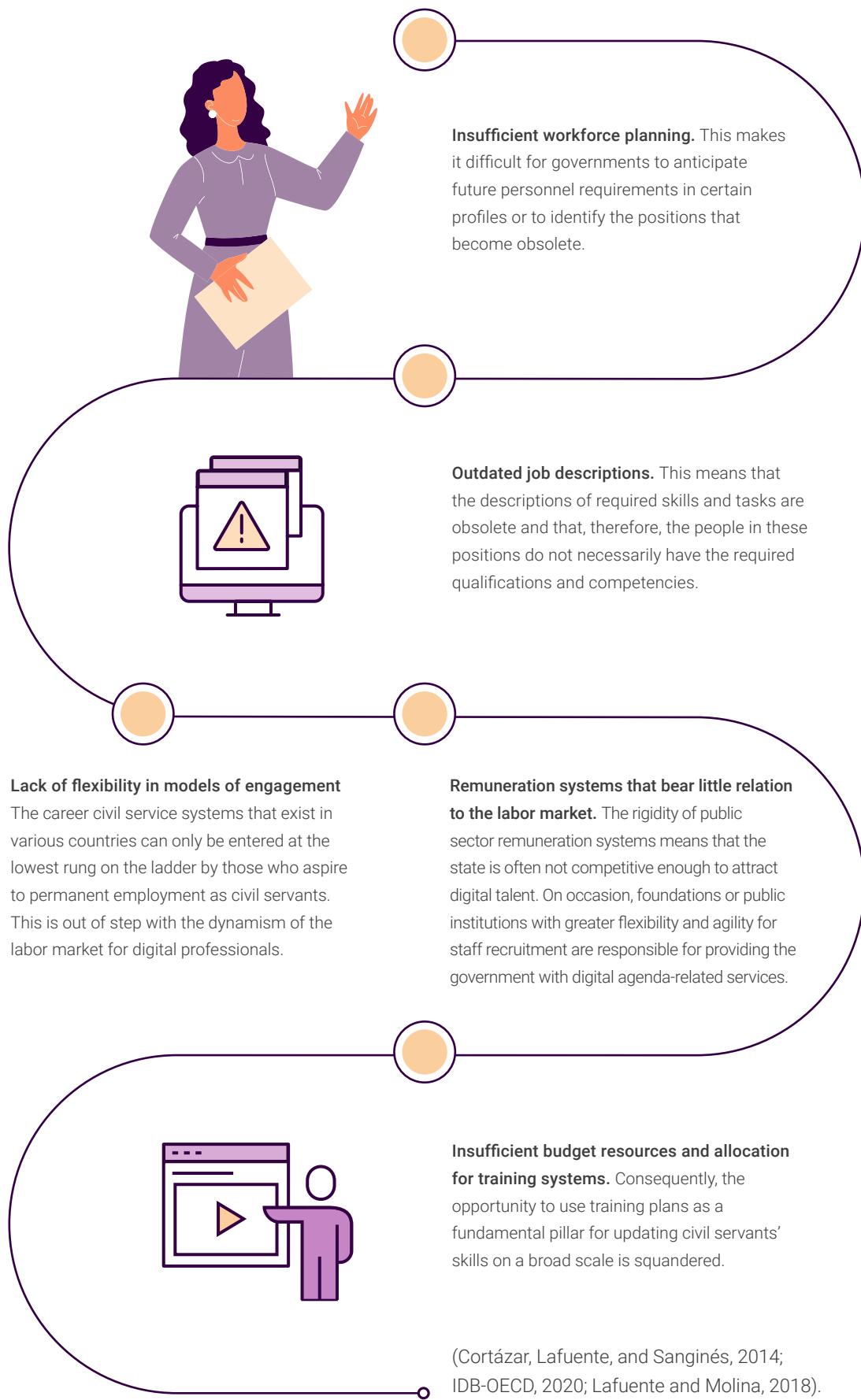
THE CHALLENGES FOR DIGITAL TRANSFORMATION POSED BY HUMAN CAPITAL MANAGEMENT REFLECT THE STRUCTURAL CHALLENGES IN CIVIL SERVICE MANAGEMENT IN THE LAC REGION.

The following are some of the most common gaps that directly impact the management of human talent in the context of digital transformation:
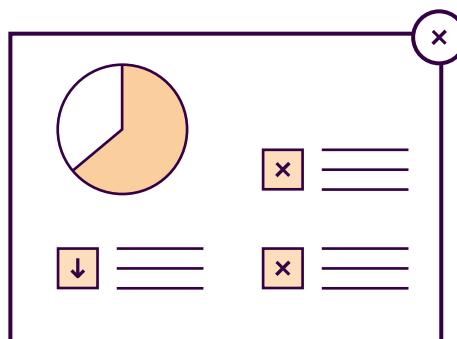
1. See the United Kingdom Civil Service Workforce Strategy 2016–2020.

2. See the Competency Framework for Top Executives in Estonia.

3

Insufficient workforce planning. This makes it difficult for governments to anticipate future personnel requirements in certain profiles or to identify the positions that become obsolete.

Outdated job descriptions. This means that the descriptions of required skills and tasks are obsolete and that, therefore, the people in these positions do not necessarily have the required qualifications and competencies.

Lack of flexibility in models of engagement The career civil service systems that exist in various countries can only be entered at the lowest rung on the ladder by those who aspire to permanent employment as civil servants. This is out of step with the dynamism of the labor market for digital professionals.

Remuneration systems that bear little relation to the labor market. The rigidity of public sector remuneration systems means that the state is often not competitive enough to attract digital talent. On occasion, foundations or public institutions with greater flexibility and agility for staff recruitment are responsible for providing the government with digital agenda-related services.

Insufficient budget resources and allocation for training systems. Consequently, the opportunity to use training plans as a fundamental pillar for updating civil servants' skills on a broad scale is squandered.

(Cortázar, Lafuente, and Sanginés, 2014; IDB-OECD, 2020; Lafuente and Molina, 2018).

THE HUMAN CAPITAL GAP IN THE DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATIONS IN LATIN AMERICA AND THE CARIBBEAN
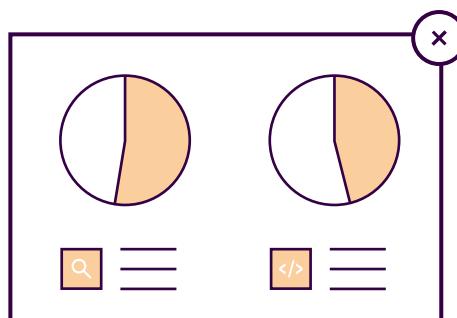
Given the scant attention to the alignment of human capital management with the needs of digital transformation, as well as the structural weaknesses of civil service management in the region, it is hardly surprising that the majority of public administrations face the following challenges:

64 percent of the 718 Latin American public managers surveyed reported having participated in the last five years in a technology project that **faced difficulties due to a shortage of skills among the personnel responsible** (IDB-COPLAC, 2019).

51 percent of the Latin American managers surveyed reported **facing a severe or very severe shortage of data analysis skills,** whereas 40 percent reported a lack of training for programming skills and software development (IDB-COPLAC, 2019).

The leaders of digital government authorities reported **facing talent shortages in a variety of skills,** such as data analysis, project management, and quality and customer orientation (see Figure ES.1).

Many LAC digital government authorities **lack professionals in key activities such as change management,** digital content accessibility, user experience, content design, and cloud management (see Figure ES.2).
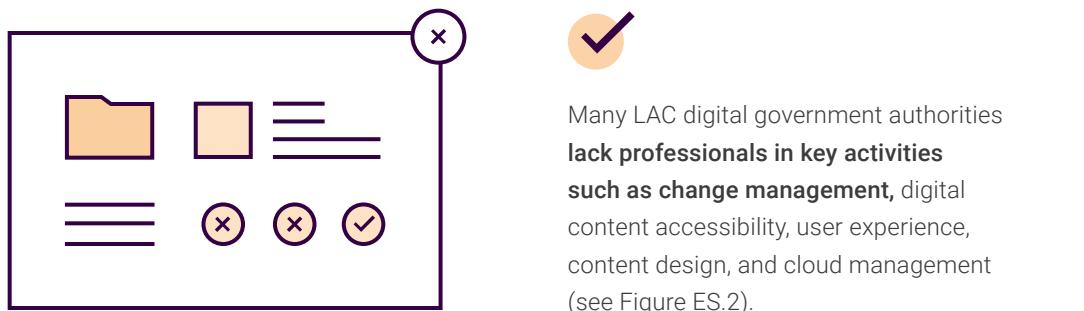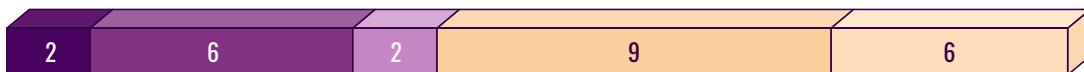
FIGURE ES.1 Skills Shortages Faced by Digital Government Authorities
(Affirmative responses in a total of 25 countries, LAC only)

Data analysis

| 3 | 11 | 5 | 4 | 2 |

Project management

| 2 | 6 | 2 | 9 | 6 |

Quality and customer orientation

| 1 | 6 | 10 | 6 | 2 |

Technology skills

| 5 | 8 | 7 | 5 |

Results orientation

| 2 | 2 | 5 | 11 | 5 |

Socio-emotional skills

| 1 | 3 | 12 | 6 | 3 |

Knowledge of public sector rules

| 1 | 9 | 7 | 8 |
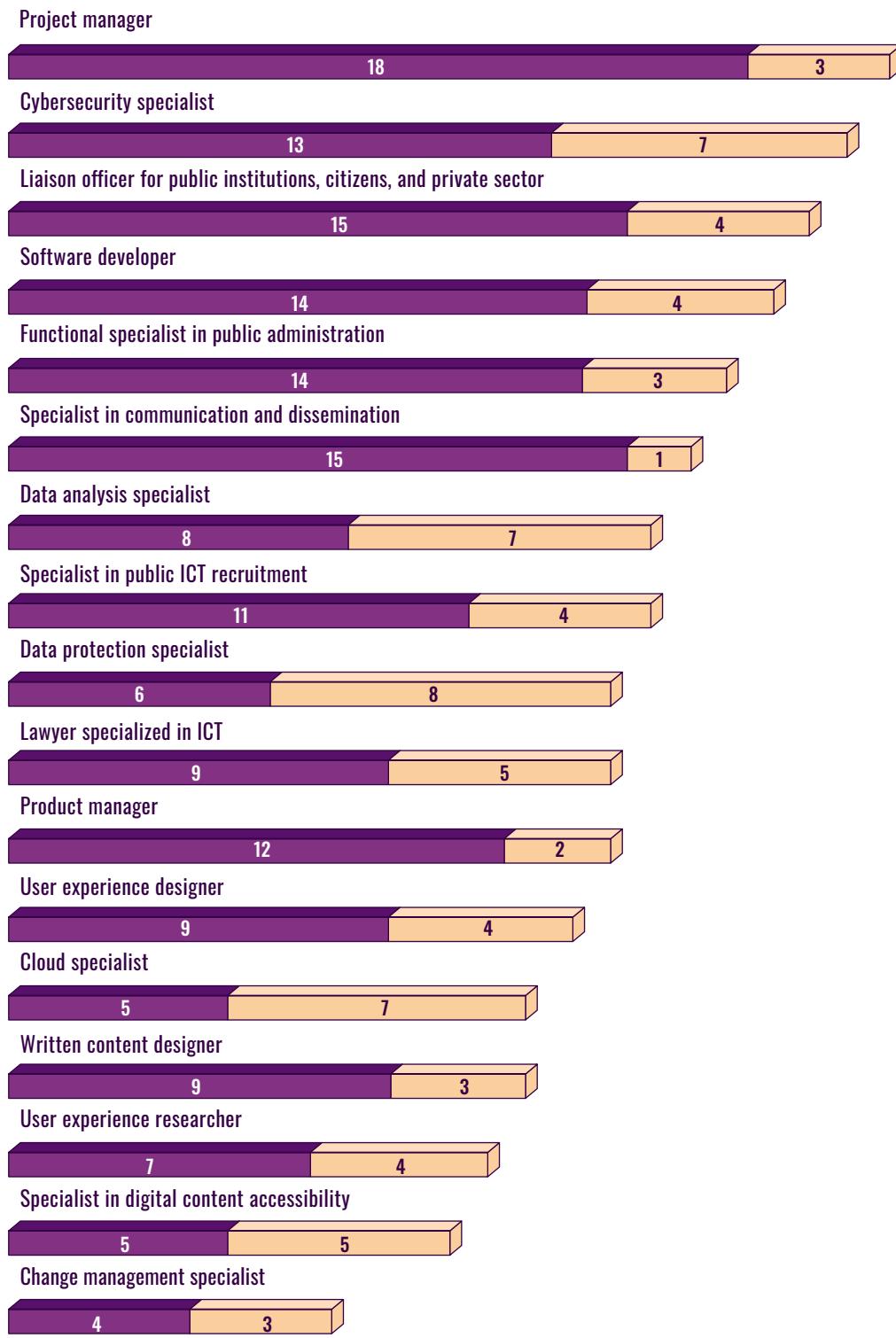
⬢ Severe shortage ⬢ Serious shortage ⬢ Moderate shortage ⬢ Minimal shortage ⬢ No shortage

Source: Authors' elaboration based on the IDB-GEALC survey (2019).

Note: The full response options were: (i) data analysis; (ii) project management; (iii) quality and customer orientation, both internal and external (citizens and firms); (iv) digital technology skills, such as programming and software development, technology architecture, etc.; (v) results orientation ; (vi) soft skills, such as adaptability, curiosity, flexibility, and perseverance; (vii) knowledge of public sector rules and procedures; and (viii) any other area in which there is a significant shortage: _____.
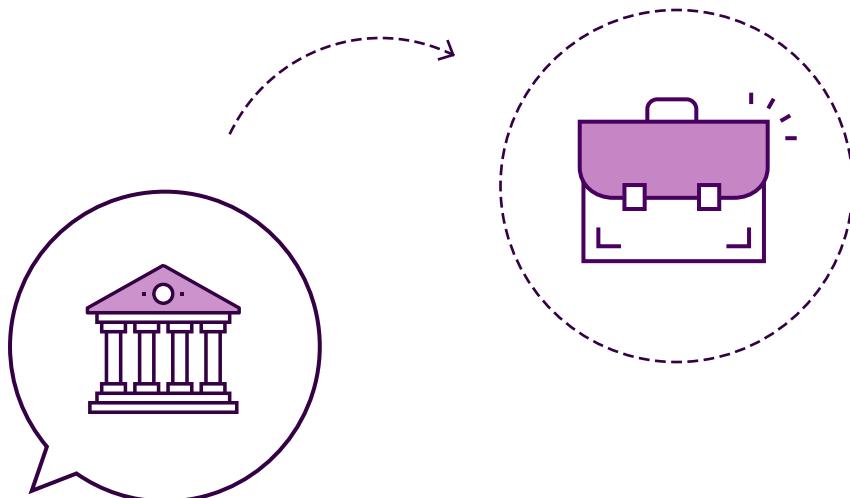
FIGURE ES.2 For Which of the Following Functions Do You Have At Least One Person Working Exclusively?
(Affirmative responses in a total of 25 countries, LAC only)

Project manager

| 18 | 3 |

Cybersecurity specialist

| 13 | 7 |

Liaison officer for public institutions, citizens, and private sector

| 15 | 4 |

Software developer

| 14 | 4 |

Functional specialist in public administration

| 14 | 3 |

Specialist in communication and dissemination

| 15 | 1 |

Data analysis specialist

| 8 | 7 |

Specialist in public ICT recruitment

| 11 | 4 |

Data protection specialist

| 6 | 8 |

Lawyer specialized in ICT

| 9 | 5 |

Product manager

| 12 | 2 |

User experience designer

| 9 | 4 |

Cloud specialist

| 5 | 7 |

Written content designer

| 9 | 3 |

User experience researcher

| 7 | 4 |

Specialist in digital content accessibility

| 5 | 5 |

Change management specialist

| 4 | 3 |

◆ Full time   ◆ Part time

Source: Authors' elaboration based on the IDB-GEALC survey (2019).

WHAT ACCOUNTS FOR THE PERSISTENCE OF HUMAN CAPITAL SHORTAGES IN THE DIGITAL TRANSFORMATION OF LAC GOVERNMENTS?

THERE ARE THREE MAIN REASONS FOR THE SHORTAGE OF HUMAN CAPITAL NEEDED FOR THE DIGITAL TRANSFORMATION OF LAC GOVERNMENTS: (I) LIMITED AVAILABILITY IN THE LABOR MARKETS OF PROFESSIONALS WITH DIGITAL KNOWLEDGE AND SKILLS; (II) INSUFFICIENT BUDGET RESOURCES ALLOCATED TO COVER HUMAN CAPITAL NEEDS; AND (III) LACK OF APPROPRIATE OF CIVIL SERVICE MANAGEMENT POLICIES AND PROCESSES.

1

SHORTAGE OF PROFESSIONALS WITH DIGITAL KNOWLEDGE AND SKILLS

In LAC, the relative scarcity of specialized digital talent takes various forms. According to a report published in 2020 on the availability of skills in 60 countries around the world, the 11 participating LAC countries were ranked between 41st and 58th in technology skills (Coursera, 2020). In data science skills, Argentina was ranked highest, at 22nd.

The limited availability of technology skills is also seen in the private sector, where demand for digital talent far outstrips supply (Basco et al., 2020). The shortage of professionals with digital skills in LAC is due, at least in part, to the incipient state of training in this area (Basco et al., 2020; National Science Board, 2018).

2

LACK OF BUDGET RESOURCE ALLOCATION

Seventy-four percent of the digital government managers surveyed reported that budget limitations prevented them from hiring the necessary staff in the preceding year (see Figure ES.3). It is worth highlighting, however, that this point is not limited to LAC countries, since Estonia and Spain reported similar difficulties.
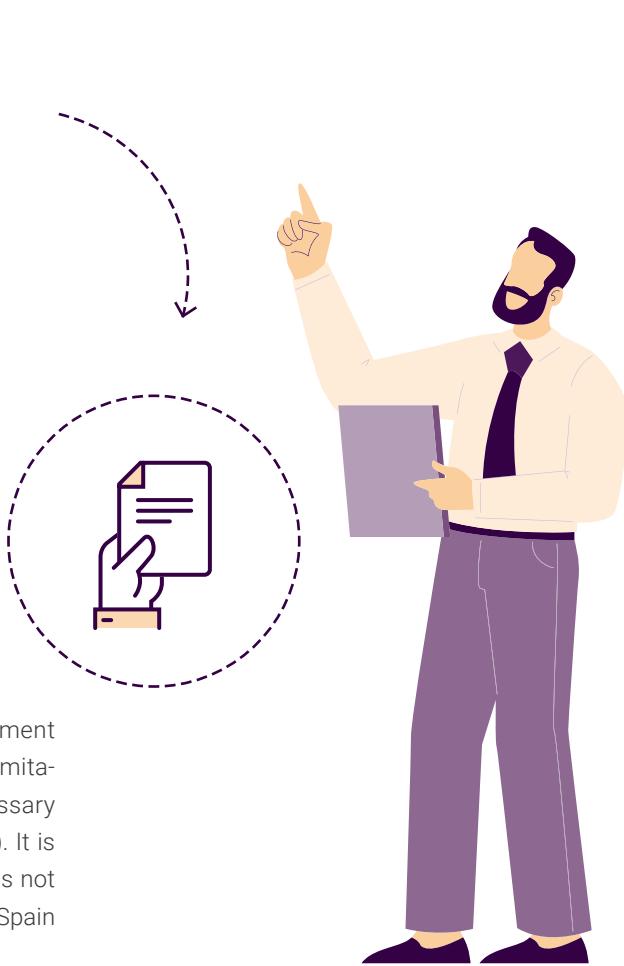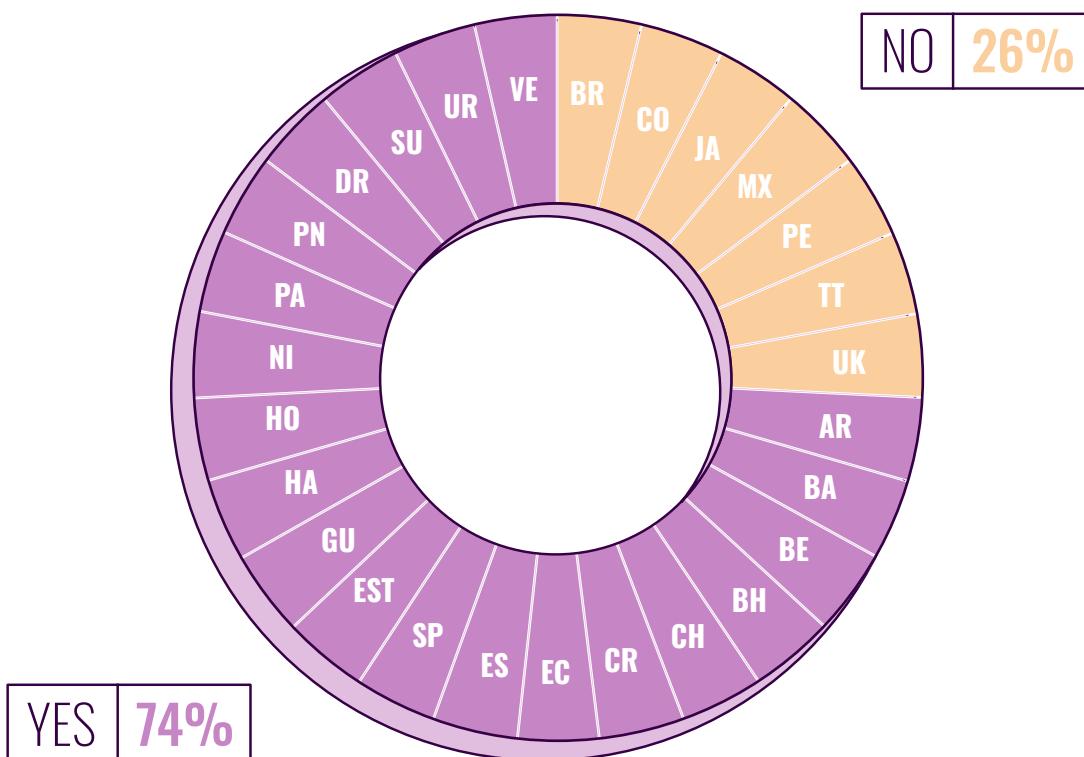
FIGURE ES.3 In the Last Year, Has a Lack of Budget Prevented You from Hiring the Necessary Staff?

NO 26%

YES 74%

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).
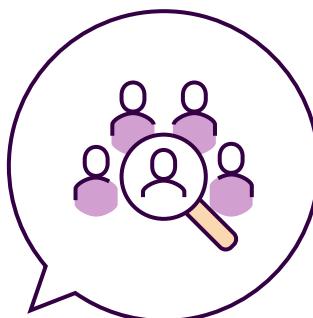
Note: SP= Spain, EST= Estonia, UK = United Kingdom.

3

OUT OF DATE CIVIL SERVICE MANAGEMENT POLICIES AND PROCESSES

The policies and procedures of human capital management should be tailored to attract, recruit, manage, retain, and motivate civil servants with the capacities and knowledge required for digital transformation. However, civil service management in LAC faces structural challenges that stand in the way of this purpose. At the strategic level, civil service authorities and human resource units in public institutions are usually limited to performing only an administrative role rather than promoting public policy. At the operational level, there are significant weaknesses in most areas of human capital management, ranging from planning to work organization (types of job descriptions and staff composition) and employment management (recruitment, selection, etc.), and the management of compensation, performanc,e and development (space to grow professionally and training).

For example, in 2020, only 41 percent of the region's countries boasted a digital skills framework for civil servants (see Figure ES.4). In other words, nearly two-thirds of LAC countries lacked recruitment systems that incorporated job descriptions for recruiting civil servants with the knowledge and skills needed to carry out roles related to digital transformation. Likewise, 72 percent of countries have no specific salary scale for digital roles. This is relevant because the lack of salary competitiveness was reported as the main barrier to attracting human capital to the public sector (see Figure ES.5) (IDB-GEALC, 2019).
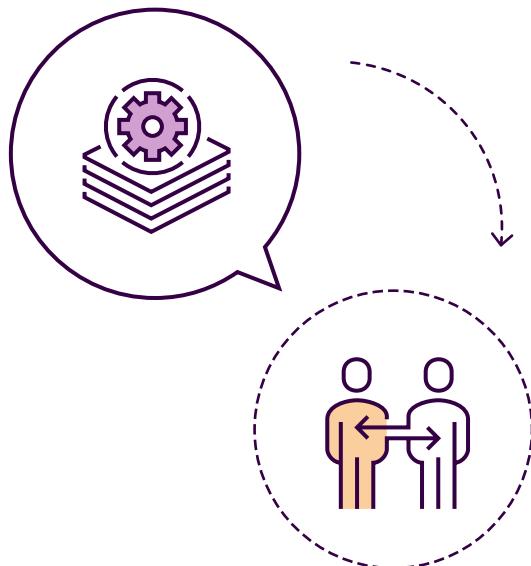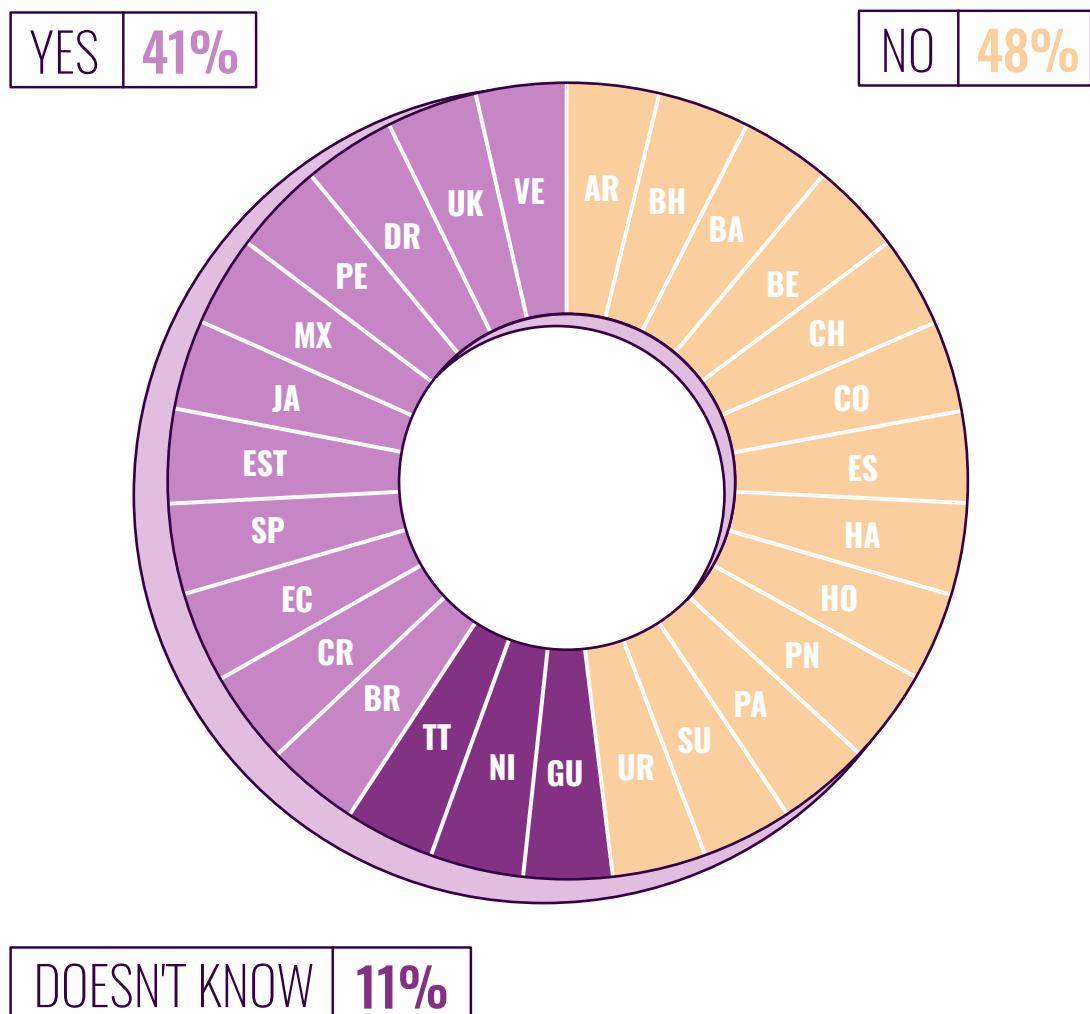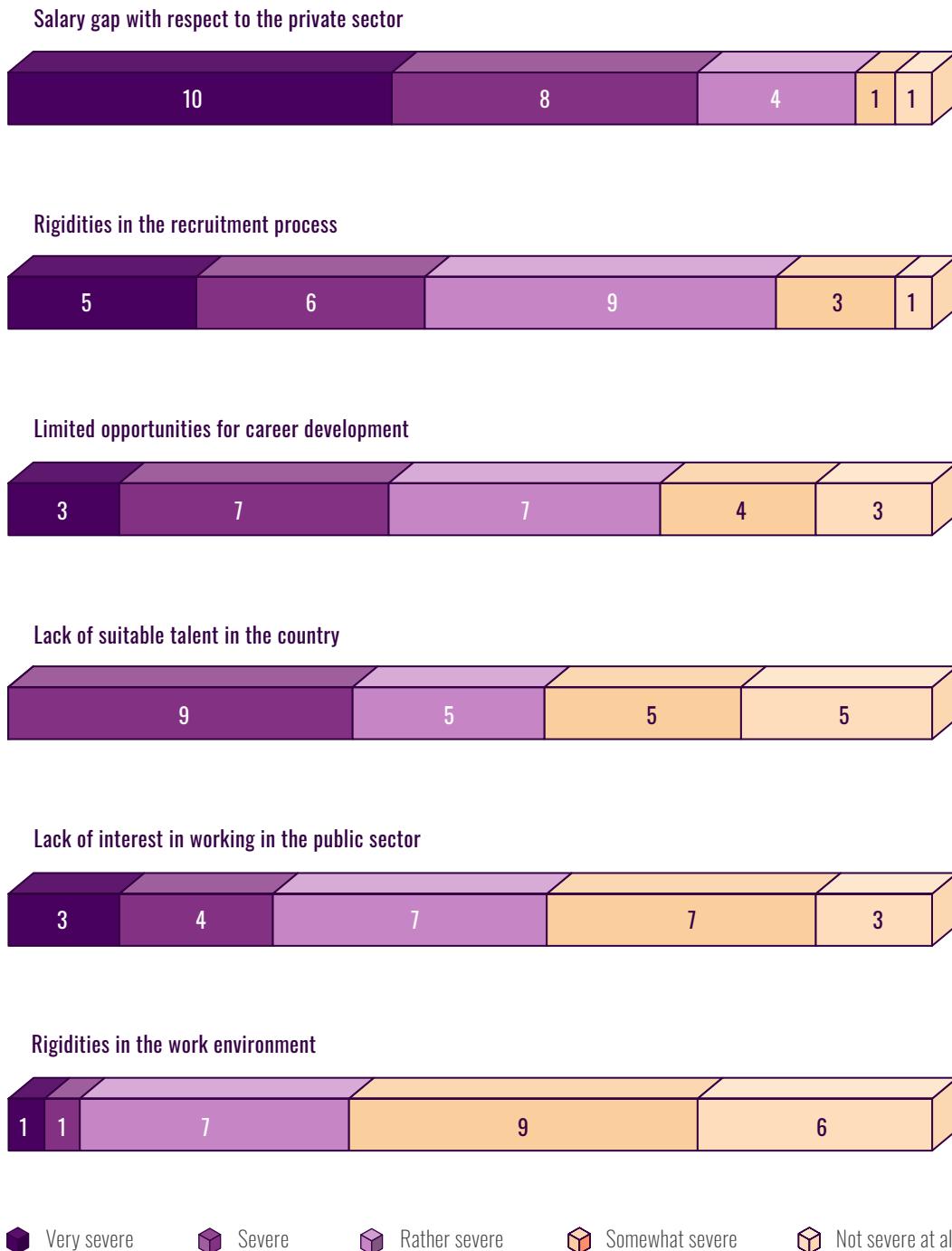
FIGURE ES.4 Is There a Digital Skills Framework for Civil Servants?

YES | 41%

NO | 48%

AR BH BA BE CH CO ES HA HO PN PA SU UR GU NI TT BR CR EC SP EST JA MX PE DR UK VE

DOESN'T KNOW | 11%

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

FIGURE ES.5 Main Barriers to Attracting Talent to the Digital Team
(answers by category out of 25 countries)

Salary gap with respect to the private sector

| 10 | 8 | 4 | 1 | 1 |

Rigidities in the recruitment process

| 5 | 6 | 9 | 3 | 1 |

Limited opportunities for career development

| 3 | 7 | 7 | 4 | 3 |

Lack of suitable talent in the country

| 9 | 5 | 5 | 5 |

Lack of interest in working in the public sector

| 3 | 4 | 7 | 7 | 3 |

Rigidities in the work environment

| 1 | 1 | 7 | 9 | 6 |

⬢ Very severe   ⬢ Severe   ⬢ Rather severe   ⬢ Somewhat severe   ⬢ Not severe at all

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).
Note: The complete response option for "rigidities in the hiring process" included "for example, being unable to hire staff trained in digital subjects, but lacking formal certificate," while "rigidities in the working environment" included "for example, rules on start times, dress codes, etc."

WHAT IMPACT MAY DIGITAL TRANSFORMATION HAVE ON EXISTING CIVIL SERVANTS?

The digital transformation of the public sector implies modifying numerous roles. The changes may be the product of introducing an innovation, such as a technological tool that supports and streamlines a function carried out by a civil servant. Changes may also follow from the modification or elimination of processes brought about by the automation of tasks. Figure ES.6 maps the possible effects of digital transformation on the roles of civil servants and identifies the options for adapting to changes and eliminating jobs.

WITH RESPECT TO RESTRUCTURING PROCESSES, CIVIL SERVANTS HAVE THREE MAIN ALTERNATIVES: TRANSFER TO ANOTHER POSITION, TRAINING (WHETHER FOR ADAPTING TO A MODIFIED ROLE OR PERFORMING A NEW ONE), AND REDUNDANCY (ACCORDING TO THE ALTERNATIVES ESTABLISHED BY THE LEGISLATION IN EACH COUNTRY).
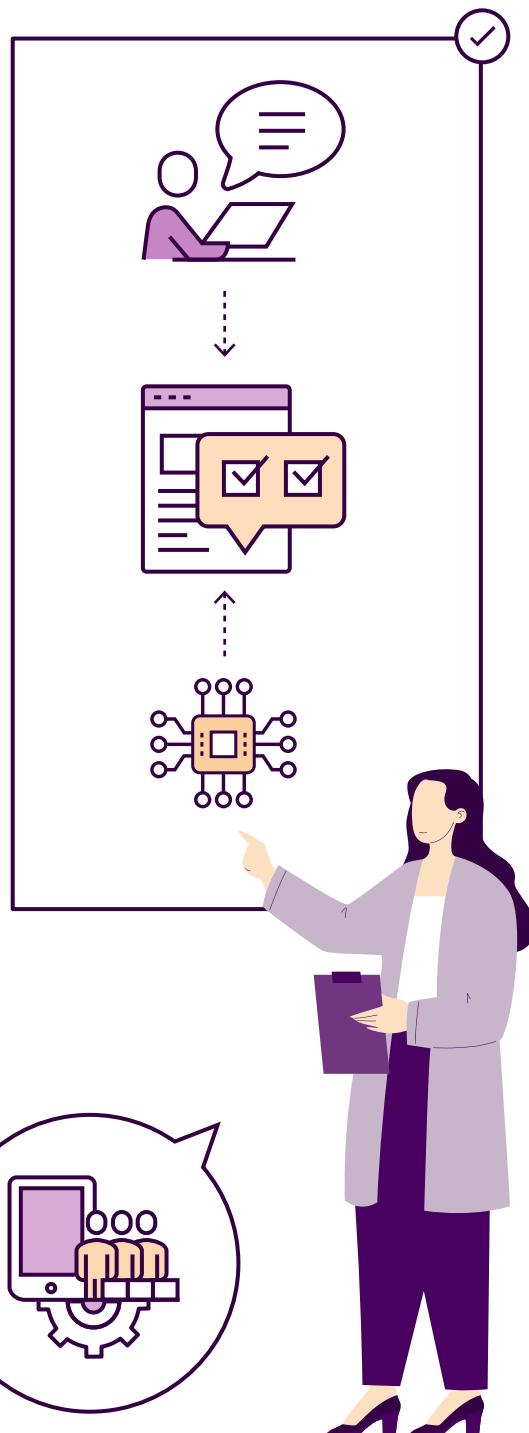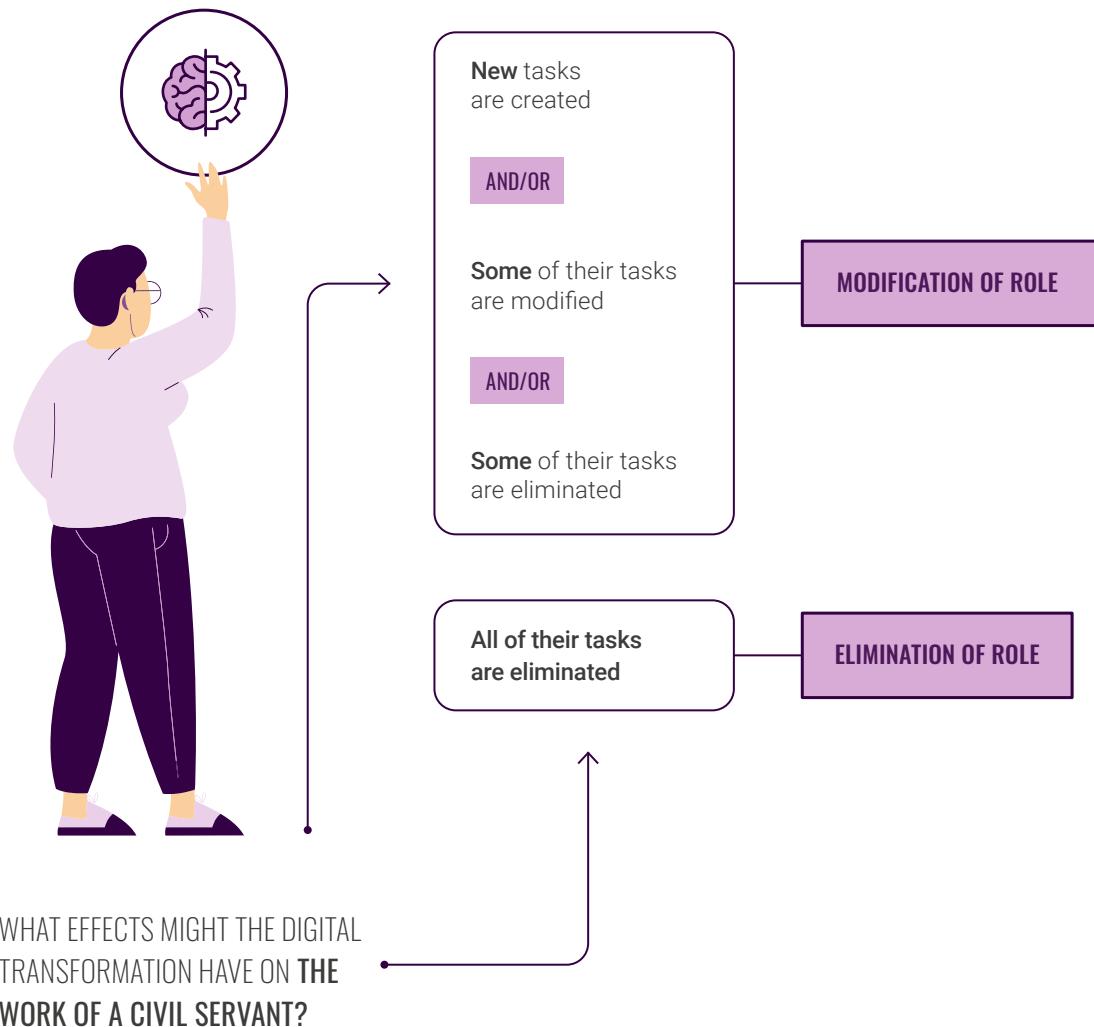
FIGURE ES.6 Options for Adapting to the Effects of Digital Transformation on the Roles of Civil Servants
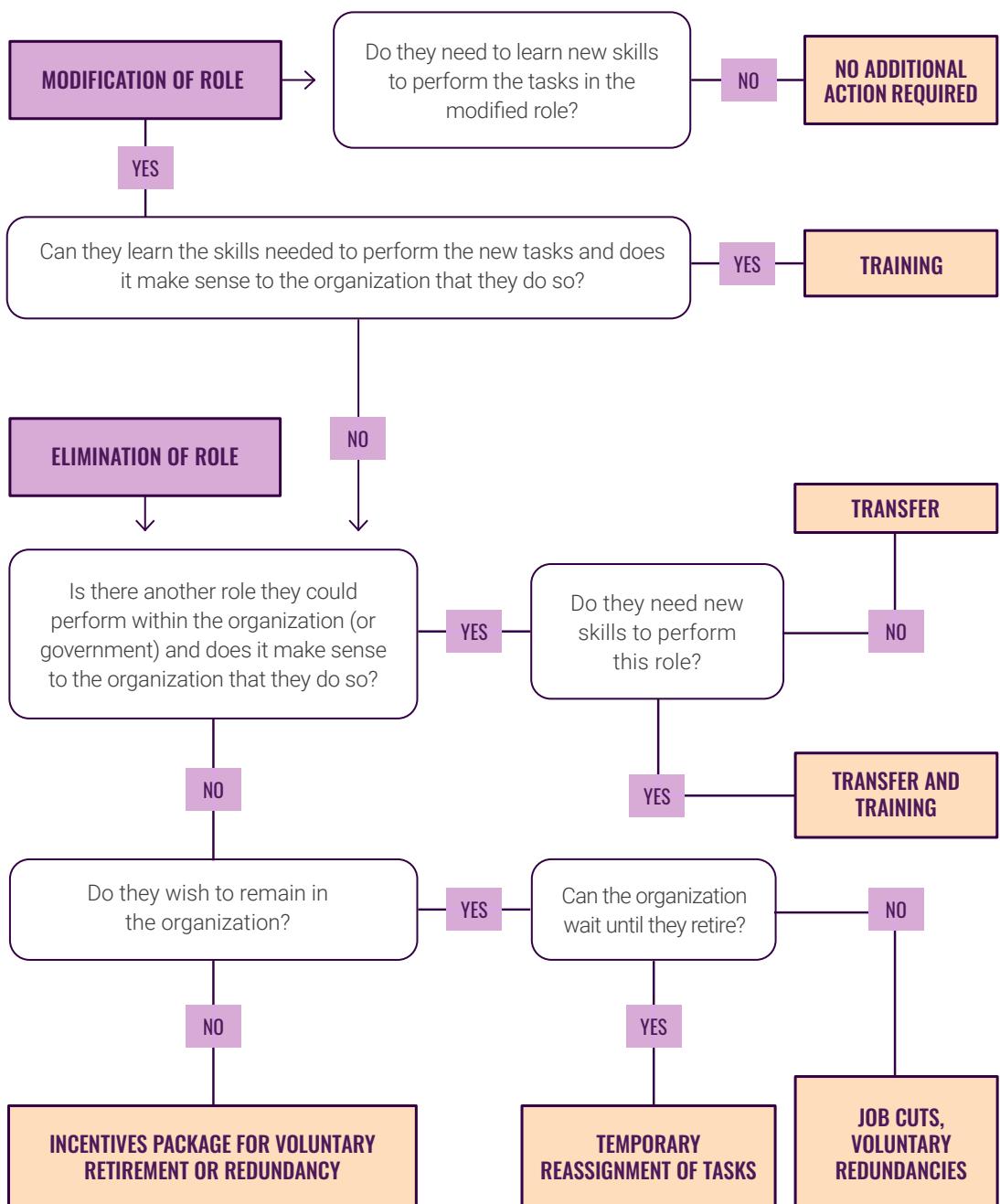
New tasks
are created

AND/OR

Some of their tasks
are modified

AND/OR

Some of their tasks
are eliminated

MODIFICATION OF ROLE

**All of their tasks
are eliminated**

ELIMINATION OF ROLE

WHAT EFFECTS MIGHT THE DIGITAL
TRANSFORMATION HAVE ON **THE
WORK OF A CIVIL SERVANT?**
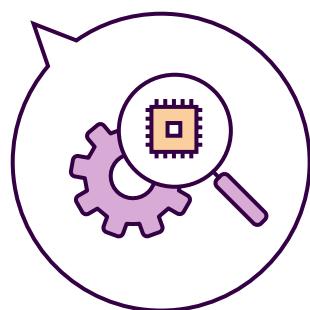
Source: Authors' elaboration, IDB (2020).
Note: When selecting any of these options, the corresponding employment regulations must be applied.

Introducing innovative tools demands that the public servants have the necessary knowledge and skills to use them, whereas automation may imply that human capital requirements are considerably reduced. An example that illustrates this phenomenon is the introduction of the Prometea artificial intelligence system by the Buenos Aires Attorney General's Office. By automating around 60 percent of the prosecutors' work, it freed up more time for them to perform additional tasks (Estevez et al., 2020). Another example is the introduction of the electronic filing system by Chile's Social Security Superintendency, which abolished the role of the estafeta (a messenger who carries documents from one office to another) and the tasks of civil servants at the records office (which managed document reception and dispatch), as well as other administrative sup-
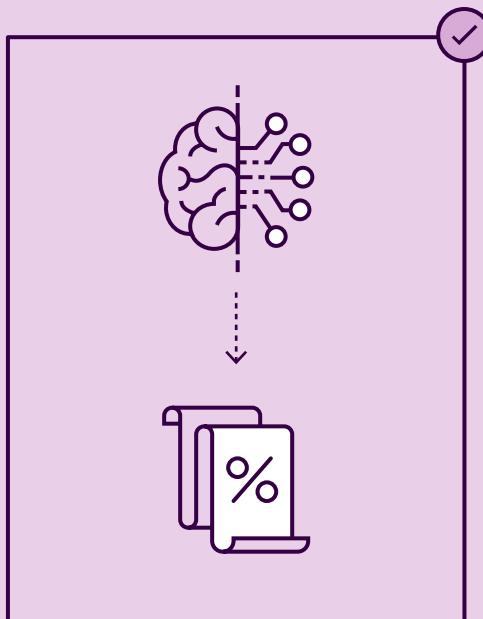
| MODIFICATION OF ROLE | → | Do they need to learn new skills to perform the tasks in the modified role? | NO | NO ADDITIONAL ACTION REQUIRED |

YES

Can they learn the skills needed to perform the new tasks and does it make sense to the organization that they do so? → **YES** → **TRAINING**

NO

ELIMINATION OF ROLE

TRANSFER

Is there another role they could perform within the organization (or government) and does it make sense to the organization that they do so? → **YES** → Do they need new skills to perform this role? → **NO** → **TRANSFER**

YES → **TRANSFER AND TRAINING**

NO

Do they wish to remain in the organization? → **YES** → Can the organization wait until they retire? → **NO** → **JOB CUTS, VOLUNTARY REDUNDANCIES**

YES → **TEMPORARY REASSIGNMENT OF TASKS**

NO

INCENTIVES PACKAGE FOR VOLUNTARY RETIREMENT OR REDUNDANCY

port roles. Eliminating some roles means that tasks can be reassigned within an institution, the needs of other institutions can be met, and the elimination of the positions that correspond to those roles can be planned, in accordance with each country's employment regulations. The introduction of digital tools can generate potential savings associated with human capital management, as described in Box ES.1.

BOX ES.1 Digital Transformation and Potential Fiscal Savings

THE INTRODUCTION OF DIGITAL TOOLS ALSO **ENABLES THE STATE TO PLAN THE PROGRESSIVE ELIMINATION OF REDUNDANT POSITIONS,** WHICH CAN TRANSLATE INTO EITHER FISCAL SAVINGS OR BETTER ALLOCATION OF SALARY COSTS.

Digital transformation can bring significant savings to the public sector either by reducing the number of civil servants or contractors needed to carry out a particular activity, or through lower consumption of material resources.

The Federal Government of Brazil, for example, reported fiscal savings of US$92.5 million following the digitization of 1,116 services between January 2019 and January 2021.[3] A specific case was the international immunization certification service, which reduced its workforce requirements from 950 to 285 workers. Digitization of this procedure, which has 2,000 daily requests, meant lower requirements for both contractors and physical space, and saved the government the annual equivalent of US$6 million.[4] These fiscal savings came on top of an estimated US$277.5 million in indirect savings for the general public by eliminating travel and other costs associated with in-person procedures.

For example, the Jamaican government, after incorporating a technological human resource management system, managed to reduce payroll costs by an average of 9 percent annually in the period 2016-19.
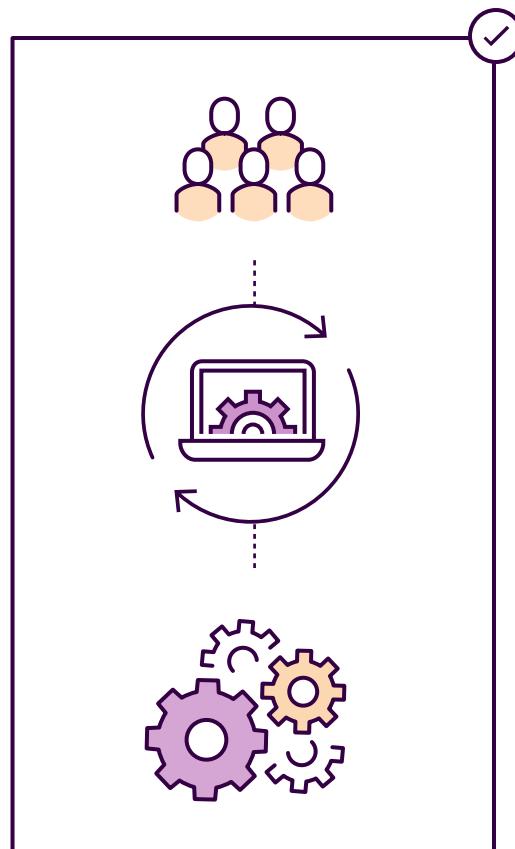
3. Source: Secretaría Especial de Desburocratización, Gestión y Gobierno Digital (2021), Balance 2020, Ministerio of Economía.

4. Source: Futuro da Gestão Pública.Secretaría Especial de Desburocratización, Gestión y Gobierno Digital. Ministerio de Economía, Gobierno de Brasil: https://www.gov.br/economia/pt-br/assuntos/noticias/2021/janeiro/arquivos/Balanco2020_08.01.2021.pdf.

HOW PREPARED ARE CIVIL SERVANTS FOR DIGITAL TRANSFORMATION ?

The attitudes of civil servants in LAC toward the digital transformation of public administration are heterogeneous. A survey of more than 9,300 Chilean civil servants in 65 institutions provides evidence in this respect. On the one hand, most civil servants generally have an attitude toward work that is traditionally considered to be favorable to modernization processes: they are satisfied, committed, and motivated; they have high technological affinity and competence; and they believe that technology has a positive impact on their work. Most of them also show little resistance to change and considerable willingness to perform a different task in their organization. However, only a minority of civil servants say that they are willing to move to a different city or to change to a different institution, and less than half agree that they have job stability and decent work opportunities either within the government or outside of it.

THIS RELUCTANCE TO CHANGE INSTITUTIONS COINCIDES WITH THE LIMITED POSSIBILITY OF DOING SO: THE FEW EXISTING GEOFIGUREAL AND FUNCTIONAL MOBILITY MECHANISMS FOR CIVIL SERVANTS ARE TOO RIGID FROM THE ADMINISTRATIVE POINT OF VIEW (CORTÁZAR ET AL., 2014).

Training for civil servants, a crucial aspect of state digital transformation processes, is one of the major pending issues in LAC. Only a small percentage of civil servants report having received training in technology subjects in the last year or state they received adequate training in the past when their institution has implemented technological changes (see Figure ES.7). Moreover, data from complementary sources (DANE, 2020; IDB-COPLAC, 2019) suggest that training is a challenge at the regional level in terms of both scope and relevance, particularly with respect to technology.

The surveys conducted for this book added to the documented experiences and attitudes of civil servants, and helped to create an estimation of the potential for automation of public sector jobs based on the activities that the civil servant reports carrying out, how the job is performed, and the educational requirements for their work. This estimate is called the Automation Potential Index.[5] On the one hand, the data indicate that the potential for automation increases the lower the hierarchical level of a given ocupation and, on the other, the higher the potential for automation of an activity, the less favorable the attitude to digital transformation of the civil servants who perform that job.
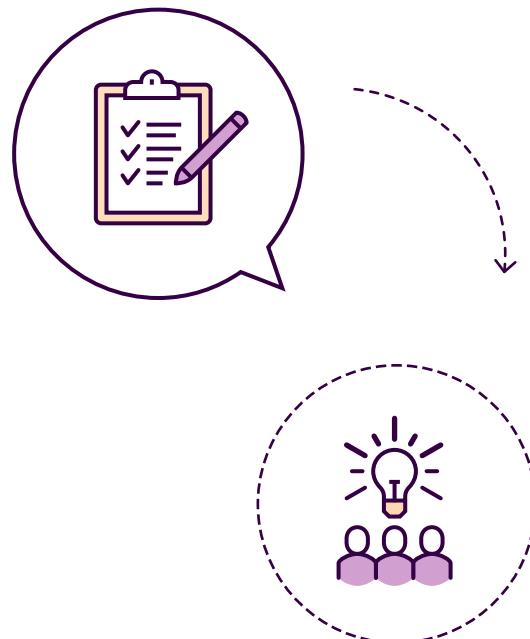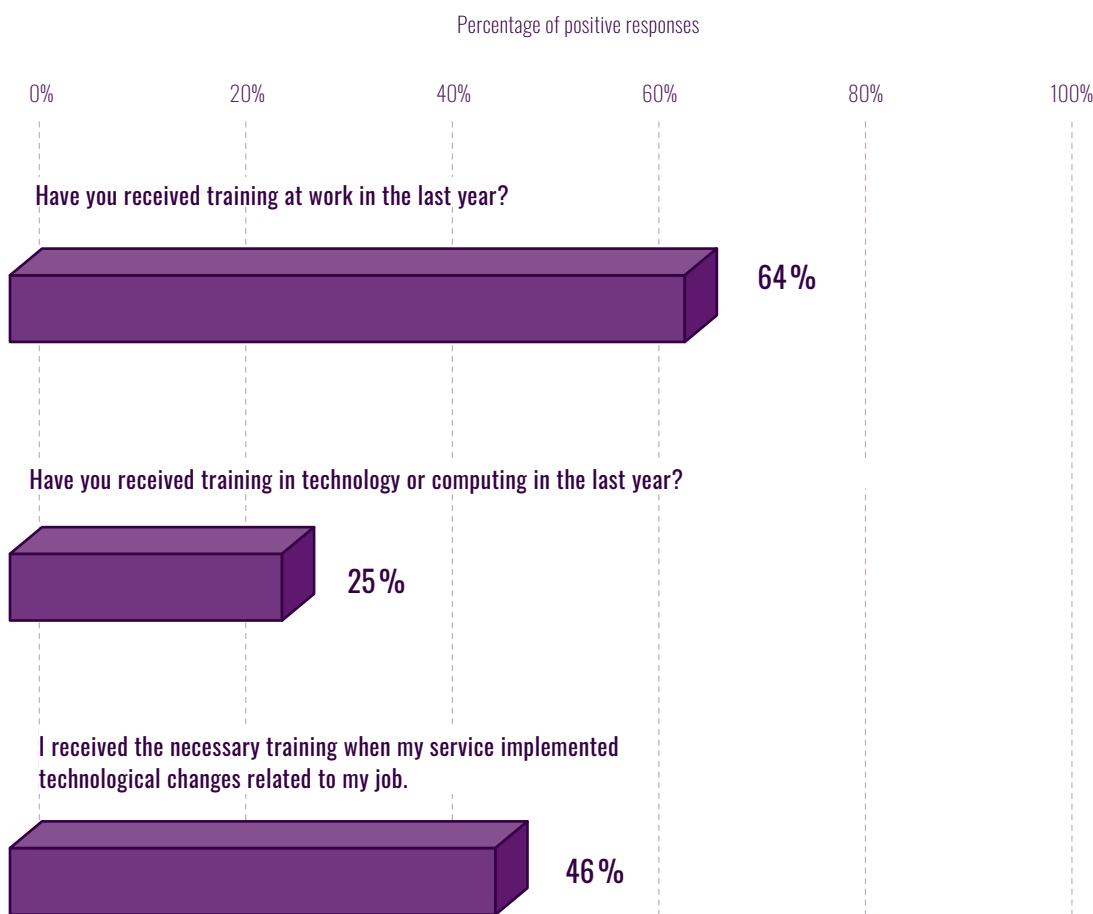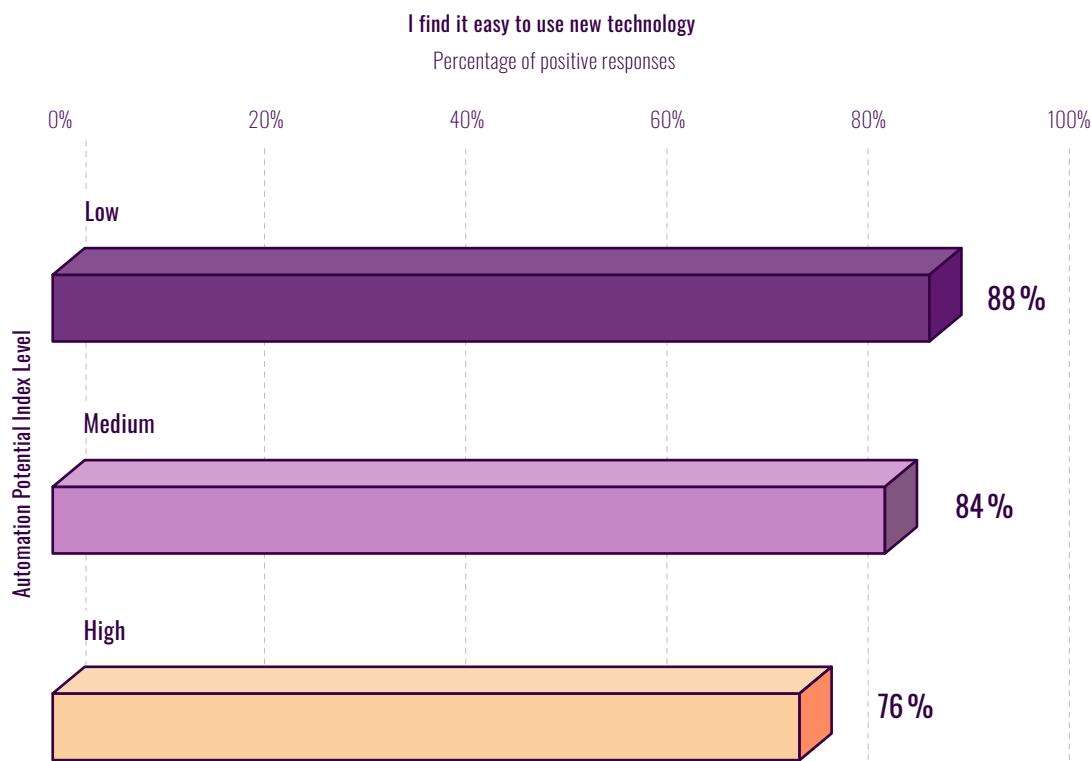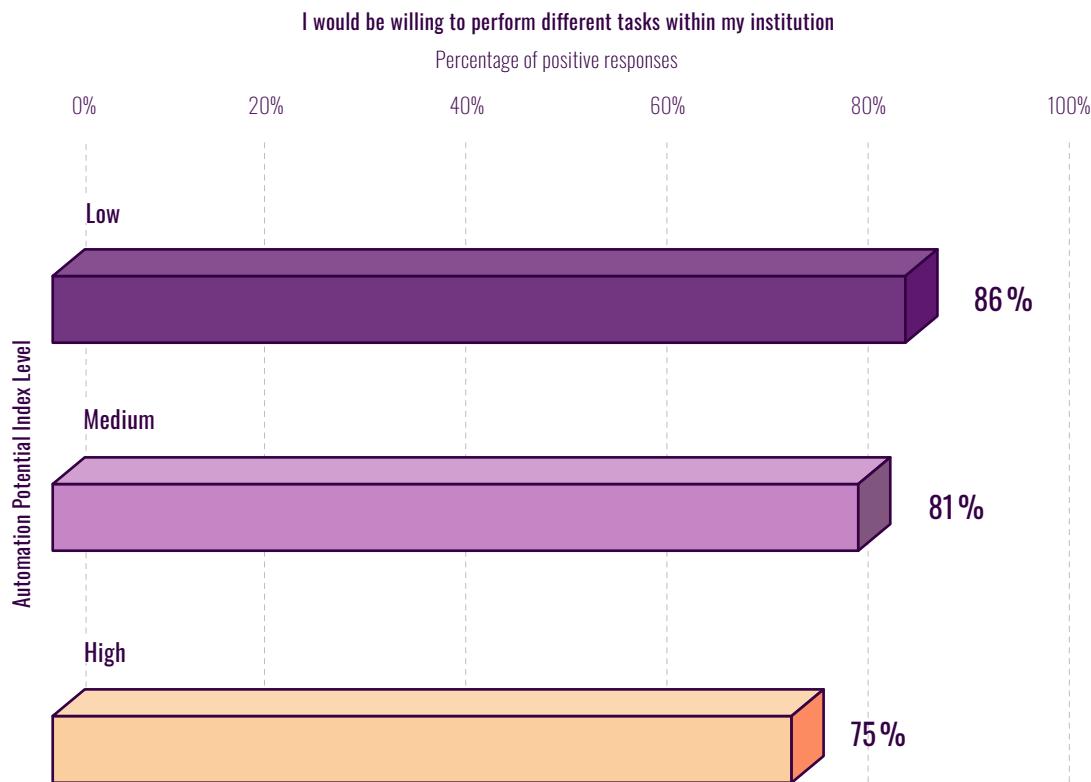
FIGURE ES.7 Access to Training

Percentage of positive responses

Have you received training at work in the last year?

64%

Have you received training in technology or computing in the last year?

25%

I received the necessary training when my service implemented technological changes related to my job.

46%

---

5.   The Potential for Automation Index contains three subindices: (i) bottlenecks – the intensity with which activities that are difficult to automate are carried out (70 percent of the index); (ii) routinization – the degree of flexibility in the order of work activities, the autonomy with which the work is done, as well as the task planning and the organization of time required for the task performed (22 percent of the index); and (iii) educational level required for the job (8 percent of the index).

FIGURE ES.8 Capacity to Learn a New Technology, by Degree of Potential for Automation

I find it easy to use new technology

Percentage of positive responses

FIGURE ES.9 Willingness to Perform Different Tasks, by Degree of Potential for Automation

I would be willing to perform different tasks within my institution

Percentage of positive responses

FOUR RECOMMENDATIONS TO HELP GOVERNMENTS TACKLE THE HUMAN CAPITAL CHALLENGES POSED BY DIGITAL TRANSFORMATION

1

STRENGTHEN THE MECHANISMS FOR ATTRACTING AND RETAINING SPECIALIZED DIGITAL TALENT

There is currently a shortage of digital professionals in the global labor market and, in many cases, the public sector is unable to compete with the remuneration offered by the private sector. Although efforts should be made to make the salaries of digital professionals competitive, governments can also take other kinds of actions to strengthen their capacity to recruit such talent.

Promote a greater supply of digital talent for the government through better engagement with the education sector. In many countries, there are academic initiatives that seek to fill the digital talent gap in the labor market. As large employers, governments can participate in these initiatives by informing the universities of their talent needs, offering internships or programs for young professionals and, in general, promoting the employment conditions offered by the public sector.

Strengthen the recruitment process for digital talent. There are three critical instances that governments can exploit to facilitate the recruitment of digital talent:

- Planning for future talent needs (including profiles, number of civil servants needed, and cost estimates).

- Updating the job description system.

- Creating a recruitment process that is more specialized (both with regard to selection tactics and to the content and description of the vacancies), technical (with emphasis on practical tests to assess necessary skills), and efficient (that last for weeks rather than months) to ensure that good, enthusiastic candidates are not lost due to slow and generic processes.

THESE ACTIONS ARE MOST EFFECTIVE WHEN THE **GOVERNMENT IS SEEN AS AN ATTRACTIVE PLACE TO WORK,** WITH AN OPEN CULTURE AND MODERN TECHNOLOGIES, TOOLS, AND WORK SPACES.
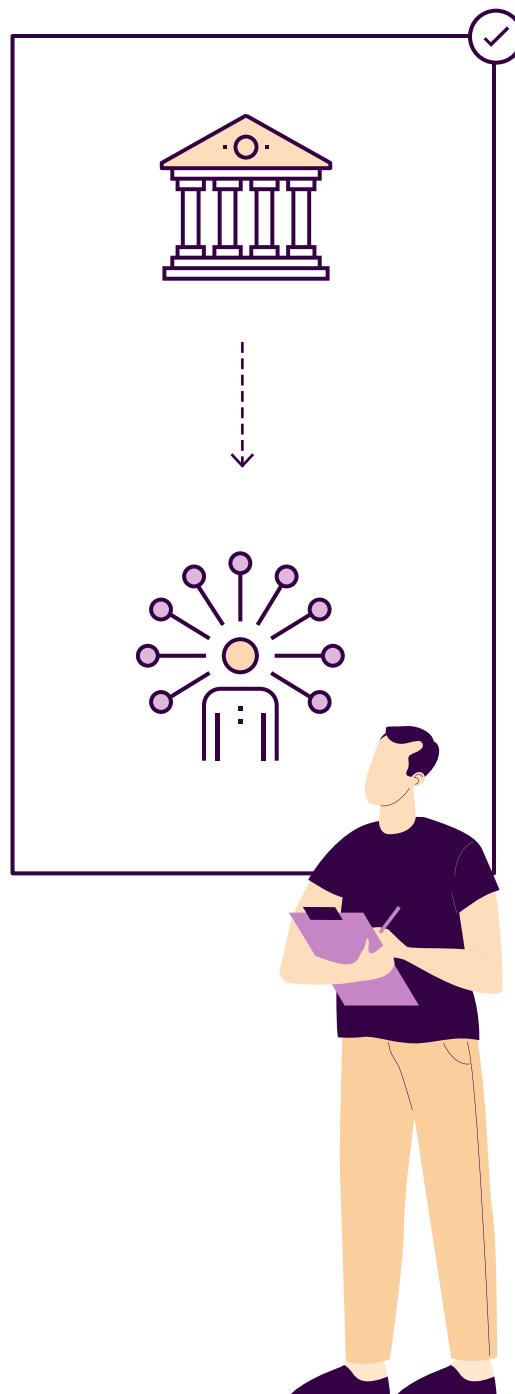
Emphasize the state's public service mission. The public sector offers workers the chance to perform jobs with a high social impact. This intrinsic motivation can be a factor for attracting and retaining talent if potential candidates are given the opportunity to contribute to key public policy objectives and critical services and this opportunity is clearly communicated to them.

Offer different hiring modalities. In the current labor market, not all professionals have the same aspirations: some want to join the public sector and develop a career in it, whereas others see public administration as just another stage in a professional career that may combine experiences in both the public and private spheres. Attracting digital specialists with diverse professional trajectories means offering different modalities of engagement with the state. For example, professionals with a long-term interest in the public sector may see added value in a civil service career with structured growth. For professionals interested in public service for a limited period, there are other options that may be more attractive:

- Temporary civil servant recruitment schemes (in the style of the United States Digital Service).

- Programs that permit job rotation among various public institutions (such as Canada's Free Agents program).

- Recruitment through state-owned enterprises or foundations, with greater flexibility with regard to recruitment procedures and compensation, that place digital professionals in public institutions.

Pay particular attention to narrowing gender gaps. If there are more men than women in digital jobs in the local labor market and there is a stronger male than female presence among those taking technology degrees at university, then there is a risk that this bias might be reproduced in the recruitment of digital talent. Possible actions to mitigate this risk include:

- Create special initiatives to recruit women experts in technology, such as participation in conferences, presentations at universities, and publication in the media.

- Include women in job selection panels.

- Establish quotas for recruiting women in digital positions, including in leadership roles.

Improve the competitiveness of public sector salaries. Although the government has a variety of mechanisms at its disposal for attracting scarce talent, such as the chance to make an impact on society or job stability, among others, for some professionals, salary will always be a significant factor. Therefore, the salary gap with regard to the private sector should be narrowed as much as possible. The short-term options are, among others:

- Paying the maximum remuneration permitted within existing salary bands (as in the United Kingdom and the United States).

- Creating a specific salary supplement for digital positions (as in Spain and Uruguay). In the context of a wider civil service reform, which might potentially include creating or adapting a digital profession, a specific salary scale could be established that is based on a comparison with the private sector while maintaining parity with other professions in the public sector.
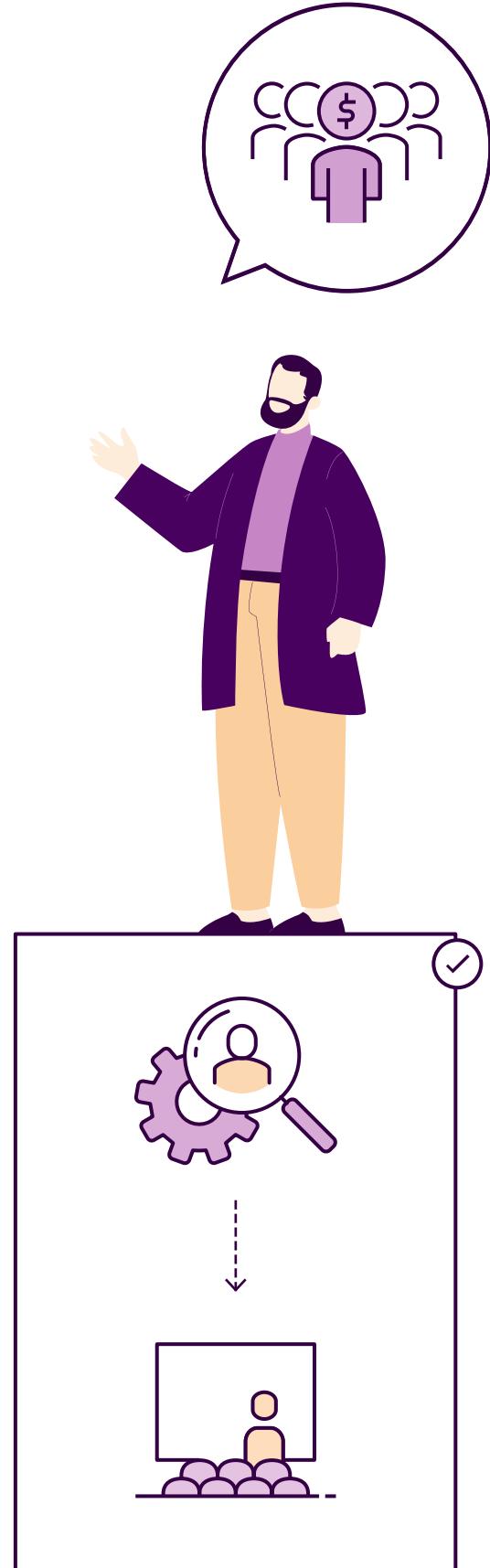
2

INVEST IN DIGITAL TRAINING ON A MASSIVE SCALE
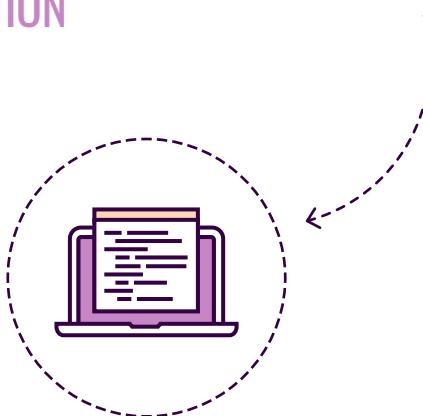
LAC governments should make substantial investments in improving both the quantity and the quality of digital training. The training that is currently given by the region's governments tends to be insufficient, sometimes not particularly relevant, and of limited quality. If there is a paradigm shift linked to digital transformation for civil servants, it is learning: all civil servants, in one way or another, will have to update their skills. Insofar as digital transformation is a continuous process, the learning process for civil servants will also be so. Training for civil servants should be specifically designed for at least four target groups:

- Digital specialists, to keep their skills up to date.

- Institutional leaders, to familiarize themselves with digital transformation, help them to see how it fits in with the work of their institution, and provide guidance on how to support the job change processes that their team members might undergo.

- Civil servants whose jobs have been modified or eliminated due to digital transformation, to help them adapt to their new roles.

- All civil servants, to foster the use of the new technological tools available in their institution and increase openness toward future changes.

3

CREATE MECHANISMS TO MANAGE THE DISRUPTIONS TO WORK BROUGHT ABOUT BY DIGITAL TRANSFORMATION

Digital transformation can modify many roles in the public sector and even eliminate some completely. Although training is a key tool for managing these disruptions, there are other strategies for making digital reforms viable and boosting their chances for success. The following are some complementary measures:

- **Proactive identification.** Identify which roles are susceptible to change or elimination following the implementation of a digital reform to be able to design appropriate and personalized adaptation measures.

- **Expand internal mobility options.** Facilitate job relocation for civil servants following the transformation or elimination of roles.

- **Promote change management through strong, visible leadership and effective communication.** Senior managers should be the ambassadors of the transformation. They are responsible for clearly communicating how the changes will affect employees, for managing expectations, and for creating a calm environment to facilitate the transition that the institution faces.

- **Give opportunities for participation.** . Involving civil servants in preparing the new tools can help improve their design, make them more understandable, reduce opposition to their implementation, and increase their up-

take. Examples of ways that this can be done are the so-called agents of change programs, in which certain employees are appointed to participate in the early stages of implementing a new tool or creating the seed capital funds for innovation.
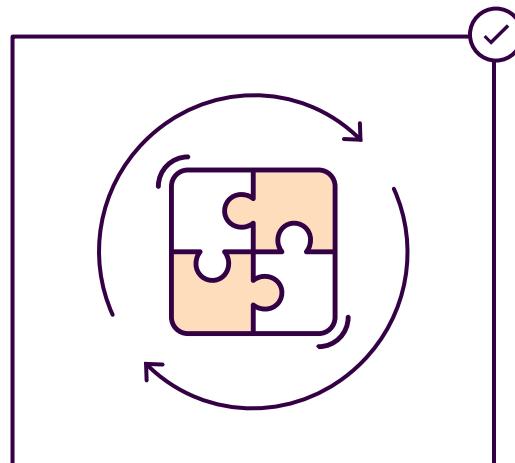
- **Prepare for possible redundancies.** During the course of a digital transformation initiative, some roles may become obsolete and there may be no good job transition option available within the public sector for those who perform them. It is therefore advisable to prepare options for voluntary redundancy and retirement packages (already used in many of the region's countries in other contexts), which can help to maximize the efficiency of public resources while respecting the rights and the circumstances of the civil servants. In countries where these options are unavailable, the management of human capital planning should be strengthened to ensure that redundant positions do not continue to be filled once the obligations contracted with the respective personnel have expired.

4

ENSURE THAT THOSE RESPONSIBLE FOR DIGITAL TRANSFORMATION, HUMAN TALENT MANAGEMENT, AND BUDGET MANAGEMENT ALL WORK TOGETHER
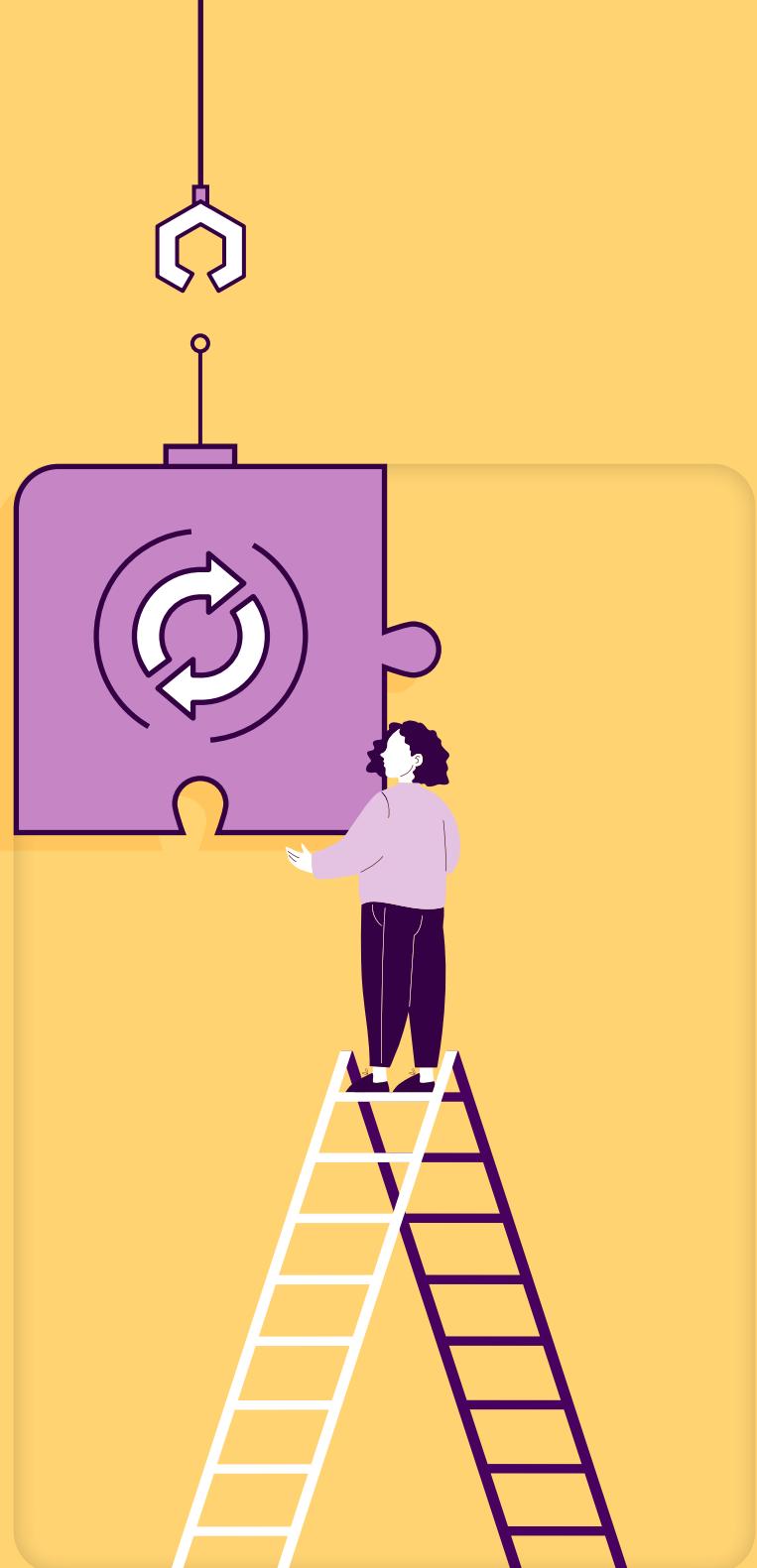
All of the previous recommendations, in one way or another, point toward integrating different considerations of human capital into the digital transformation agenda. However, for this to occur, coordinating functions and routines must be established among three key actors: the agencies responsible for developing the digital transformation agenda, the civil service agencies (including the central authority responsible for policymaking and the institution-level human resource units), and the ministries of finance and institution-level budget units.

SUCH JOINT WORK CAN BE CARRIED OUT BOTH IN EACH INSTITUTION AND THROUGHOUT THE ENTIRE GOVERNMENT (FOR EXAMPLE, VIA A COMMITTEE FOR THE "FUTURE OF WORK" IN THE PUBLIC SECTOR).

The majority of civil service agencies and institutional human resources units are not qualified to play a strategic role in the talent planning required for digital transformation. In order for these institutions to become the strategic partners of digital transformation, three types of actions are recommended:

- Embark on digital transformation within these entities by automating routine tasks to free up time for more strategic tasks and making better use of data to support decision making.

- Develop a new range of services for institutions facing digital transformation, which might include projections of future talent needs, assessments of the impacts of digital transformation on civil servants, consultancies on change management measures, support with internal and/or external transfers, updating of job descriptions and design of voluntary retirement or redundancy plans, among others.

- Form a specialized digital talent recruitment team to address the specific needs of this market.

1

DIGITAL TRANSFORMATION AND PUBLIC EMPLOYMENT

The Future of Work in Government

CHAPTER
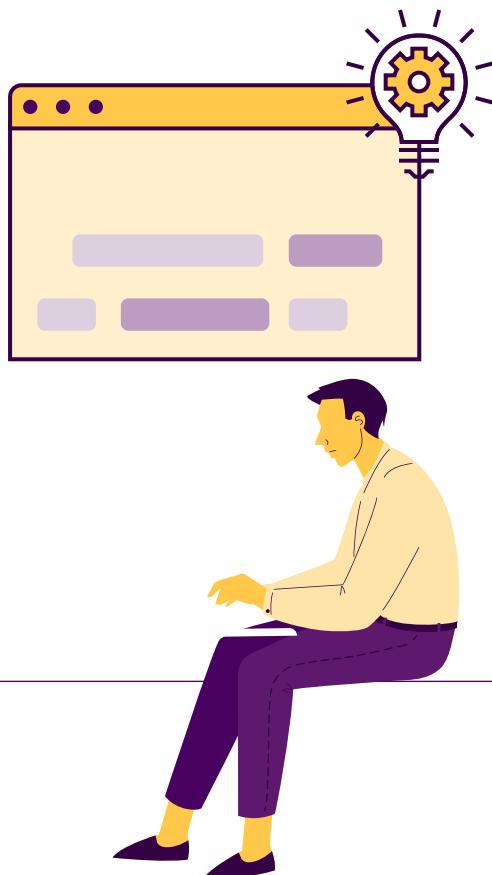
ARE THE GOVERNMENTS OF LATIN AMERICA AND THE CARIBBEAN PREPARED FOR **THE FUTURE OF WORK**?

| AUTHORS | Miguel Porrúa · Mariano Lafuente · Benjamin Roseth · Laura Ripani |

DIGITAL TRANSFORMATION HAS BECOME AN IMPERATIVE FOR GOVERNMENTS

The COVID-19 pandemic suddenly imposed the need to work, provide services, and communicate with citizens remotely. This obligation to do everything from a distance has added to preexisting pressures for digital transformation caused by growing citizen demands for more and better services and fiscal pressures that require governments to make more efficient use of public resources. These factors have prompted governments to exploit available digital systems even further and to promote new digital transformation initiatives (Box 1.1 describes Government Digital Transformation).

MOST LATIN AMERICAN AND CARIBBEAN COUNTRIES ARE STILL IN A RELATIVELY INITIAL PHASE OF GOVERNMENT DIGITAL TRANSFORMATION

Although 73 percent of the region's countries have a strategy in place in this regard (IDB-OECD, 2017), in 2017 only 7 percent of the citizens of Latin America and the Caribbean (LAC) had completed a government transaction using the internet, and in only three of the 26 countries analyzed could more than 50 percent of procedures be initiated online (Roseth, Reyes, and Santiso, 2018). Moreover, according to the United Nations 2020 digital services ranking,[6] only six LAC countries are among the top 50 in the world, and 10 fall between 51 and 100.

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6.   See the United Nations Online Service Subindex, available at: https://publicadministration.un.org/egovkb/en-us/About/Overview/-E-Government-Development-Index/Online-Service#web.

BOX 1.1 What Is Government Digital Transformation?

Government digital transformation is a change in institutional culture and organizational model, methods, and processes that exploits information and communication technologies (ICTs) to enable public institutions to address the needs of citizens and businesses in an efficient, transparent, and secure manner.

AMONG OTHER ELEMENTS, IT HAS FOUR IMPORTANT CHARACTERISTICS:

The use of shared technological tools throughout the public administration: Public institutions have many functions in common, such as exchanging information, verifying identity, signing documents, communicating with citizens and scheduling appointments, among others. Digital transformation offers technological tools that can be created once and be implemented throughout the public administration.

Greater production and exploitation of data: Increasing digital transactions generates an increasing amount of data. Given the right policies, capacities, and governance, the public sector, the private sector, and citizens can make use of these data for multiple purposes. The increased availability of data also heightens the need for protection against possible abuses.

A progression toward automated and proactive services: By using shared technological tools, many procedures can be automated, eliminating the need for intervention by civil servants, and can even be initiated proactively without citizens having to request them.
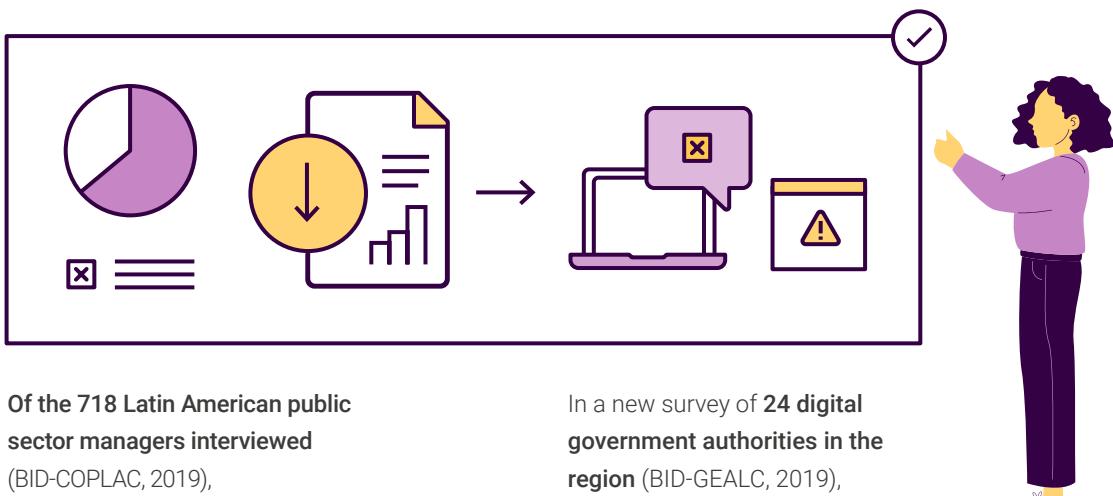
New ways of working: Certain ways of working often accompany, and strengthen, the changes that digital transformation brings to the operation of the public administration. Incorporating digital systems ushers in cultural change, demands new models of governance, and frequently requires amendments to regulations. Moreover, it introduces new work dynamics, such as[7]: design focused on users' needs (rather than on bureaucratic convenience) and testing directly with them; tests, analyses, and modifications that are repeated in short cycles (hours rather than months); and openness (use of open-source codes and frequent and transparent communication). Although these ways of working are not exclusive to the digital sphere, they are important for promoting the usability, scalability, and sustainability of the transformation.

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7.   This version is adapted from the work of the team that established the United Kingdom Government Digital Service (GDS), cited in: https://public.digital/2018/10/12/internet-era-ways-of-working/ and https://www.gov.uk/guidance/government-design-principles#be-consistent-not-uniform.

THE MANAGEMENT OF HUMAN CAPITAL IS ONE OF THE KEY CHALLENGES IN GOVERNMENT DIGITAL TRANSFORMATION, BOTH FOR THE *DRIVE* TO IMPLEMENT DIGITAL TRANSFORMATION AND FOR THE *ADAPTATION* TO IT.

DRIVE

To advance toward digital transformation, it is essential to have professionals who are capable of understanding, designing, and implementing the necessary technologies. In LAC, there is a dearth of qualified digital professionals.

Of the 718 Latin American public sector managers interviewed (BID-COPLAC, 2019),

64 PERCENT REPORT HAVING EXPERIENCED DIFFICULTIES IN IMPLEMENTING TECHNOLOGICAL PROJECTS IN THE LAST FIVE YEARS due to the difficulties in finding personnel in the labor market with the requisite education and abilities.[8]

In a new survey of **24 digital government authorities in the region** (BID-GEALC, 2019),

ALL STATED THAT FORMING TEAMS WITH THE NECESSARY EDUCATION AND ABILITIES IS A CHALLENGE.

Chapter 3 investigates the reasons for these gaps.

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8. This challenge is not exclusive to LAC. For example, a survey of a representative sample of civil servants in Israel revealed that 75 percent considered the skills of the civil servants themselves to be the most challenging aspect in achieving digital transformation. Only 47 percent believed that the officials in their own institution possessed the necessary skills for implementing its digital strategy (Spiegelman, 2019).

ADAPTATION ⇄
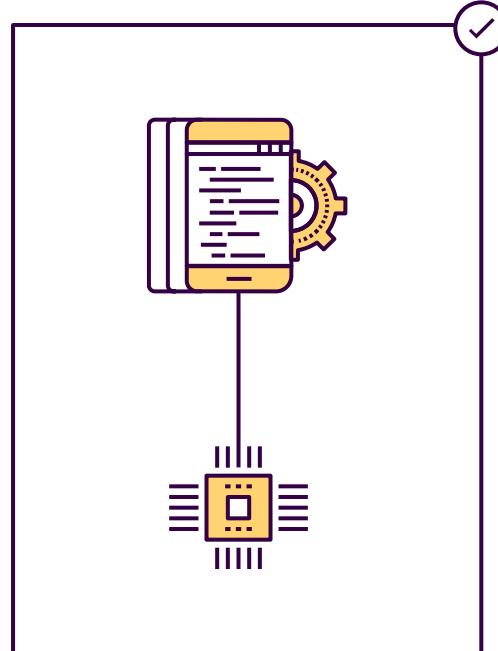
Digital transformation requires civil servants and institutions to adapt to a new way of organizing work, with new processes, tools, and tasks.

DELOITTE (2017) PROJECTED THAT 16 PERCENT OF THE JOBS IN THE UNITED KINGDOM'S PUBLIC SECTOR COULD BE AUTOMATED BY 2030.

Viechnicki and Eggers (2017) estimated that artificial intelligence could replace 30 percent of the activities of civil servants employed by the federal government of the United States in the next five to seven years. Prior experiences in LAC indicate that adapting to these disruptions might be a challenge: 61 percent of the Latin American public managers interviewed reported having participated in projects in which implementation faced resistance to change (IDB-GEALC, 2019).The resistance can come from civil servants in charge of information and communication technologies (ICT) in public sector institutions, who may perceive that their training may be outdated and do not know if they will have access to additional training. Furthermore, there may be some officials who oppose reform because their jobs are based on the use of obsolete technology that would be eliminated through digital transformation.

With respect to lower-level civil servants in LAC, there is a specific dynamic: they are the ones most likely to be in occupations that are susceptible to considerable changes from digital transformation (as explored in Chapter 4) while, at the same time, they are more likely to be receiving a higher salary than what they would get in the private sector (Gindling et al., 2019). This set of factors, along with the employment stability typically found in the public sector, will force institutional leaders to make tough decisions about how much to invest in job retraining, for which civil servants, and whether to make use of tools such as retrenchment plans (see the discussion in Chapter 5).

THERE IS ALSO A RESISTANCE GROUP THAT WORKS WITH SYSTEMS BASED ON OBSOLETE AND OFTEN DISCONTINUED TECHNOLOGIES. THEIR OPERATION DEPENDS ON THE KNOWLEDGE OF AN OFFICIAL WHOSE SOLE MISSION IS TO MAKE THIS OBSOLETE TECHNOLOGY WORK.

BOX 1.2 How Digital Transformation Can Change the Jobs of Certain Civil Servants

THREE OF THE MOST COMMON CHANGES ARE:

1

SELF-SERVICE
(FRONT OFFICE)

Simplifying and digitalizing processes helps users complete them on their own, without the need for a civil servant to intervene. A typical example is that, when an institution offers a procedure online—assuming a high level of adoption by its users—the demand for in-person assistance falls. At a higher level of development, systems manage the entire administrative process associated with a government transaction and completely eliminate the need for intervention by civil servants, both those who interact directly with citizens and those responsible for approving the requests.

The benefit of many digital government tools is that they reduce or eliminate the need to handle paper. Document management systems move documents around within institutions. Interoperability systems move data, documents, and files around within public institutions and even between them and the private sector. In the absence of digital tools, civil servants—those who move papers from one office to another, those who receive documents in an institution and dispatch them to external recipients, those who call other institutions to verify data, and others—carry out these tasks.

2

AUTOMATION OF BACK OFFICE PROCESSES
(BACK OFFICE)

3

SUPPORT FOR DECISION MAKING

Digital tools that exploit interoperability and artificial intelligence can facilitate decision making and save time in administrative processes. These technologies systematize and analyze information from individual cases, triangulate multiple sources of information, and organize the main results in an easily accessible format. An example is a system that makes recommendations to prosecutors to make rulings based on the analysis of past cases. The core action (preparing the opinion) continues to be the responsibility of the civil servant, but the digital tool streamlines the steps and enables more cases to be handled or other activities to be undertaken.

ADDED TO THE CHALLENGES OF BUILDING CAPACITIES FOR THE DIGITAL TRANSFORMATION OF GOVERNMENT, EITHER INITIALLY *DRIVING* IT OR PROMOTING *ADAPTATION* TO IT, ARE THE SIGNIFICANT CHALLENGES OF CIVIL SERVICE MANAGEMENT IN LAC.

At the strategic level, these challenges include the administrative role of the governing body and the human resource management units in public institutions. At the operational level, they include the weaknesses inherent in the majority of human resource management subsystems, ranging from workforce planning to work organization (types of job descriptions and staff composition), employment management (recruitment, selection, etc.), and the management of staff compensation, performance, and development (the space to grow professionally and training). Figure 1.1 presents the general evolution in the region's civil service systems over the last 15 years (on a scale of 0 to 100) (Cortázar, Lafuente, and Sanginés, 2014).[9] It is notable that although the LAC average has improved in recent years, the region continues to score only 38 out of a possible 100. Figure 1.2 presents the average state of development by subsystem in the most recent scores (on the same scale).

SOME OF THE GAPS THAT NEGATIVELY IMPACT DIGITAL TRANSFORMATION ARE AS FOLLOWS:

Workforce planning

Effective workforce planning anticipates the professionals that will be needed (for example, data scientists) and those that will not be (fax technicians) and enables more fiscal space for the future recruitment of digital talent. Currently, formal planning—when it exists—is often linked more to the payroll than to employment needs and is subject to significant budget inertia. Therefore, centralized personnel databases focused not only on payroll, such as those available in LAC, are essential.[10]

Work organization

Without up-to-date job descriptions and their use in practice, it is difficult for a public sector institution to ensure that the current positions are aligned with the needs of the organization and that the people in them have the necessary qualifications, competencies, and skills, nor can there be an analysis of the digital skill gaps to inform training plans and to fully exploit human talent.

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9.   The scale is defined with respect to the points of reference identified in the Ibero-American Charter for the Public Service, signed by all Latin American governments in 2003.

10. Of the 718 Latin American managers interviewed, 84 percent stated that it was "difficult" or "very difficult" to move members of their teams to new positions in another public sector institution, 67 percent confirmed that they had experienced difficulty in transferring people to other positions within the same institution, and 80 percent acknowledged that it was difficult to recruit personnel from other public sector institutions for their own teams (IDB-COPLAC, 2019).

Employment management

Without flexible employment models—the exact opposite of the career systems that exist in many countries, which only allow entry on the lowest rung of the ladder and seek to provide permanent positions—public sector institutions may be losing opportunities to capture the digital talent needed to implement digital transformation. This is due to the fact that traditional career systems are not aligned with the dynamism of the digital labor market (owing both to the propensity of digital professionals to frequently change employers and to the needs of the state, which might suffer from the obsolescence of that talent in the face of accelerated technological changes and lack of adequate training).

Compensation management

Unless there are competitive salaries to capture digital talent, which would mean adjusting public sector salary scales to those of the private sector, it will be difficult to attract the necessary talent and will become necessary to make use of ad-hoc recruitment systems (through public enterprises or foundations, or through the civil service, but with complementary remuneration).

Performance management

Without performance evaluation systems that link performance to professional development, it will be difficult to retain digital talent.

Management of professional development

Without real investment in effective training in digital skills, it will be impossible for the great majority of civil servants and professionals in digital teams to adapt, meaning they could rapidly fall behind in the face of technological changes. Furthermore, without effective internal mobility mechanisms, it will be impossible to successfully redeploy civil servants whose tasks have disappeared or been substantially modified (Cortázar, Lafuente, and Sanginés, 2014; IDB-OECD, 2020; Lafuente and Molina, 2018).

FIGURE 1.1 Index of Civil Service Development in Latin America and the Caribbean, 2004 and 2012-2019

Chile
59
67

Brazil
64
65

Costa Rica
47
54

Colombia
46
52

Uruguay
47
52

Jamaica*
50

Peru
14
41

Mexico
41
41

Ecuador
15
41

Dominican Rep.
27
41

Paraguay
12
40

LAC Average
30
38

Barbados*
38

Trinidad and Tobago
37

Nicaragua
22
35

El Salvador
11
34

Panama
13
29

Guyana*
27

Bahamas*
25

Guatemala
24
24

Bolivia
26
21

Suriname*
17

Honduras
11
12

◆ 2004   ◆ 2012–19
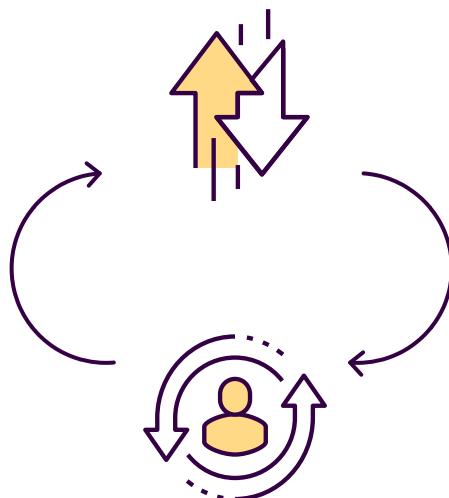
Source: IDB (2020).

* There is no available measurement for 2004.
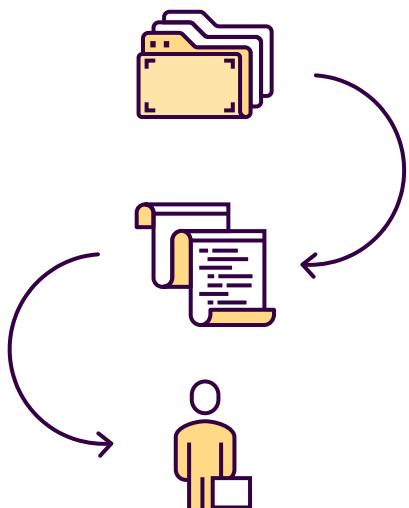
FIGURE 1.2 Regional Performance of the Index of Civil Service Development, 2012–2019, by Subsystem

Planning — 38

Work organization — 43

Employment management — 43

Performance management — 31

Compensation management — 37

Development management — 28

Human and social relations management — 35

Human resources organization and management — 36
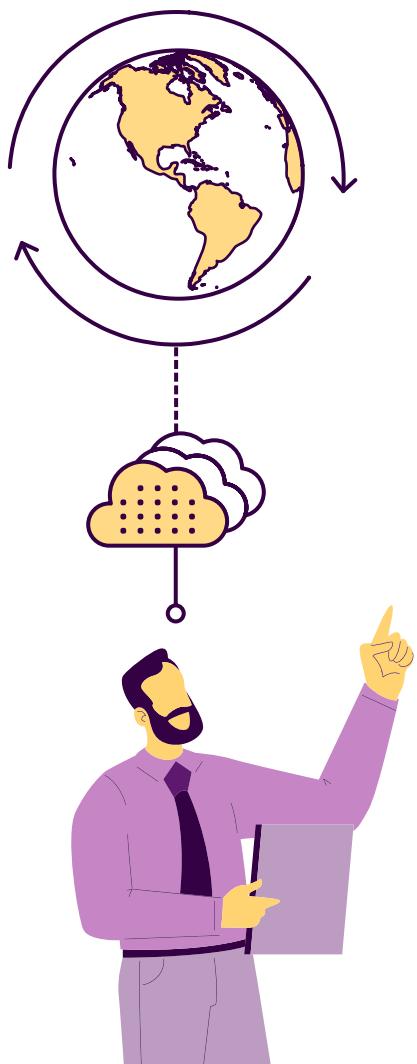
Source: IDB (2020).

Digital transformation offers an additional opportunity in terms of human resource management: greater productivity through automation. Insofar as certain functions are automated, or self-service functions have been installed enabling citizens to resolve their needs digitally, there are possibilities for a more efficient use of human resources, both through fiscal savings and reassignment of tasks that are of greater value to citizens. First, the cost of personnel can be reduced in the short term if the services automated are currently provided by contractors or staff close to retirement age. In Brazil, for example, in 2019 the federal government digitalized the international vaccination certificate service, which meant that only 285, rather than 950, professionals were needed to manage the 2,000 daily requests. The reduction in staff and other fixed costs, such as physical office space,

represented an annual savings of US$6 million (Government of Brazil, 2019). When permanent civil servants provide the automated services, the cost savings are often seen over the medium term, since there is an adjustment in workforce planning and retrenching staff is often not a viable option (see more details in Chapter 5). To realize the savings, recruitment inertia must be avoided for positions that have become obsolete due to digital transformation. Retraining and redeploying the affected permanent civil servants in tasks of higher value-added should improve staff motivation, increase the public value of their work, and provide better service.

Most of the region's governments have failed to tackle in depth the challenge of managing human capital for digital transformation, either from the digital government or the civil service standpoint. In the strategic planning for the human resources side of digital transformation in LAC, typically, the discussion begins and ends with a general recognition of the need to strengthen ICT capabilities. This contrasts with the approaches adopted by world leaders in digital government. A more sophisticated debate takes place in the digital strategies of Canada, the United Kingdom, Estonia, Israel, and Singapore. It ranges not only from the need to strengthen ICT capacities, but also includes digital leadership, deepening knowledge in cutting-edge areas, or promoting new ways of working that support digital transformation. Table A1.1 of the annex presents this analysis in detail. Digital transformation is largely absent from civil service strategic planning in LAC, as Table A1.2 of the annex reveals. This contrasts with the approach of leading countries in digitalization. For example, in the United Kingdom, a large part of the strategic vision for the civil service focuses on modernization to adapt to the digital context (Government of United Kingdom, 2016) and, in Estonia, the role of technology largely conditions the competencies required of senior management (Government of Estonia, 2017).

This book seeks to narrow the knowledge gap that exists in the nexus between digital transformation and human capital management. Its aim is to guide LAC governments in recruiting new talent, strengthening existing capacities, and fully exploiting human resources to achieve higher productivity in the public sector through digital transformation. The analysis is structured as follows:

CHAPTER 2

Analyzes the challenges faced and the lessons learned from integrated financial management systems (IFMS), a technological advance in the 1990s that changed the paradigm of public finances in many countries of the region and that has significant implications for human capital.

CHAPTER 3

Assesses the digital talent gaps in public institutions and their causes and presents a set of practices employed in leading digital countries to overcome similar challenges.

CHAPTER 4

Presents the results of a survey of more than 9,600 civil servants in Chile, which estimates the potential disruption of their occupations posed by digital transformation and analyzes their perceptions and attitudes about the changes associated with digital transformation.

CHAPTER 5

Analyzes how diverse institutions have tackled the changes caused by digital transformation in the tasks of civil servants, including how to balance the options of retraining and redeployment with those of retrenchment and recruitment.

CHAPTER 6

Presents a series of recommendations to enable LAC governments to tackle the human capital challenges associated with digital transformation.

ANNEX 1.1

TABLE A1.1 Instances When Human Capital Is Mentioned in Digital Strategies

Country	Year of Digital Strategy	Link	General Mention of Capacities, but with No Detail	General ICT Training	Training in Advanced Subjects	Specialized Recruitment	Digital Leadership	New Forms of Work
Argentina	2017	Digital strategy						
Barbados	2017	Barbados e-Government Programme Status Update		✔		✔		
Belize	2015	Digital strategy		✔				
Bolivia	2017	Digital strategy		✔	✔			
Brazil	2018	Decree on public telecommunications policies		✔				
Chile	2013	Digital strategy		✔				
Colombia	2019	Digital strategy		✔				✔
Costa Rica	2018	Digital agenda		✔	✔			✔
Ecuador	2011	Digital strategy						
El Salvador	2018	Digital government strategy			✔	✔	✔	✔
Guatemala	2015	Digital strategy						
Guatemala	2016	Digital strategy						
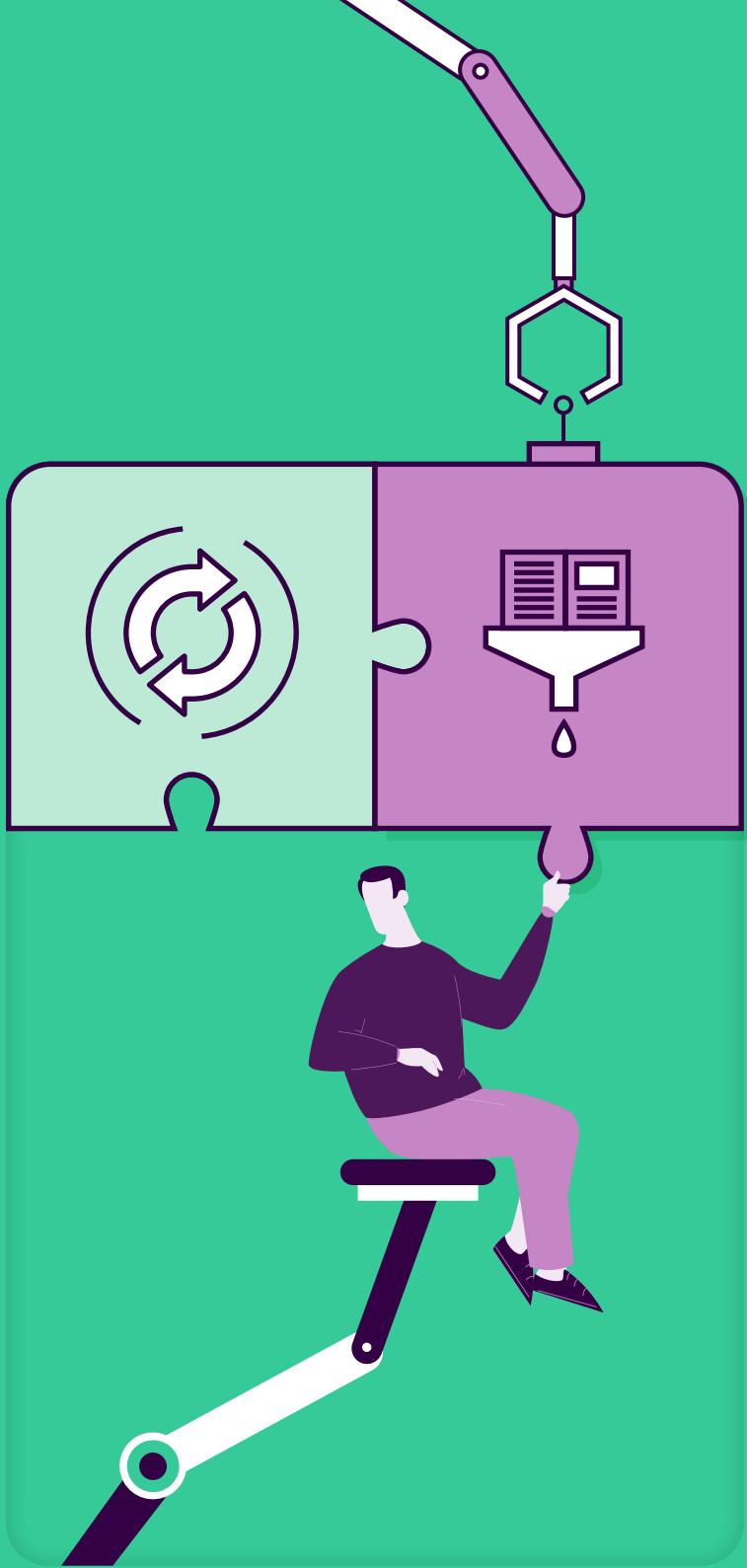
Country	Year of Digital Strategy	⚡ Link	General Mention of Capacities, but with No Detail	General ICT Training	Training in Advanced Subjects	Specialized Recruitment	Digital Leadership	New Forms of Work
Guyana	2006	Digital strategy						
Honduras	2015	Digital strategy		✔	✔			
Jamaica	2017	e-Gov Jamaica Ltd. Strategy						
Mexico	2013	Digital strategy						
Panama	2016	Digital strategy			✔			
Paraguay	2020	Digital agenda		✔		✔		
Peru	2011	Digital strategy		✔	✔			✔
Dominican Republic	2016	Digital agenda			✔			
Suriname	2012	Digital strategy	✔					
Trinidad and Tobago	2018	Digital strategy	✔					
Uruguay	2016	Digital strategy						✔
Canada	2018	Digital strategy			✔	✔		✔
Spain	2015	Digital tranformation plan	✔					
Estonia	2020	Digital strategy		✔	✔	✔		
Israel	2017	Digital strategy		✔		✔	✔	✔

Country	Year of Digital Strategy	Link	General Mention of Capacities, but with No Detail	General ICT Training	Training in Advanced Subjects	Specialized Recruitment	Digital Leadership	New Forms of Work
New Zealand	2014	Digital strategy				✔	✔	✔
Portugal	2018	Training program		✔				
United Kingdom	2012	Digital strategy			✔			✔
Singapore	2018	Digital strategy		✔	✔		✔	✔

Note: No digital strategies were identified for The Bahamas, Haiti, Nicaragua, or Venezuela.

TABLE A1.2 Digital Issues in Civil Service Plans

Country	Year and link to the analyzed plan	Recognizes that the digital transformation can change the way services are delivered	Mention of new recruitment needs	Specific mention of training in digital matters for civil servants	Mention of the use of technology for human resource management
Chile	2018	✔		✔	
Colombia	2020	✔			✔
Costa Rica	2019	✔			✔
Paraguay	2015	✔			✔
Peru	2019	✔			✔
Dominican Republic	2016/2018	✔		✔	✔
Trinidad and Tobago	2017	✔			✔
Uruguay	2019	✔			

2

CHAPTER
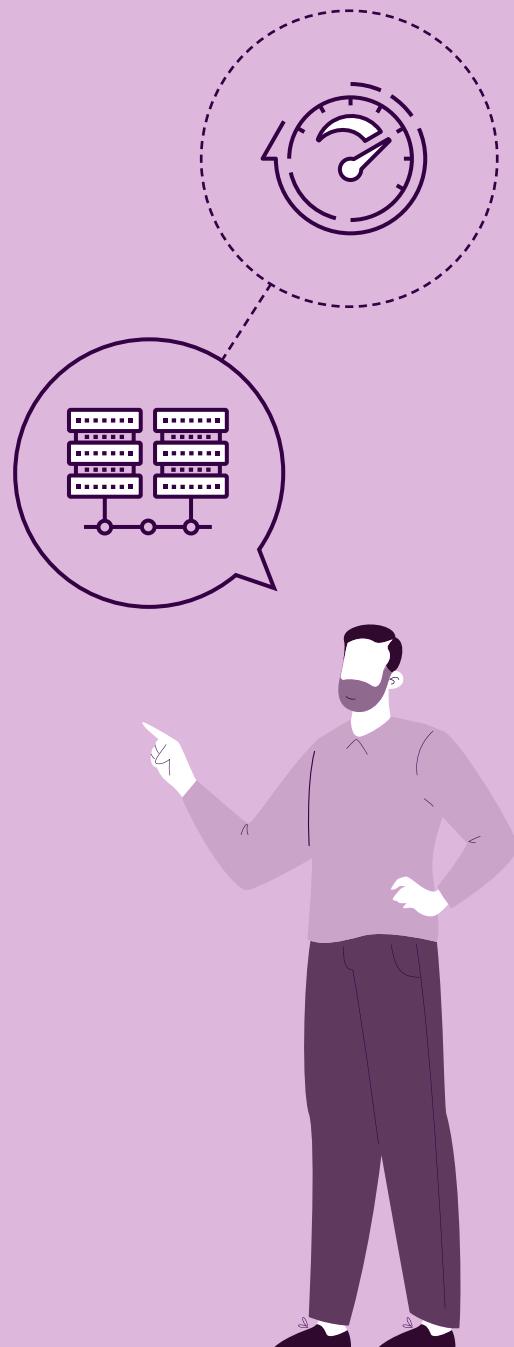
THIRTY YEARS OF EXPERIENCE
**MANAGING HUMAN CAPITAL IN
THE DIGITAL TRANSFORMATION** OF
PUBLIC FINANCIAL MANAGEMENT

AUTHORS | Edgardo Mosqueira · Angela María Reyes

ABSTRACT

The current wave of digital transformation has accelerated the introduction of information and communication technologies into the public sector. However, this is not the first time that governments have adopted new digital tools on a large scale. The introduction of integrated financial management information systems (IFMISs)[11] represented a technological advance in the public sector that got underway in the 1980s and substantially changed the work of civil servants. Before IFMISs, many public financial management processes were carried out on paper, on spreadsheets, or in fragmented computer systems, which required a great deal of manual work. Incorporating IFMISs substantially transformed the management of public finances, as it automated and centralized many processes and integrated certain value-added functions. The implementation of IFMISs is similar to the current digital transformation in terms of its impact on public employees. Therefore, experiences with IFMISs provide a relevant precedent in addressing some of the challenges posed by digital transformation for human resource management in the public sector. This chapter analyzes the impact of digital transformation on the work of civil servants, outlines the parameters of the debate about the change management measures implemented thus far, and identifies recommendations that can be extracted in the current context of digital transformation.

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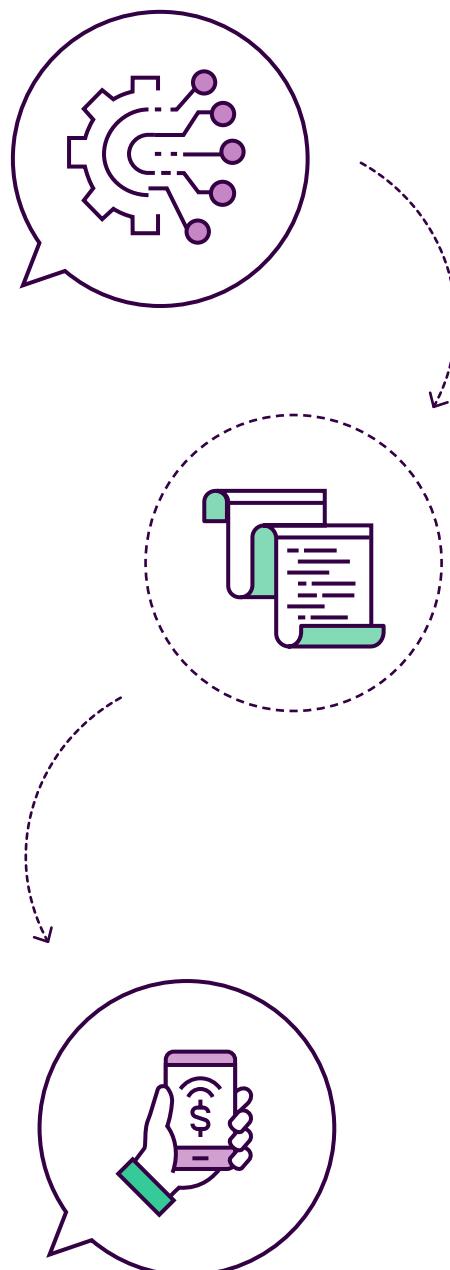
11. Also known as integrated financial administration systems (IFASs).

INTRODUCTION

One of the most important waves of technological modernization in the public sector has been the implementation of integrated financial management systems (IFMISs) at the end of the 1980s. IMFISs have had significant implications for human resources in the public sector worldwide. Before they were introduced, the tasks of generating, gathering, and analyzing revenue and expenditure data, as well as the tasks required to execute treasury, accounting, and control functions, were carried out either manually or using basic and fragmented computer systems. This hampered integration of all these functions, leading to inefficiencies in revenue and expenditure management.

IFMISs are "computer systems that automate the financial procedures needed to record the public resources collected" (Pimenta and Pessoa, 2015: 304). They include the use and integration of various computerized tools and systems to manage the budget cycle.

NORMALLY, THE CORE OF AN IFMIS CONTAINS FOUR MODULES— BUDGETING, TREASURY, ACCOUNTING, AND PUBLIC BORROWING—AND OFFERS FUNCTIONALITIES FOR EXECUTING PAYMENTS, STORING ACCOUNTS AND FINANCIAL RECORDS, AND GENERATING REPORTS.

IFMISs supported the reforms needed to integrate the management of all stages of the budget process—from planning, programming, and execution to monitoring of expenditures and revenues—thereby linking expenditures. They also introduced tools to digitally manage and automate many routine processes, thereby improving administrative planning, execution, reporting, and follow-up. IFMISs helped:

There are several parallels between the experience of IFMISs and the current digital transformation of government. In terms of service quality and administrative efficiency,[12] IFMISs offered substantial benefits thanks to the digitization and integration of systems, the automation of processes and tasks, and the introduction of new, more advanced functions. With regard to the impact on staff, IFMISs brought similar challenges.

Support substantial reform of
the budget process.

Provide financial and non-financial
information (e.g., data about recurrent
procurement of certain products
by public agencies or about public
employees and their pay scale, which
can help to improve planning).
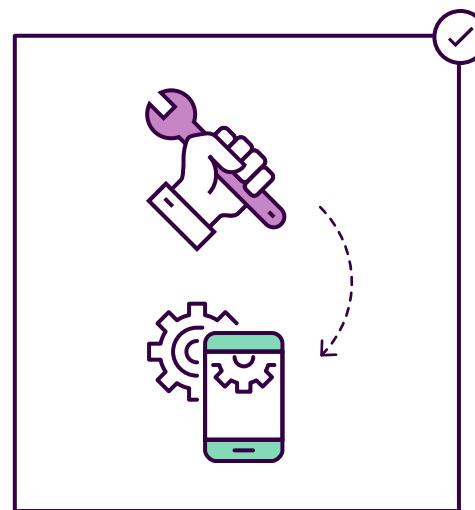
Mechanize routine tasks.
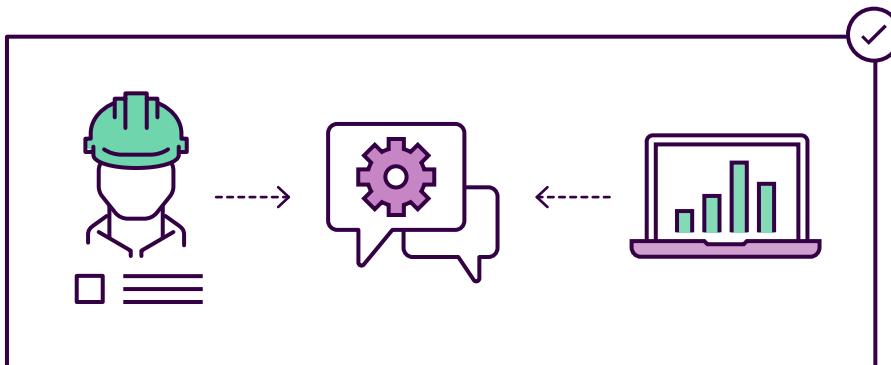
Systematize the most important information
from the budget process (Diamond and
Khemani, 2006).

TO **DRIVE** THE REFORMS FORWARD, THEIR IMPLEMENTATION CALLED FOR TECHNOLOGICAL TALENT THAT WAS HARD TO FIND AMONG CIVIL SERVANTS, WHICH MEANT THAT PERSONNEL MANAGEMENT SYSTEMS IN THE PUBLIC SECTOR WERE FORCED TO COMPETE WITH THE PRIVATE SECTOR.

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12. In the United States, the cost of federal benefits has been reduced by 90 percent since benefits began being paid electronically in 2013. In The Philippines, the cost of processing social benefit payments fell by 50 percent. The International Monetary Fund (IMF, 2017) calculated that digitization of government payments could lead to savings of up to one percentage point of gross domestic product in the majority of countries by eliminating leakage, losses, and fraud.

FURTHERMORE, IFMISs FORCED CIVIL SERVANTS AND INSTITUTIONS TO ADAPT TO THE SUDDEN CHANGES

in the day-to-day work of existing employees caused by the creation, modification, and elimination of tasks.

As is the case in the current context of digital transformation, various studies have revealed that paying close attention to these human resource implications was fundamental for the success of IFMISs and for the institutional reforms that they supported. A World Bank study of 55 IFMIS projects executed through 2010 and an evaluation carried out by its own Internal Evaluation Group (IEG) of 80 IFMIS projects executed before 2017 concluded that the lack of knowledge and skills among existing staff was the main cause behind the failure to successfully implement an IFMIS[13] (Dener, Watkins, and Dorotinsky, 2011; Hashim and Piatti-Funfkierchen, 2018). In a similar vein,

resistance from public agencies and interest groups comprising civil servants or third parties who felt that their interests were being threatened was the second most significant factor that hampered IFMIS implementation around the world (Dener et al., 2011).
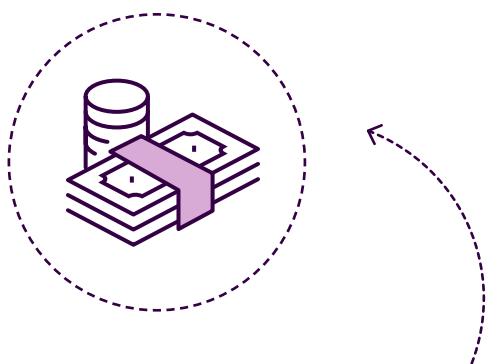
This chapter reviews 30 years of lessons learned about the impact of introducing IFMIS digital tools on the human resources of public institutions, so that the experience may serve as a guide for current digital transformation processes. It is structured around the two major challenges facing human resources in this sphere: the **drive toward** digital transformation (attracting and retaining specialized talent) and **adapting** to it (training and change management for existing civil servants). The experiences and the lessons presented here were identified following a review of the literature—including studies and evaluations by the IDB, the IMF, the United States Agency for International Development (USAID), and the World Bank—of the implementation of IFMIS projects throughout the world. This chapter is also based on the interviews conducted with consultants with expertise in setting up various IFMISs in LAC.[14]

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13.   The failures of implementation represented 16 percent of the cases analyzed. "Failure" in this case is defined both in terms of finalization of implementation and of the sustainability of IFMIS operations.

14.   The consultants with expertise in financial administration and project management—Carmen Zuleta, Gustavo Canales, and Bruno Barletti—were interviewed to glean the lessons that they had learned from implementing IFMISs in Colombia, Ecuador, and Peru.

NEW STAFFING REQUIREMENTS AND THE NEED TO REFORM PROCESSES TO ATTRACT AND RETAIN TALENT

Implementing and maintaining IFMISs meant hiring staff who had skills that were generally hard to find in the public sector. These included, for example, technical support teams with technological profiles that were previously not required in public administration. This posed a question that is now being faced by many governments conducting their own processes of digital transformation: How can the public sector attract the specialized talent needed to drive the transformation?

1

REVIEWING PUBLIC SECTOR CAREER PATHS AND SALARIES

The experiences of the Zambia, Maldives, Afghanistan, Guatemala, Afghanistan, Moldavia, Nepal, Pakistan, and Bangladesh show that the digital skills required were difficult to attract when offering the pay scales and the professional career paths available in public administrations (Dener, 2011; Hashim, 2018). In the case of South Africa, the limited number of staff with the knowledge and the digital skills required was due, among other causes, to emigration to other countries and to a private sector that offered better employment conditions (Hendriks, 2012; Maake, 2007). The lack of digital talent was such that it could not be filled merely by more training and additional recruitment efforts; career paths and public salaries also needed to be improved and better incentives offered (Chêne, 2009). The scale of the need for specialized staff

was significant. In the first years of its IFMIS, Peru required a support team of 30 supervisors and 300 technicians who offered technical assistance throughout the public sector and who were primarily young people who had recently graduated with degrees in technology.

Even if countries overcame the initial challenge of recruiting specialized talent, a further challenge awaited: retention. One of the impacts identified in many IFMIS projects is the progressive loss of the human resources in which much has been invested through training programs. The migration of talent to other projects in the public or the private sector, with higher remuneration and better working conditions, occurred often once people had acquired new skills and gained experience, undermining the investment in their recruitment and training (OECD, 2008).
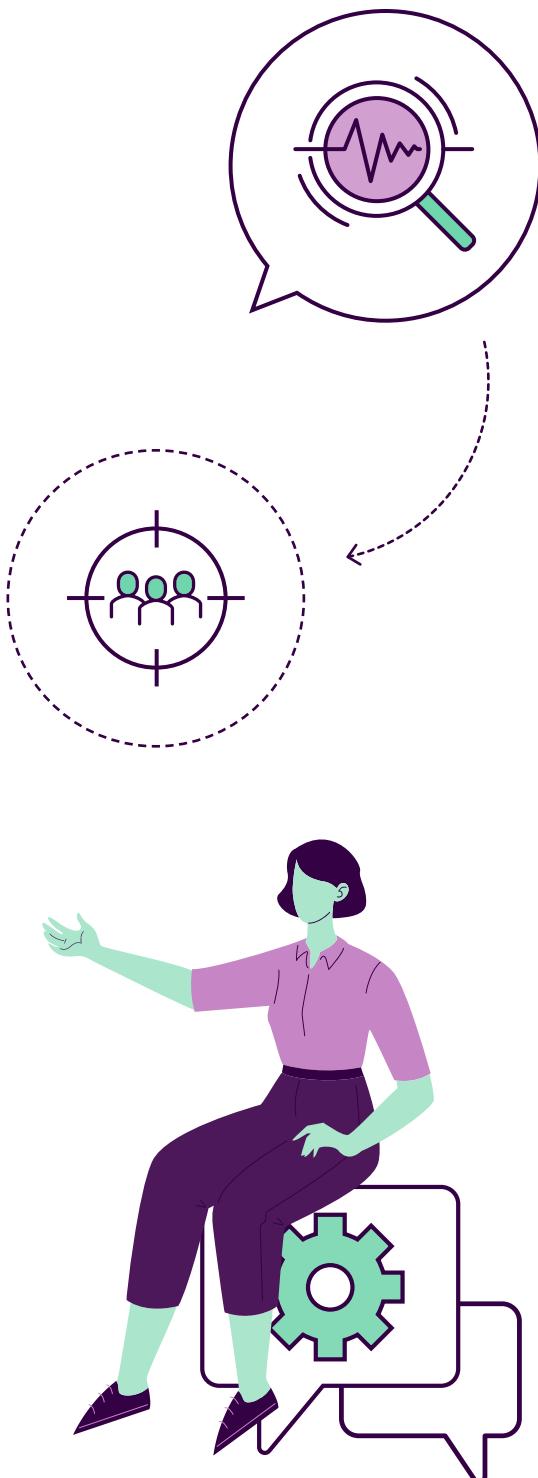
2

REVIEWING JOB DESCRIPTIONS AND CLASSIFICATIONS TO RETAIN TALENT

The new processes and activities introduced by computerized tools of the IFMIS often went hand in hand with substantial reforms in the budget process (e.g., the introduction of budget classifications or the Treasury Single Account). This required adjusting job descriptions and classifications to incorporate the new digital talent required. The case of Bolivia is representative, as the introduction of the IFMIS, alongside the reforms of the budget process, included setting up a new Accounts Directorate at the Treasury and eliminating ex ante budget control units at the Office of the Comptroller General. These changes led to modifications in the organizational structure of the Treasury and the creation of new accounting functions, new positions with their respective duties, and the recruitment of staff with knowledge of digital technologies to manage the IFMIS at the new Accounts Directorate.

Countries that were unable to make these adjustments opted to outsource management of the system to private firms. This was the choice made by Chile (using its SIGFE 2.0), Uruguay, and the Brazilian states of Pernambuco, Santa Catarina, and Espírito Santo. In Colombia, the support team was part of the consulting firms that implemented the IFMIS projects. These alternatives were possible in the short term, but they failed to resolve the structural problem of the inability to retain talent and of sustainability of the system over the medium term (Diamond and Khemani, 2006; Hashim and Piatti-Funfkirchen, 2018).

In Africa, outsourcing did not lead to better results (Peterson, 2016). In Nigeria, implementation of the IFMIS failed because the company that was hired was unable to appropriately in-

tegrate the solution to the existing processes. Moreover, the external contractors proved to be unreliable, meaning that implementation suffered multiple delays owing to the need to repeat the recruitment process.

CHANGES IN THE TASKS OF CIVIL SERVANTS AND THE NEED TO TRAIN THEM IN DIGITAL SKILLS

1

IDENTIFYING KNOWLEDGE AND SKILL GAPS AND HUMAN TALENT PLANNING

IMPLEMENTATION OF IFMISs CREATED NEW PROCESSES, ROUTINES, AND ACTIVITIES THAT TRANSFORMED THE TRADITIONAL TASKS OF PUBLIC FINANCIAL MANAGEMENT.

In some cases, these changes led to significant staff restructuring. In Bolivia, one of the pioneer countries that implemented the first IFMIS in the region in 1984, reforms in financial management and the IFMIS eliminated the ex ante control functions previously carried out by the Office of the Comptroller General and assigned new budget management functions to the Ministry of Finance. These measures meant that the tasks previously performed by various civil servants at the Office of the Comptroller General became obsolete. The affected civil servants took part in the training processes for the new budget model and the IFMIS, and those who passed the respective exams were invited to join the new Accounts Directorate at the Ministry of Finance. The Office of the Comptroller General underwent a radical transformation and reduced its workforce from 2,500 employees to approximately 900, whereas the Treasury, by creating the new Accounts Directorate, created new jobs, with different skill requirements.
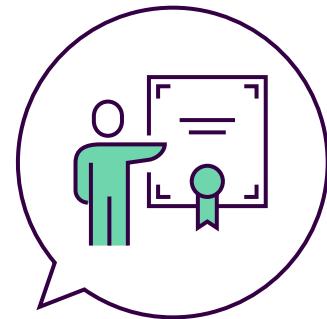
This case illustrates the need to foresee the impacts on redundancies that may be caused by introducing digital tools. In several successful cases, the first step was to identify the skills that were most needed and the most efficient way of providing them. Detecting these demands from the initial stages of the IFMIS deployment had a positive impact on its implementation, which enabled governments to hire the appropriate human resources in good time (Chêne, 2009). Outside of Latin America and the Caribbean (LAC), Kosovo is another interesting example of successful implementation, where the introduction of an IFMIS was preceded by an analysis of the gaps in human resources and of the needs that the system itself would create (USAID, 2008).

2

TRAINING FOR EXISTING STAFF TO CREATE THE NECESSARY KNOWLEDGE AND SKILLS

THE INTRODUCTION OF IFMISs IMPLIED A CHANGE IN THE TASKS OF THE CIVIL SERVANTS WHO WORKED IN THE AREA OF PUBLIC FINANCE.

Change was due not only to the financial management reform, which modified the processes they had to carry out, but also to the introduction of technology, which forced them to learn to use new systems (Hughes et al., 2017). This change in the tasks and/or roles of civil servants took place at both the central level, in finance ministries, and at the subnational government level and in other public institutions. In most cases, the civil servants affected had to develop new skills and knowledge.

Incorporating the knowledge required to be able to tackle changes in tasks was a fundamental component that had to be developed before IFMIS implementation, so that the employees would be capable of operating it. In Peru, training of civil servants began two years prior to the IFMIS implementation in 1999. This meant that, at the time of its launch, more than 500 training sessions had already been held throughout the country with the participation of nearly 3,000 civil servants. There were instruction manuals for the use of the IFMIS, and the training served

as a feedback mechanism for the conceptualization and development of the system. Moreover, the government held workshops for all civil servants who were going to operate the system—not only those at the Ministry of Economy and Finance, but also those working at other public institutions, both during the stage of IFMIS conceptualization and throughout its development and implementation.

In Chile, implementation of the IFMIS was accompanied by a comprehensive training strategy. By 2007, more than 10,000 public employees had participated in training activities related to using the new system (World Bank, 2007). Other countries, such as Argentina and Bolivia, created public financial management training centers. In Bolivia, the Comptroller General's Office opened a Public Financial Management Training Center (Centro de Capacitación en Administración Financiera Pública, or CENCAP), where civil servants from all institutions could receive the necessary instruction in operating the new public administration model and learn how to use the IFMIS. This center, which as of mid-2020 continued to train civil servants in these subjects, trained an average of 12,400 civil servants per year between 1997 and 2002 (World Bank, 2003). Argentina created a Training and Study Center (Centro de Capacitación y Estudios) at the Treasury Secretariat of the Ministry of Economy to implement the IFMIS. It continues to operate and offers training courses for civil servants from all regions, focusing exclusively on IFMIS-related matters.

Outside of LAC, in Turkey, training sessions accompanied the implementation of the IFMIS to increase digital literacy among civil servants at the institutions involved (which at the time was defined as basic computer management and was new for many public employees), and of the systems associated with the IFMIS. These sessions increased the digital literacy rate from 15 percent to 65 percent. Similarly, in Russia, there was a strong training drive that boosted the rate of digital literacy among civil servants from 25 percent in 2007 (at the beginning of the IFMIS project) to 80 percent in 2012, the year when the IFMIS had more than a million users throughout the country (Dener, 2019). The scope and quality of the training activities were important for converting many of the positions that became unnecessary after IFMIS was implemented.

A review of the successful cases reveals that the training programs had various aspects in common, including:

Training of public sector managers in the use of digital data for management purposes, so they could fully exploit its features.

The availability of a permanent user support service (OECD).

Strategies to align the supply of training in the public and private education system with the demand for knowledge and skills, with a view to satisfying the growing need for appropriate human resources generated by the ongoing expansion of the IFMIS (Hendriks, 2012).

The participation of all those involved in and/or affected by implementation of the system, including system managers, final users, and beneficiaries to facilitate the deployment of the IFMIS and reduce potential stress and resistance to change (Vickland and Nieuwenhuijs, 2005).

Training in the new substantive elements of the IFMIS, driven by reforms of the budget process (Diamond and Khemani, 2006).

Training for the use of the new modules, their programs, and software applications.

THE DISRUPTIONS CAUSED BY THE INTRODUCTION OF DIGITAL TOOLS AND THE NEED TO IMPLEMENT CHANGE MANAGEMENT STRATEGIES

The public financial management reform and the introduction of IFMISs changed both the composition of human resources and fiscal resource management. Both types of changes can cause resistance among groups of civil servants. Some employees may perceive risks to their job stability or threats to the quality of their products. Some interest groups may oppose changes that reduce the opportunity to engage in opaque financial management practices such as discretionality in payments to suppliers. Resistance on the part of public agencies and interest groups comprising civil servants or third parties that felt that their interests were threatened was one of the most significant obstacles in IFMIS implementation around the world (Dener, Watkins, and Dorotinsky, 2011).
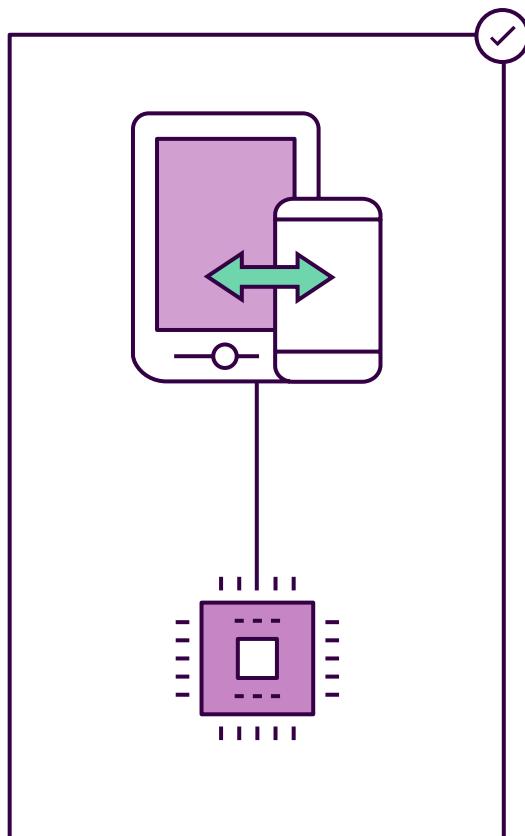
PART OF THE FAILURE ASSOCIATED WITH RESISTANCE TO CHANGE CAN BE ATTRIBUTED TO THE FACT THAT CHANGE MANAGEMENT WAS NOT EXPLICITLY CONSIDERED DURING THE FIRST WAVE OF THE IFMIS IMPLEMENTATION.

Despite being critical for project success, change management was generally neglected in IFMIS project design (Chêne, 2009; Combaz, 2015). Moreover, in the few cases where it was considered, it occurred at an advanced stage of the project rather than at the beginning, which hindered adoption of the system (Hughes et al., 2017).

Given the profound transformation that IFMISs implied for specific tasks, entire procedures, and organizational culture,

THE ABSENCE OF A DEFINED CHANGE MANAGEMENT STRATEGY GENERATED SIGNIFICANT COSTS IN SYSTEM ADOPTION AND EFFICIENCY.

In many cases, the introduction of IFMIS focused mainly on technology, neglecting the changes in culture and civil servant tasks. The incorporation of the technology was assumed to be easy, immediate, and sufficient to drive the change because it only implied a transition from paper to digital formats. This erroneous assumption was evident in the implementation of Peru's IFMIS II,[15] in which the resistance to change among public institutions impacted and delayed achievement of the planned results. The final report of the IDB project that financed this IFMIS revealed that "in the program evaluated, there were four proposals for modernizing the budget preparation procedures, including their automation. The fourth version was accepted because it did not incorporate changes in the procedures" (IDB, 2019: 28). This demonstrates how the absence of a change management strategy can negatively affect implementation of new technological tools.

Another example of resistance to change is Kenya, where civil servants continued to use manual procedures more than 10 years after adoption of the IFMIS (Wanyama and Zhen, 2011). The study shows that many senior civil servants, unaccustomed to attending training programs, sent officers without decision-making capacity or influence on their behalf, which prevented senior management from understanding the importance of implementing the IFMIS. Furthermore, the ministries continued to prepare two sets of financial reports: one manually and the other using the IFMIS. The civil servants explained that they were obligated to employ the manual system because they were only able to sign reports in their possession and believed that they only properly possessed physical, manually produced reports. This denoted a lack of awareness of the system's digital capacities.

What factors produced such resistance to the IFMIS? The group of low-ranking civil servants that were responsible for gathering and manually entering data (data entry operators) perceived that gathering data was the way that they could demonstrate the relevance of their jobs to their managers. The managers, meanwhile, considered that the data were the means of facilitating planning and efficient public resource allocation. Each group of civil servants viewed the same activity as having different objectives and impacts (Wanyama and Zhen, 2011).

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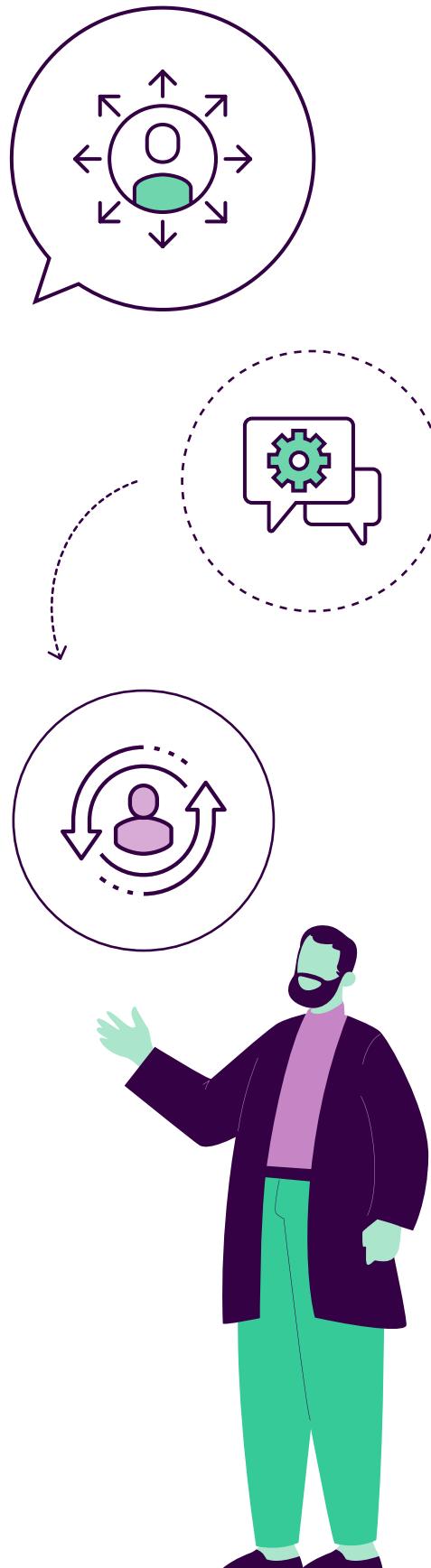
15. In 2008, the Ministry of Economy and Finance decided to implement a new IFMIS, since the first version contained weaknesses that limited financial resource management and the efficiency of expenditure management.

The data entry operators resisted the IFMIS because they saw it as a threat to their employment; they assumed that the automatic data-gathering provided by the IFMIS would supplant their manual data-gathering activity.

THE SKILLS OF THE DATA ENTRY OPERATORS WERE NOT ADAPTED TO THE NEEDS OF THE NEW DIGITAL TOOLS, NOR HAD THEY BEEN TRAINED TO APPRECIATE THE ADVANTAGES OF USING THEM.

For the managers, the IFMIS would create the opportunity to improve and accelerate data collection and consequently to improve public resource allocation. For a long time, these perceptions helped to consolidate resistance against implementing the system.

Similarly, in several LAC countries, some groups of civil servants fiercely resisted adopting the tool, which caused slow and less comprehensive implementation. Distrust of the computational integrity of the systems, whether owing to technical design errors or because the civil servants were determined to show that they were better than the system, inefficiently doubled the workload: the public employees did their accounting on calculators and attached the results manually to the system reports. Similarly, many of the system reports were printed to be reviewed, endorsed, and signed several times over to justify the work of the civil servants.

THE FOLLOWING ARE **FOUR APPROACHES TO CHANGE MANAGEMENT FOR DIFFERENT TYPES OF EMPLOYEES,** WHICH EMERGED FROM THE EXPERIENCE ACCUMULATED DURING IFMIS IMPLEMENTATION.

1

STRENGTHENING THE TECHNICAL LEADERSHIP

The experience of Tanzania shows the importance of having the support of senior and middle management for effective IFMIS implementation. The Tanzanian authorities viewed the IFMIS as a fundamental tool for increasing public sector transparency. The support from the highest levels of government extended to middle management and ensured the correct implementation of the system. In 2006, it was considered one of the most successfully implemented IFMISs in Africa. In contrast, the cases of Malawi and Kenya show how the lack of such leadership affects progress in implementation. In Malawi, there was no active participation by leaders of crucial institutions, such as the Ministry of Finance, or from the pilot implementing institutions. In Kenya, the leadership capable of communicating the strategic guidelines for implementation was lacking (Diamond and Khemani, 2006).

Establishing an IFMIS presupposes an effort that must involve the entire public administration. The examples provided underscore the importance of having senior management consisting of professionals with the skills to estimate and understand the scope and technical complexity of digital transformation, coordinate the preparation and implementation of plans in which multiple agencies and units participate, and design and lead the implementation. This must go hand-in-hand with a clear assignment of roles and responsibilities for project management (Diamond and Khemani, 2006).

2

STRENGTHENING LEADERSHIP OF MIDDLE MANAGEMENT

The middle manager possesses solid knowledge of the organization and its formal and informal norms, processes, and practices, and clearly understands its collaborative relationships, accountability, and power (or its organizational culture). In Slovakia and Tanzania, the involvement of middle managers was very important because they were responsible for the principal areas where the systems were established, and their knowledge helped to provide better information for their design and implementation (Chêne, 2009). In Ethiopia, IFMIS implementation suffered from a lack of interest from both senior and middle managers. Because they failed to see the value added to their work, they did not come on board with implementing the system (Peterson, 2016).

The experience of IFMISs shows that managers in charge of implementation must be familiar with the formal and informal rules that govern their organizations. They must have the skills needed to use the new ideas and concepts that the IFMIS brings to find creative solutions to the problems of implementation. They must be able to conduct negotiations with those affected by such measures, to mentor, to transfer knowledge, and to help with training in the new skills that the human resources responsible for the IFMIS must acquire (Denner, Watkins and Dorotinsky, 2015; Hashim et al., 2018; Hughes et al., 2017; Uña, 2012; USAID, 2008).

3

STAFF PARTICIPATION IN IFMIS DESIGN AND MANDATORY ADOPTION
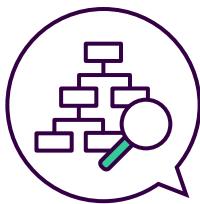
PARTICIPATION IN THE DESIGN OF THE IFMIS

The successful adoption of the IFMISs required the permanent involvement of both managers and users. Their participation helped provide information that improved the conceptualization of the system and the construction of use cases and architecture. It also guaranteed that the final design met the operational needs of the users (Diamond and Khemani, 2006). Furthermore, user participation in the design process improved acceptance of the tool and facilitated the change in culture by introducing the reforms gradually (in a process that generally lasted years).

Peru, for example, developed the first version of the IFMIS according to the needs of the civil servants who carried out the tasks. This was accomplished in part by working groups, in which civil servants worked alongside development engineers, contributing to the design of the tool. This ensured that the IFMIS would function for the processes that the civil servants needed. It also promoted a change in culture and facilitated the establishment of clear rules and acceptance of the new tool.

However, the process did not work as well in all countries. Colombia, for example, bought a pre-designed solution and developed the system externally without consulting the users or adjusting the tool to the use cases, and without technical support during implementation. This created inefficiencies because the system failed to respond to the specific needs of the workers. It also created resistance to its use because it was not completely compatible with the tasks that the civil servants needed to perform. Off-the-shelf systems impose rigidities that raise implementation costs because they are not adapted to the country's needs (Combaz, 2015). In Guatemala, there was a low level of participation during the process of shaping the IFMIS technology, which meant that "various managers expressed their discontent with the software being prepared for them, as they had not been consulted about their expectations or because they disagreed with the technical approaches adopted by the IT Directorate" (IDB, 2016: 13).

MANDATORY DEPLOYMENT

The lack of a regulatory framework to mandate the use of IFMIS was another factor that affected the level of adoption of the system. In Bolivia and Peru, for example, IFMIS implementation was accompanied by a regulatory mandate with measures to ensure that payments could only be made through the IFMIS. In contrast, in the Dominican Republic, Brazil, and Paraguay, the use of the IFMIS was not mandatory. This generated inefficiencies since civil servants often continued to keep duplicate accounts, both in the old system as in the IFMIS, making the latter an additional administrative step to a paper-based process that was inefficient to start with. This was due to a lack of trust and resistance to change, which led some civil servants to manually verify the processes carried out through the IFMIS. More importantly, there was a fear of internal control. Many civil servants maintained the paper-based process to protect themselves in the event that the system failed, resulting in an investigation by the comptroller or another monitoring body. Finally, financial management on paper enabled the continuation of illicit practices in the use and distribution of public funds.

In some cases, it is better to dismantle the outdated systems and processes as soon as possible to send a signal that the change is irrevocable (Hashim et al., 2018). The authors mention successful cases in Kazakhstan, Russia, and Vietnam, where the mandatory nature of the use of the new system translated into widespread adoption. A negative example is Malawi, where agencies were allowed to complete processes both manually and in the new system, enabling them to ignore the controls and processes needed for the correct operation of the new IFMIS.
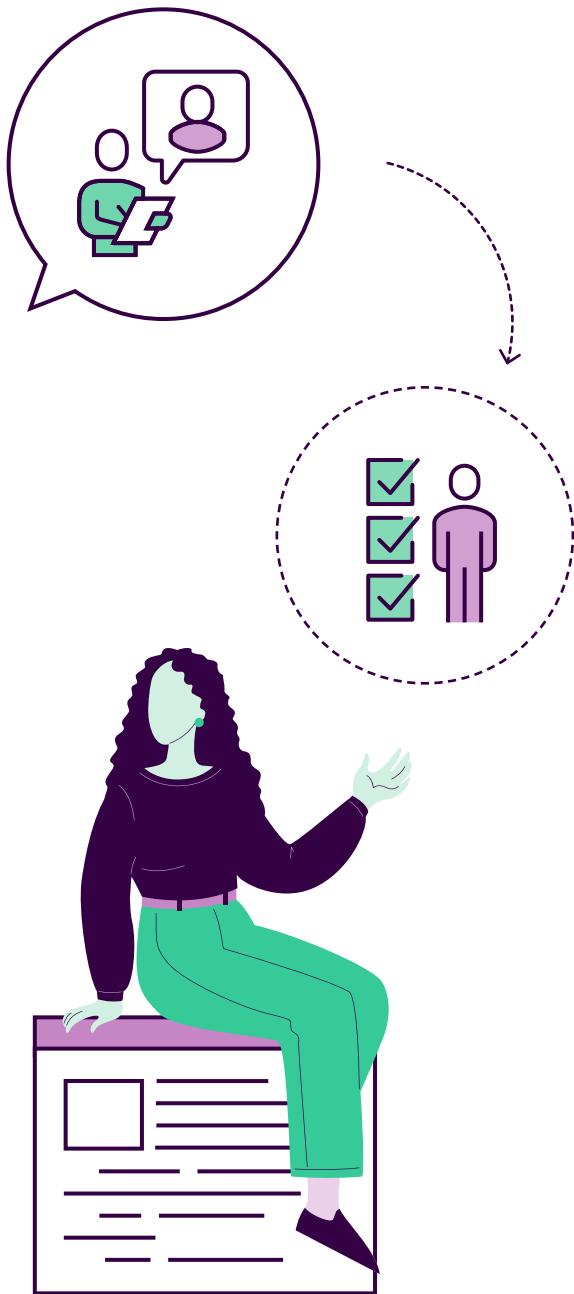
4

MANAGING SPECIALIZED EXTERNAL TALENT

The development of the IFMIS required considerable technical experience—by employing consultants with a solid background in the budget cycle—in the use of digital tools for government budgeting and accounting and in the execution of administrative reorganization and training programs.

ON THE POSITIVE SIDE, THE INTERACTIONS BETWEEN CIVIL SERVANTS WITH CONSULTANTS CREATED NEW DYNAMICS IN ORGANIZATIONAL CULTURE. THE PROXIMITY OF THE EXTERNAL TEAMS AND THE CIVIL SERVANTS MEANT THAT THE KNOWLEDGE TRANSFER WAS IMMEDIATE.[16]

Furthermore, this proximity enabled the tool to be co-created alongside public employees, promoting solutions that were adjusted to the needs of the institution. On the negative side, there were noticeable differences in salaries between external consultants and the civil servants who implemented the tool, which may have fueled resistance to change and to the system. The experience of IFMIS implementation in Ethiopia (Peterson, 2016) suggests that managers can only build trust in consultants through a clear understanding of the need for change and how the IFMIS can contribute to it. A similar experience can be drawn from implementation of the IFMIS in Ecuador and Peru.
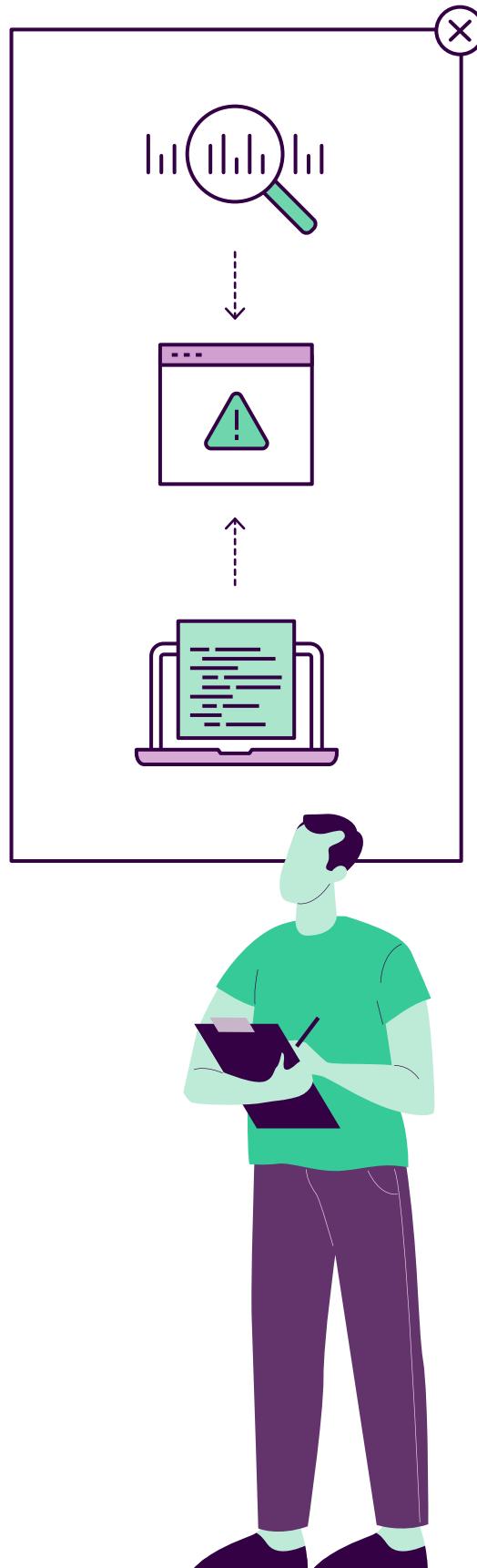
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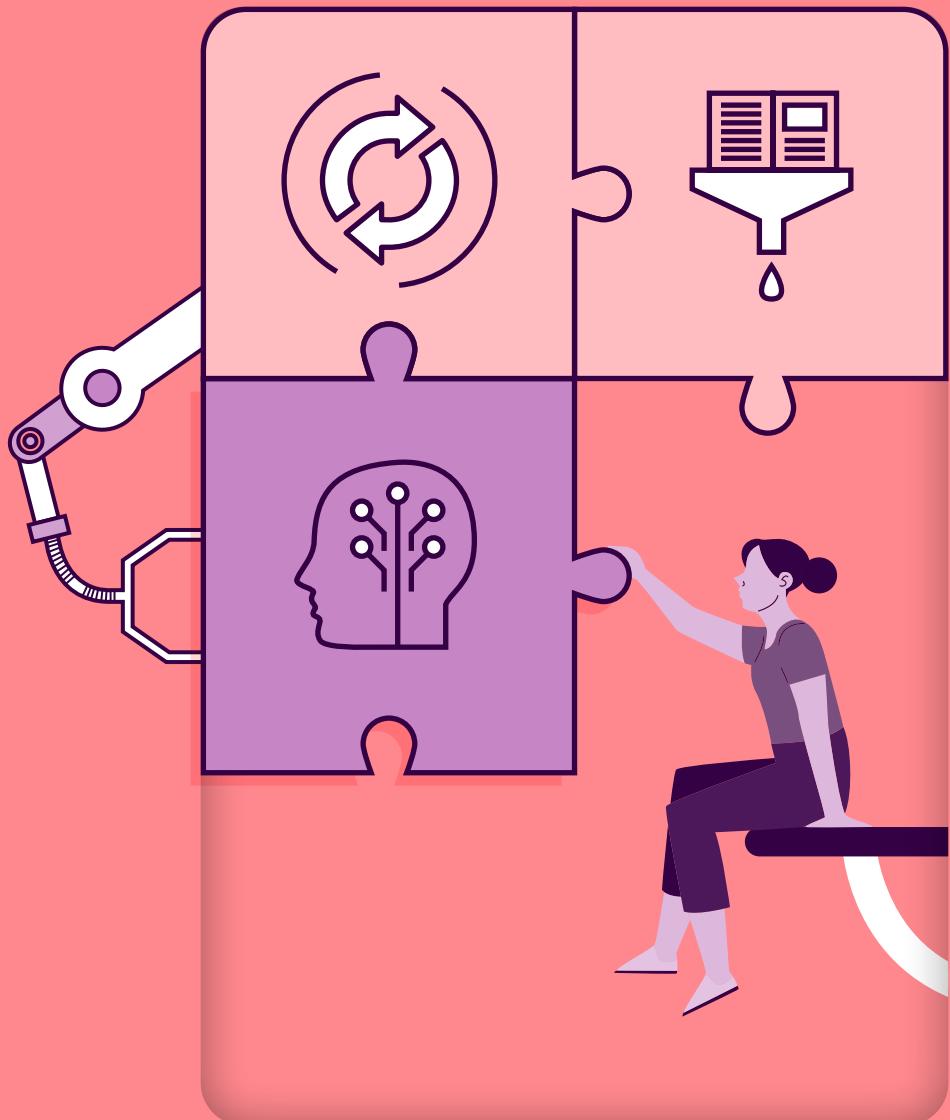
16. Such training, however, was not always successful. Although instructing civil servants was often an explicit clause in contracts with consultancy firms, in certain cases the contractual agreements were based on a number of hours rather than on results, which meant that training was often insufficient.

In cases where the IFMIS was designed to fit the needs of the country, teams of external consultants consisting of up to 80 to 100 people were installed temporarily in the ministries and institutions to set up the systems. These teams mostly comprised engineers, a profession that was not very common within the public sector at that time.

IN SOME AFRICAN COUNTRIES WHERE CUSTOMIZED IFMISs WERE DEVELOPED BY EXTERNAL CONSULTANTS, THERE WERE FAILURES IN THE PROCESS OF SYSTEM TRANSITION AND DELIVERY. IN MANY CASES, CLOSED DEVELOPMENTS MEANT THE CONTRACTORS WERE RELUCTANT TO GIVE THE CODES TO THE GOVERNMENTS OR TO HELP DEVELOP THE SKILLS TO MAINTAIN AND OPERATE THEM (PETERSON, 2016).

For this reason, operating and maintaining digital tools cannot be left wholly in the hands of consultants; they should be entrusted to civil servants from public agencies, while consultants undertake tasks intended to build capacity among the administration staff. These tasks should then be evaluated and rewarded based on results (Dener, Watkins and Dorotinsky, 2011; OECD, 2008).

3
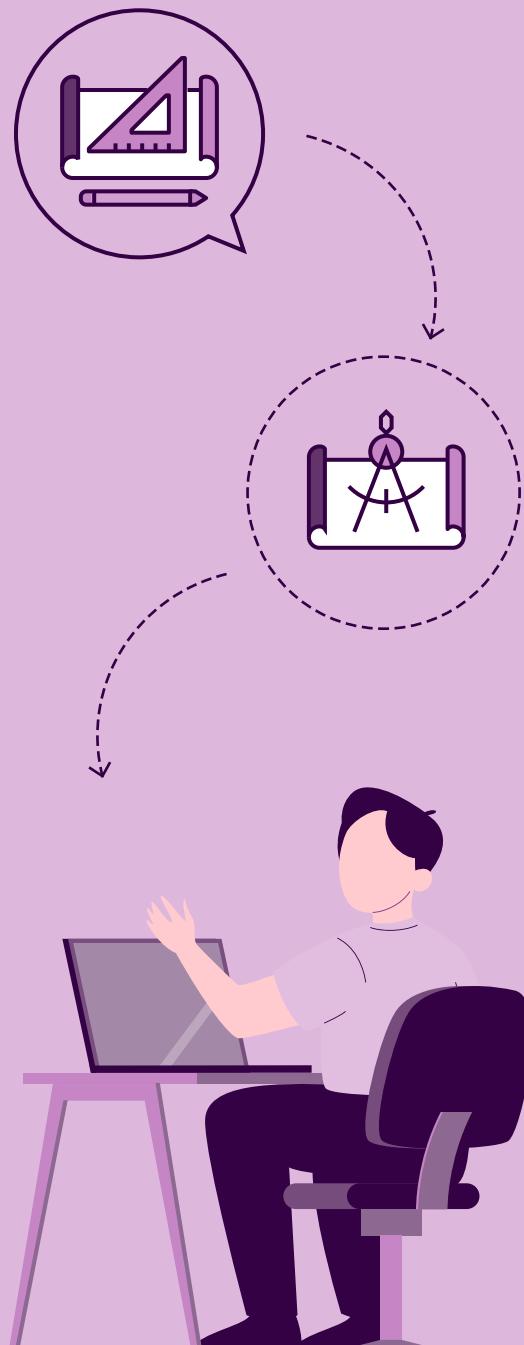
CHAPTER

FINDING THE **TALENT NEEDED**
TO DRIVE THE DIGITAL
TRANSFORMATION

AUTHORS | Benjamin Roseth · Angela María Reyes · Mariano Lafuente
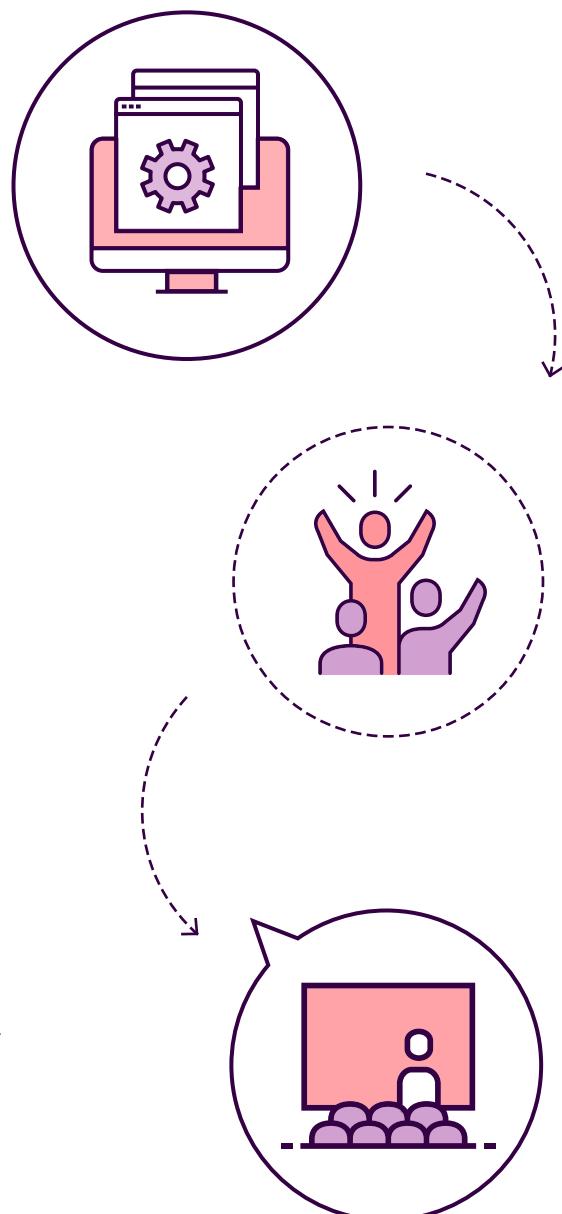
ABSTRACT

Driving digital transformation requires highly trained professionals for tasks ranging from the formulation of technological, regulatory, and organizational changes to the detailed design and implementation of the necessary digital tools. Most governments of Latin America and the Caribbean (LAC) have gaps in digital talent. They face significant obstacles, including scant availability of talent in the market, budgetary restrictions, and rigid rules for human resource management (recruitment, professional development, and salaries). Some of the leading countries in the digital arena have implemented human talent management models to tackle similar challenges. They have promoted digital talent development for the labor market in general, created short- or medium-term schemes for attracting talent from the private sector with a promise of high social impact, and developed digital professions within the civil service.
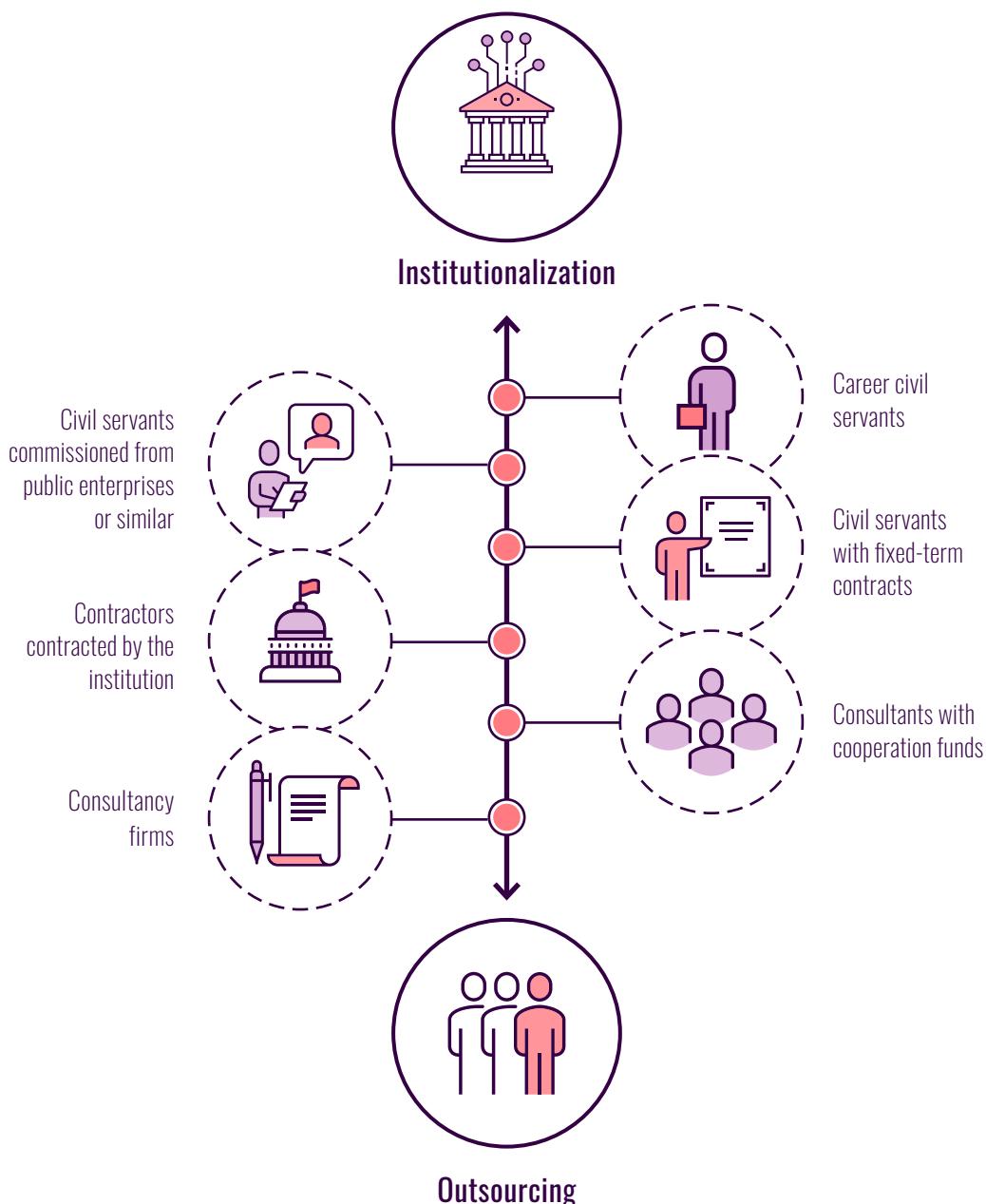
INTRODUCTION

DRIVING DIGITAL TRANSFORMATION IS A COMPLEX PROCESS. **IT REQUIRES PROFESSIONALS WHO ARE HIGHLY TRAINED FOR TASKS RANGING FROM TECHNOLOGICAL,** REGULATORY, AND MANAGEMENT CHANGES AT THE MACRO LEVEL TO THE DETAILED DESIGN AND IMPLEMENTATION OF EACH TOOL AT THE INSTITUTIONAL LEVEL.

There are a variety of ways of accessing the necessary talent, with different degrees of institutionalization and flexibility, as Figure 3.1 shows.
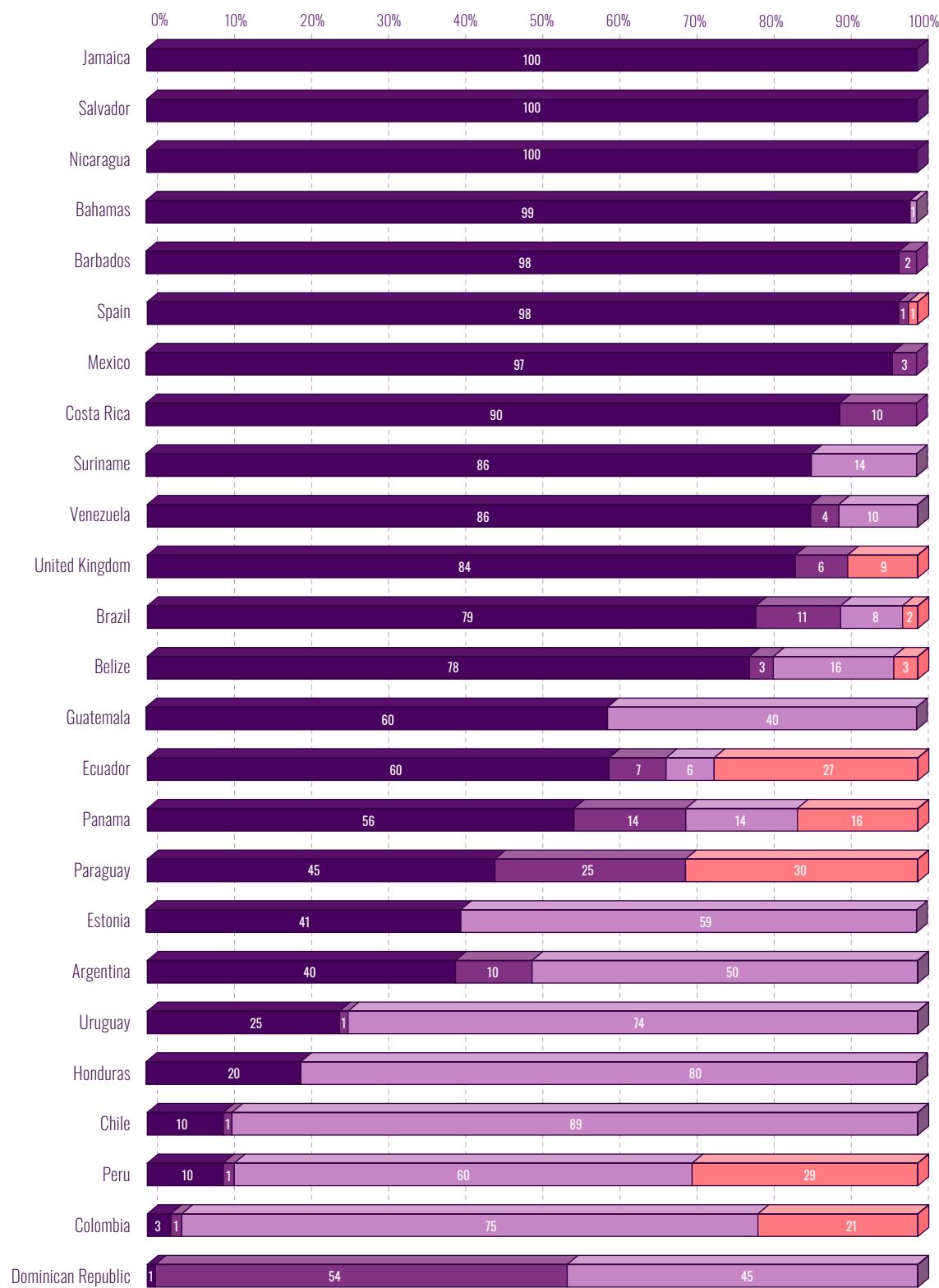
FIGURE 3.1 Attracting Digital Talent: Institutionalization versus Outsourcing

Institutionalization

Career civil servants

Civil servants commissioned from public enterprises or similar

Civil servants with fixed-term contracts

Contractors contracted by the institution

Consultants with cooperation funds

Consultancy firms

Outsourcing

Source: Authors' elaboration (IDB, 2020).

There is no single way to achieve balance between institutionalization and outsourcing. The countries analyzed show substantial heterogeneity in this regard: in eight of the digital government authorities studied, more than 90 percent of staff were career civil servants, while in nine of them, 50 percent of staff were consultants or political appointees (Figure 3.2). In a similar vein, 13 of the 25 LAC digital government authorities rely on a complementary workforce that is external to the government, through firms with retainer-type contracts that satisfy their talent needs (IDB-GEALC Survey 2019).

FIGURE 3.2 Percentage of Digital Government Authority Staff, by Type of Contractual Relationship

Country	Administrative career	Position of trust	Contractor/service provider	Other type of contract
Jamaica	100			
Salvador	100			
Nicaragua	100			
Bahamas	99		1	
Barbados	98		2	
Spain	98		1	1
Mexico	97		3	
Costa Rica	90		10	
Suriname	86		14	
Venezuela	86	4	10	
United Kingdom	84	6		9
Brazil	79	11	8	2
Belize	78	3	16	3
Guatemala	60		40	
Ecuador	60	7	6	27
Panama	56	14	14	16
Paraguay	45	25		30
Estonia	41		59	
Argentina	40	10	50	
Uruguay	25	1	74	
Honduras	20		80	
Chile	10	1	89	
Peru	10	1	60	29
Colombia	3	1	75	21
Dominican Republic	1	54	45	

● Administrative career   ● Position of trust   ● Contractor/service provider   ● Other type of contract

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

ACROSS THE PERMUTATIONS IMPLEMENTED TO DATE, THE DIGITAL TALENT AVAILABLE TO THE GOVERNMENTS OF THE REGION APPEARS TO BE INSUFFICIENT.

Of the more than 700 Latin American public managers surveyed, 64 percent report having participated in a technology project in the last five years that failed due to the lack of skills of the people involved (IDB-COPLAC, 2019). Similarly, there appears to be no clear correlation between the contractual mechanism and the probability of success with a digital reform project.

This chapter analyzes the digital talent gaps observed in LAC governments, their causes, and the solutions that some leading countries in the area of digital government have implemented to tackle similar challenges. Far from prescribing a formula for the right balance for accessing digital talent, this chapter assumes that the decision depends on multiple factors: opting for civil servants is more attractive when there are lower transaction costs associated with recruitment, more resources for attracting highly qualified talent, and more mechanisms for professional development and continuous learning. In contrast, when there are significant barriers to hiring civil servants, scant resources available to compete for talent, and limited options for professional development and continuous learning, then the use of outside contractors, consultants, and firms becomes more feasible.

Dependence on outsourced solutions poses a series of challenges. First, it can generate a risk of conflict of interest when contractors respond to incentives from two organizations—the government on the one hand and the company owner on the other (Fukuyama, 2020). This is particularly true when there is a competitive market, the services are complex, and the products are heterogeneous, as often occurs with digitization. This makes it difficult for the public to identify and complain about suboptimal services (Keefer, 1998). Second, outsourcing services encourages civil servants, once they have acquired the necessary skills, to leave the public sector and provide services to the government as higher-paid contractors (Fukuyama, 2020). This persistently undermines the strength of the talent available to the state. Likewise, inequities in the level of compensation of civil servants with respect to external service providers can cause resentment among officials and negatively affect morale (Breza et al., 2018; Sanabria, 2015). Moreover, in some institutions, contractors have less access to training, which makes it difficult for them to update their skills or make changes to internal processes or tasks (Sanabria, 2015). Finally, a high turnover rate of contractors or commissioned employees in an organization can affect the capacity to build institutional memory.

For these reasons and given that, regardless of the scenario, the government should always have a minimum array of talent internally, this chapter focuses on the people who work in the public sector. It does not address the challenges associated with hiring external consultants and firms.

The snapshot of the current situation in the region is based largely on a survey administered to 25 digital government authorities at the national level (Red GEALC),[17] complemented by the inclusion of three leading countries in the area of digital government from outside the LAC region (Estonia, Spain, and the United Kingdom).[18]

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17. Carried out between June and October 2019 via the Electronic Government Network of Latin America and the Caribbean (Red de Gobierno Electrónico de América Latina y el Caribe, or Red GEALC).

18. These three countries answered the survey. The case of the United States, which did not participate in the survey, is also studied below.

Creating and implementing a digital transformation strategy.

Creating and managing shared services, such as digital identification and signature, interoperability, and others.

Redesigning public services and making them available online for citizens and firms.

Coordinating the digital transformation agenda with other actors inside and outside of the public sector.

Developing digital capacity in public sector institutions, among others.

The analysis of the challenges faced by governing bodies in the area of human capital is relevant in two ways. First, digital government authorities at the national level play an essential role in digital transformation because they are the ones that drive it forward. Typically, they are responsible for:
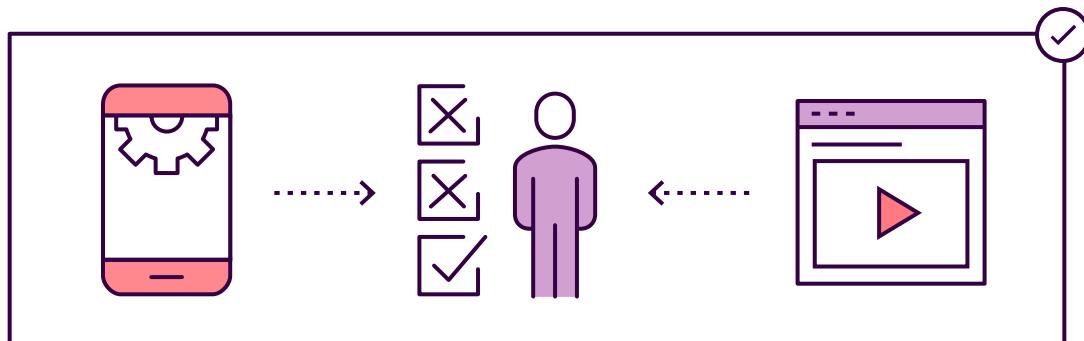
Furthermore, this analysis can inform the rest of the public sector, insofar as the digital talent needs and the enabling conditions (e.g., the rules governing the civil service) are similar. As a complement, evidence is presented from a survey of more than 700 Latin American public sector managers.[19]

The discussion of the practices of leading countries centers on the experience of four countries with different human talent models: Spain, the United Kingdom, the United States, and Uruguay.[20]

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19. Conducted between July and August 2019 among professionals in 18 Latin American countries (17 Spanish-speaking countries and Brazil) via the Latin American Community of Practice on MfDR (Red de Comunidad de Profesionales en Latinoamérica y el Caribe en Gestión para Resultados en el Desarrollo, or Red COPLAC).

20. Annex 3.2 presents a brief description of the digital government authorities in these four countries.
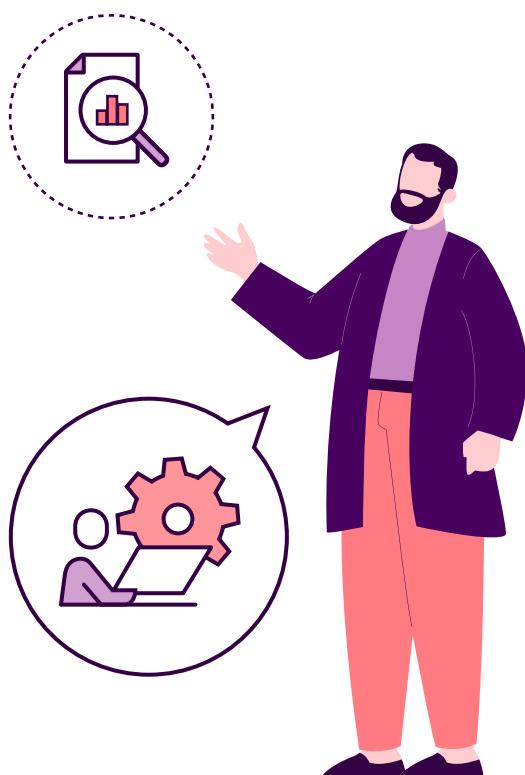
LATIN AMERICAN AND CARIBBEAN GOVERNMENTS NEED MORE DIGITAL TALENT

THE GOVERNMENTS OF LAC HAVE SEVERE DEFICITS OF DIGITAL TALENT.
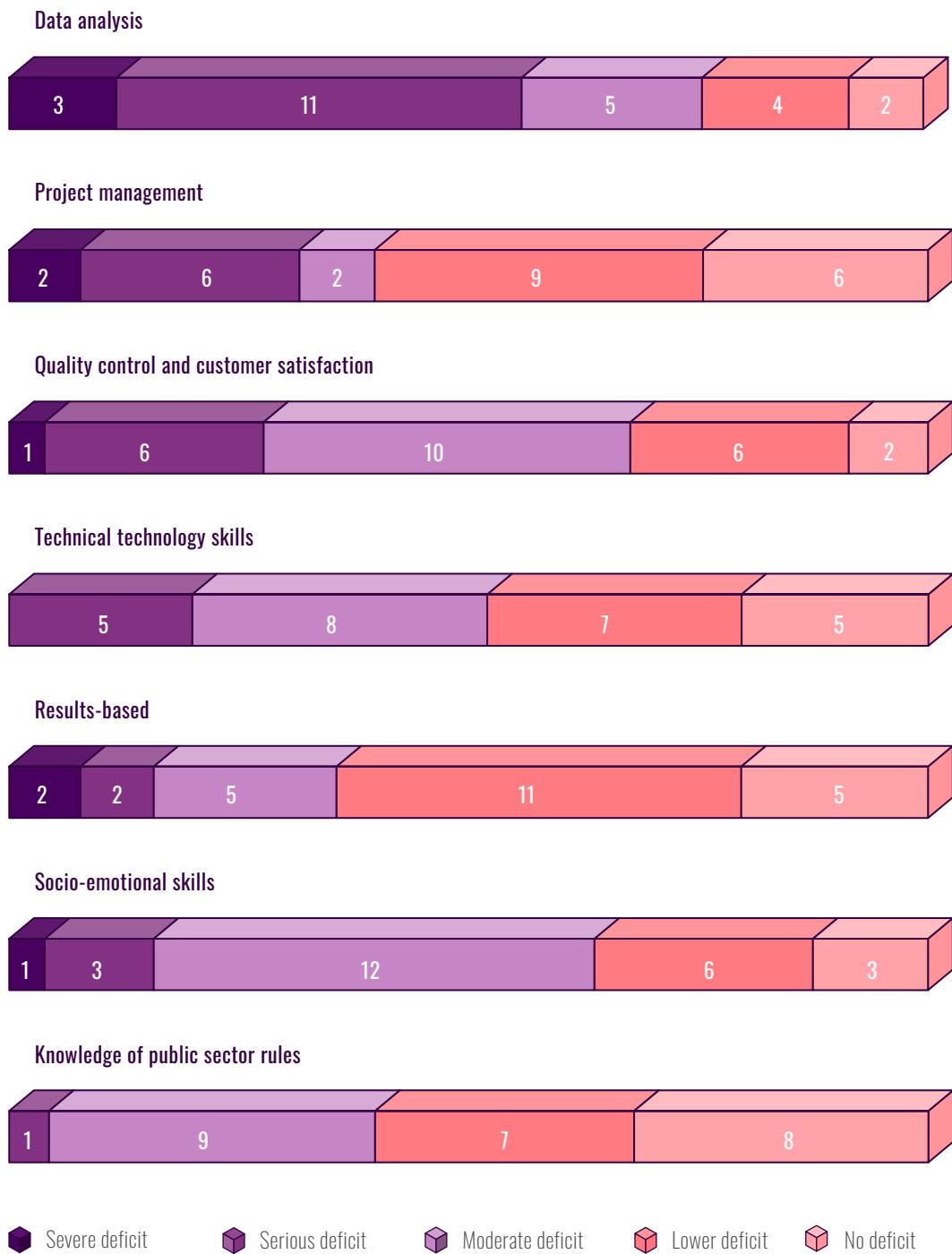
This is evidenced by the way that public managers identified shortcomings in their teams: 51 percent reported a "severe" or "very severe" lack of skills in data analysis, and 40 percent reported the same deficits in programming and software development skills (IDB-COPLAC, 2019).

Digital government authorities also reveal similar deficits: their leaders reported that skill needs were unmet in a variety of areas, beginning with data analysis and project management (see Figure 3.3). Moreover, compared to other leading countries in the area of digital government, the LAC region's digital government authorities are not equipped with many of the key roles for driving forward the digital transformation (see Figure 3.4 and Table 3.1). These include change management specialists, specialists in digital content accessibility, user experience researchers, and cloud specialists. Likewise, there is a disconnect between the mandates of governing bodies—which are often very broad—and real staffing levels (see Figure 3.3).[21] With regard to staffing, although the comparison is imperfect due to differences in country size and assigned roles, it is clear that there is more consistency between mandates and staffing levels in Estonia, Spain, and Uruguay than in other countries.

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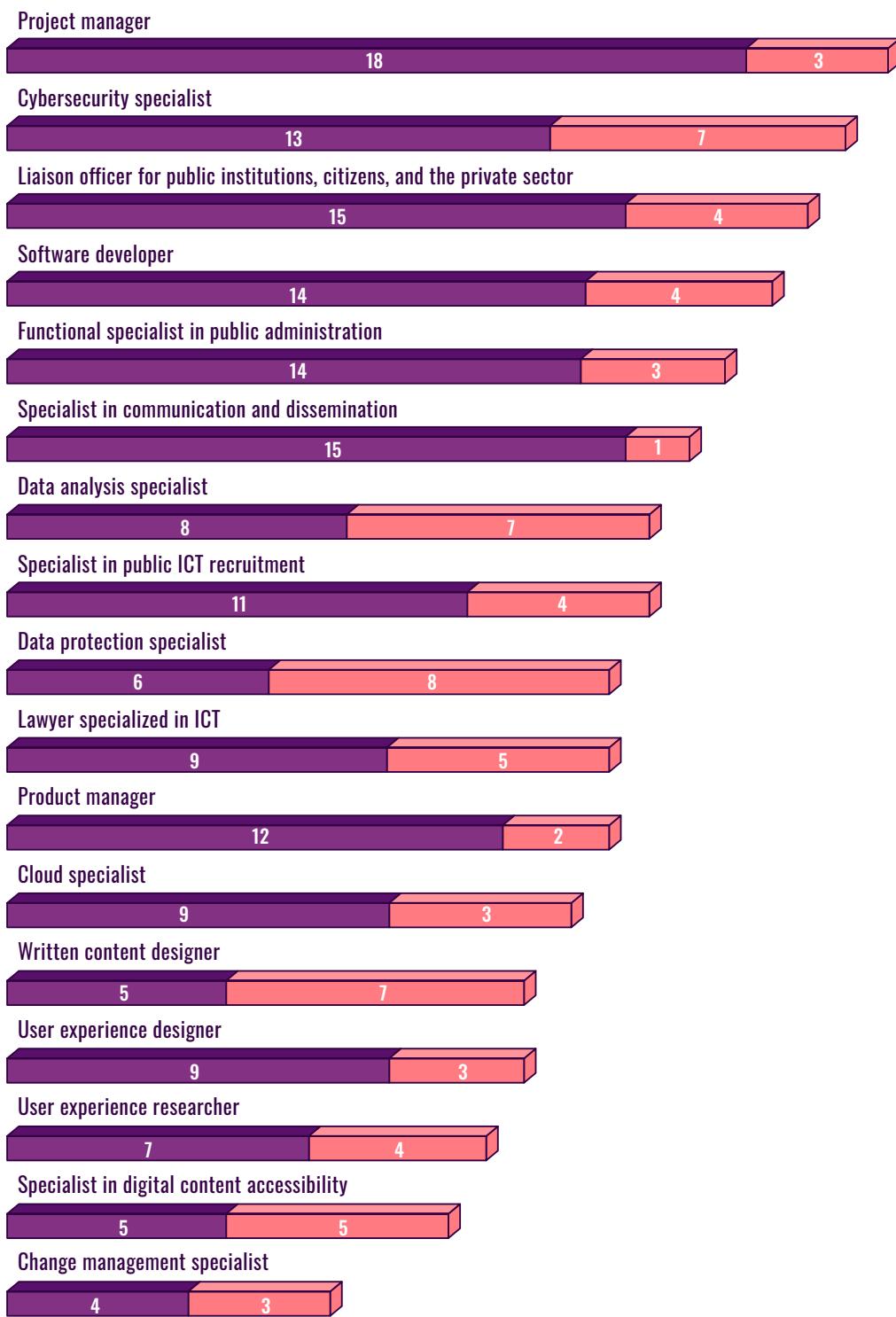
21.   Annex 3.3 contains a list of the possible activities of a digital government authority.

FIGURE 3.3 Skills Gaps Reported by Digital Government Authorities

Data analysis

| 3 | 11 | 5 | 4 | 2 |

Project management

| 2 | 6 | 2 | 9 | 6 |

Quality control and customer satisfaction

| 1 | 6 | 10 | 6 | 2 |

Technical technology skills

| 5 | 8 | 7 | 5 |

Results-based

| 2 | 2 | 5 | 11 | 5 |

Socio-emotional skills

| 1 | 3 | 12 | 6 | 3 |

Knowledge of public sector rules

| 1 | 9 | 7 | 8 |

⬢ Severe deficit   ⬢ Serious deficit   ⬢ Moderate deficit   ⬢ Lower deficit   ⬢ No deficit

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Note: The figure includes only LAC countries. The full response options were: (i) data analysis; (ii) project management; (iii) quality control and customer satisfaction, both internal and external (citizens and firms); (iv) digital technology skills, such as programming and software development, technology architecture, etc.; (v) results-based approach; (vi) soft skills, such as adaptability, curiosity, flexibility and perseverance; (vii) knowledge of public sector rules and procedures; and (viii) any other area in which there is a significant deficit: _____.

FIGURE 3.4 For Which of the Following Functions Do You Have at Least One Person Working Exclusively?
(Affirmative responses in a total of 25 countries, LAC only)

Project manager
| 18 | 3 |

Cybersecurity specialist
| 13 | 7 |

Liaison officer for public institutions, citizens, and the private sector
| 15 | 4 |

Software developer
| 14 | 4 |

Functional specialist in public administration
| 14 | 3 |

Specialist in communication and dissemination
| 15 | 1 |

Data analysis specialist
| 8 | 7 |

Specialist in public ICT recruitment
| 11 | 4 |

Data protection specialist
| 6 | 8 |

Lawyer specialized in ICT
| 9 | 5 |

Product manager
| 12 | 2 |

Cloud specialist
| 9 | 3 |

Written content designer
| 5 | 7 |

User experience designer
| 9 | 3 |

User experience researcher
| 7 | 4 |

Specialist in digital content accessibility
| 5 | 5 |

Change management specialist
| 4 | 3 |

⬡ Full time   ⬡ Part time

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Note: The numbers within the bars indicate the number of countries that selected that answer option.
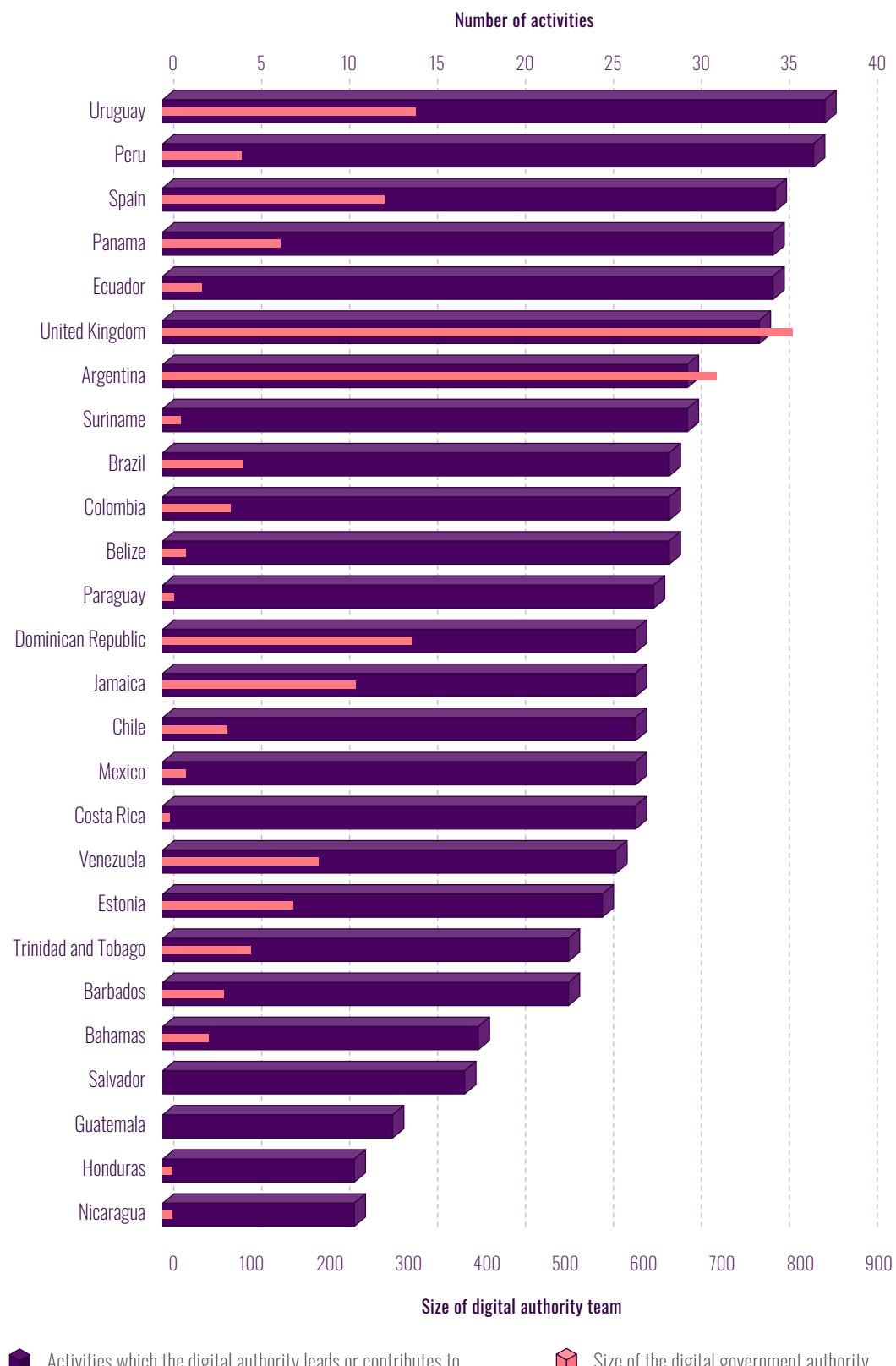
TABLE 3.1 Do the People Who Perform these Functions Work Full- or Part-Time? (Leading countries in digital technologies)

Function		Spain	Estonia	United Kingdom	Uruguay
1	Project manager	●	●	●	●
2	Cybersecurity specialist	●	●	●	●
3	Liaison officer for public institutions, citizens, and the private sector	●	●	●	●
4	Software developer	●	●	●	●
5	Functional specialist in public administration	●	●	●	●
6	Specialist in communication and dissemination	●	●	●	●
7	Data analysis specialist	●	●	●	●
8	Specialist in public ICT recruitment	●	●	●	●
9	Data protection specialist	●	●	●	●
10	Lawyer specialized in ICT	●	●	●	●
11	Product manager	●	●	●	●
12	Cloud specialist	●	●	●	●
13	Written content designer	●	●	●	●
14	User experience designer	●	●	●	●
15	User experience researcher	●	●	●	●
16	Specialist in digital content accessibility	●	●	●	●
17	Change management specialist	●	●	●	●

● Full time   ● Part time   ● Non-existent
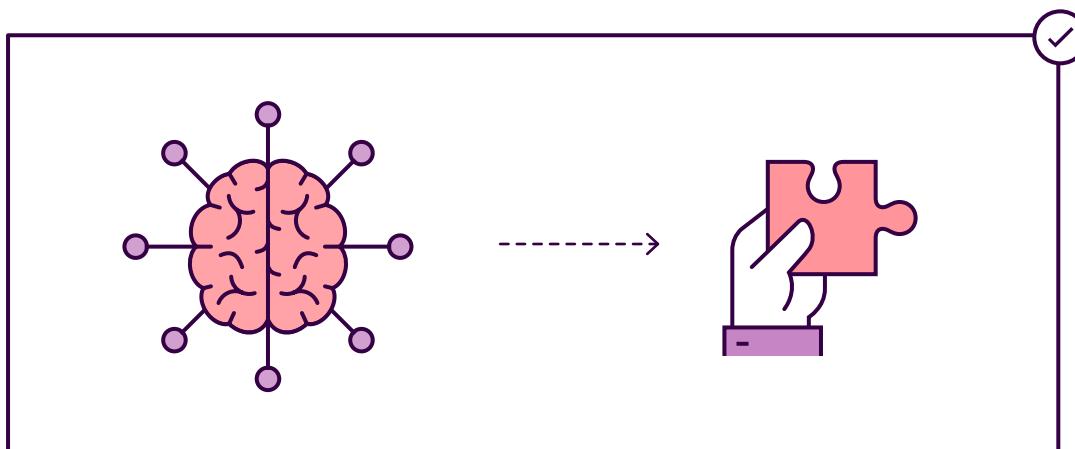
FIGURE 3.5 Contrast Between the Institutional Mandate and the Number of Professionals on Digital Authority Staff

Number of activities

Size of digital authority team

- Activities which the digital authority leads or contributes to
- Size of the digital government authority
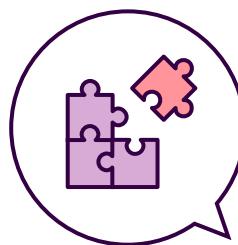
Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

THE AUTHORITIES OF SOME COUNTRIES ALSO SUFFER FROM AN ADDITIONAL DEFICIT: A GENDER GAP IN THE COMPOSITION OF DIGITAL TALENT.
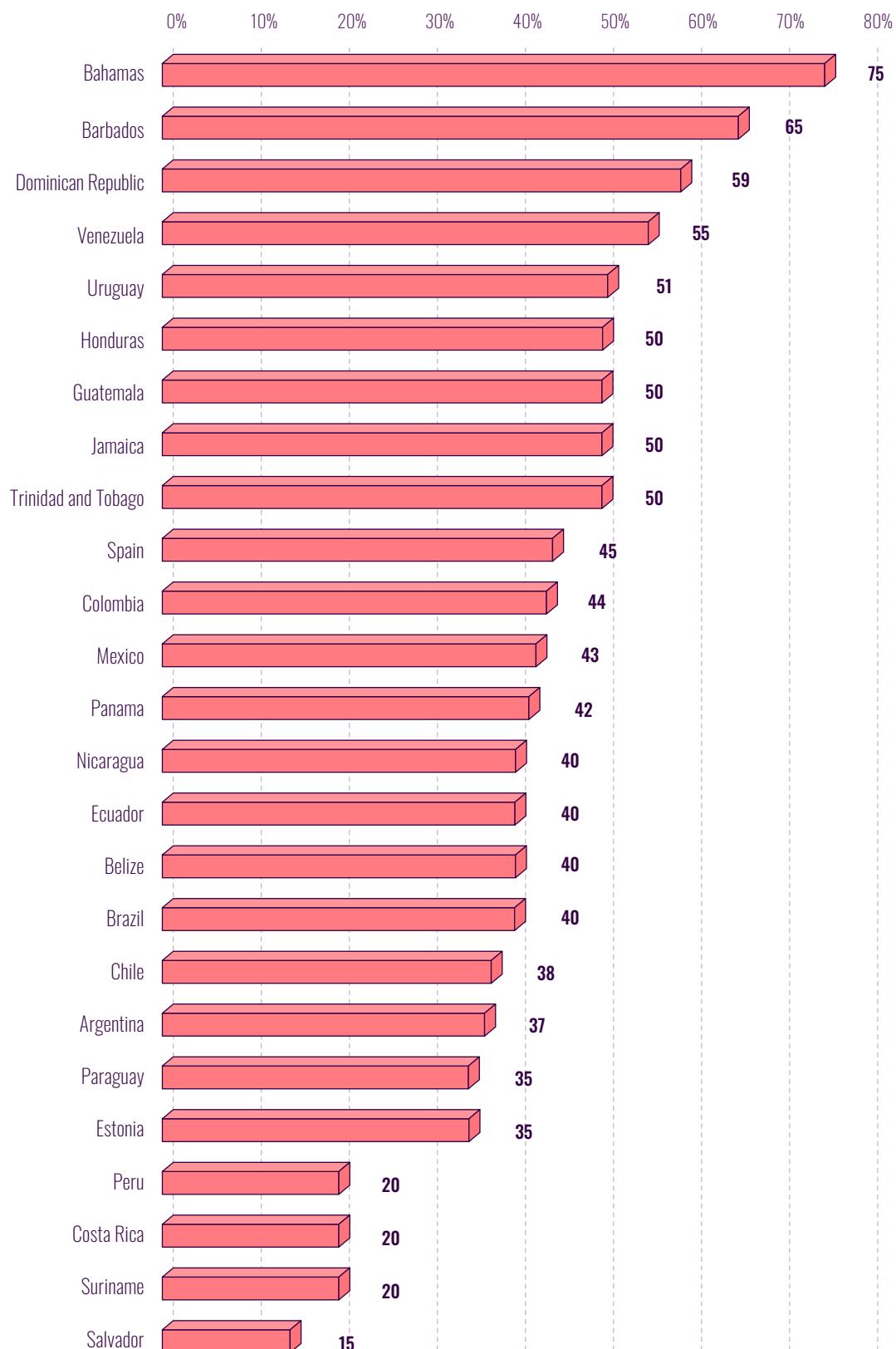
Only in 9 of the 25 countries analyzed (23 in the LAC region) did women comprise half or more of the staff of the digital authorities, and in 4 they represented 20 percent or less (see Figure 3.6). The imbalance is even greater in leadership positions: toward the end of 2019, a woman led the digital authority in only 5 of the 23 LAC countries studied (Bahamas, Colombia, Guatemala, Nicaragua, and Peru). The gender balance is important in terms of both equality of employment opportunities and increases in productivity. Abundant literature has found that teams with a good gender balance tend to be more productive (Ali, 2006; Opstrup and Villadsen, 2015; and Hoogendoorn, Oosterbeek, and Van Praag, 2013).

As described in Box 3.1, gender is not the only relevant type of diversity. Neurodiversity is also important in developing and promoting digital talent.
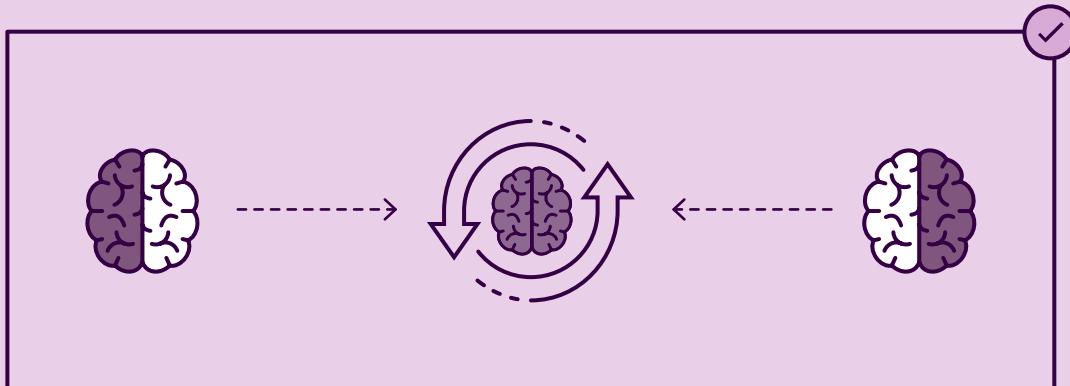
Note: The digital government authority of Estonia lacks many of the functions employed by the other leading countries. There are two reasons for this. The first is that its high degree of digital development in public administration means there are many institutions that already employ people dedicated to data analysis and ICT recruitment. The second is that its failure to focus on user experience has been a common criticism. See, among others, https://arstechnica.com/information-technology/2015/08/im-now-an-estonian-e-resident-but-i-still-dont-know-what-to-do-with-it/

FIGURE 3.6 Percentage of Women among the Staff of the Digital Authority of Digital Government

Country	Percentage
Bahamas	75
Barbados	65
Dominican Republic	59
Venezuela	55
Uruguay	51
Honduras	50
Guatemala	50
Jamaica	50
Trinidad and Tobago	50
Spain	45
Colombia	44
Mexico	43
Panama	42
Nicaragua	40
Ecuador	40
Belize	40
Brazil	40
Chile	38
Argentina	37
Paraguay	35
Estonia	35
Peru	20
Costa Rica	20
Suriname	20
Salvador	15

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

BOX 3.1 The Potential of Neurodiverse Talent for Digital Government

Digital government offers a special opportunity to incorporate people who traditionally have not been considered when talking about diversity: neurodiverse talent.

Neurodiversity is a concept that establishes that neurological differences must be recognized and respected in the same way as any other human diversity. Among these differences are autism, dyslexia, hyperactivity and attention deficit disorder, dyspraxia, Tourette's syndrome, and narcolepsy. The concept recognizes these differences to be the result of normal genetic variations and therefore establishes that neurodiverse people do not need to be cured; rather, they require special accommodation. Many of those who live with autism or dyslexia have a special ability to recognize patterns, analytical skills, extremely good memories, observational skills, high concentration capacity, or superior logical-mathematical abilities. In many cases, people with autism can easily spot errors and have a critical eye for detail (Baron-Cohen et al., 2009). These talents can often be advantageous in performing data analysis, developing software, or working on cybersecurity, an important component of digital transformation.

In spite of the competitive advantages of neurodiverse people for certain types of tasks, the unemployment rate among this population segment is often high (80 percent in the United States). This gap is due, in part, to the fact that recruitment processes normally give a lot of weight to candidates with communication skills, which tend to be less pronounced among neurodiverse people.

TO CORRECT THIS IMBALANCE, SOME PRIVATE FIRMS HAVE STARTED DEVELOPING SPECIAL PROGRAMS TO RECRUIT NEURODIVERSE TALENT.
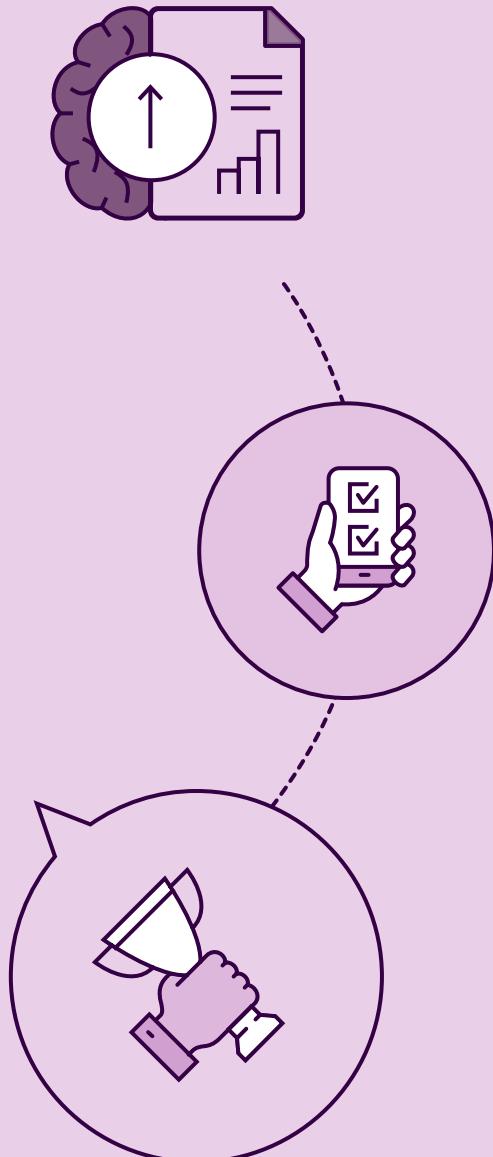
The case of Microsoft is noteworthy. Its recruitment program for people on the autism spectrum, created in 2015, introduces various adjustments to the selection process aiming to elevate the importance of the specific work that the candidate will perform and minimize potentially stressful situations. The process begins with an online evaluation and continues with a week of interviews at the Microsoft facilities to learn more about the work abilities and technical skills that would fit in their potential role. They also practice simulated interviews, and they are invited to participate in informal discussions and provided with coaching. The week concludes with a meeting between the human resources staff and the candidates. When an individual joins the company, a personal coach accompanies them to facilitate and support onboarding and the transition to new tasks (Microsoft Alumni, 2015).

TANGIBLE BENEFITS OF NEURODIVERSE TALENT IN ORGANIZATIONS

Companies that have adopted programs to welcome neurodiverse talent must make modifications in their workplaces and in their culture to accommodate such talent and exploit their potential. In some cases the physical space has to be altered by creating areas that reduce sensory stimulation, or by providing headphones; in others, a support network through mentors or specialized staff is provided. Changes may also have to be made in the way that the teams are led, with a more personalized approach that focuses on each member.

Investment in neurodiverse talent often bears fruit. Hewlett Packard's neurodiverse talent program provided employment for more than 30 participants in software testing roles at Australia's Department of Human Services. The preliminary results reveal that the teams with neurodiverse talent are 30 percent more productive than others (Austin and Pisano, 2017). At SAP, a program participant found a technical solution for a problem that helped the company save nearly US$40 million. Beyond the monetary benefits, company managers recognize that they have seen increases in productivity, product quality, and employee motivation.

MANAGERS ALSO HAVE ACKNOWLEDGED **BENEFITS FOR THEIR OWN MANAGEMENT SKILLS ARISING** FROM HAVING TO THINK ABOUT THE NEEDS OF EACH INDIVIDUAL EMPLOYEE.

Neurodiverse talent can contribute to digital transformation in the public sector because of the increasing emphasis on roles that require analytical skills, software code creation, big data generation and analysis, process testing, and others. Therefore, it will be necessary to rethink how selection processes are conducted and to include people who possess special technical skills and abilitie.

BARRIERS THAT EXPLAIN THE DIGITAL TALENT GAP IN LATIN AMERICAN AND CARIBBEAN GOVERNMENTS

THERE ARE THREE MAIN FACTORS THAT ACCOUNT FOR THE DIGITAL TALENT GAP IN LAC GOVERNMENTS: (I) THE SCARCITY OF QUALIFIED DIGITAL PROFESSIONALS IN THE LABOR MARKET; (II) INSUFFICIENT BUDGET; AND (III) CHALLENGES IN CIVIL SERVICE MANAGEMENT (RECRUITMENT, PROFESSIONAL DEVELOPMENT, AND SALARIES, AMONG OTHERS).

1

SCARCITY OF QUALIFIED DIGITAL PROFESSIONALS IN THE LABOR MARKET

Latin American and Caribbean countries suffer from a scarcity of digital talent. According to a report on the availability of skills in 60 countries at the global level published in 2020, the 11 participating LAC countries were ranked between 41st and 58th in technological skills (Coursera, 2020). In data science skills, Argentina ranked highest, in 22nd place, with the other countries below 30th place. The scant availability of digital talent is reflected in the fact that positions often go unfilled. A study of Argentina, Brazil, Chile, Colombia, and Mexico revealed that the fields that were most lacking among firms were science, engineering, technology, and mathematics, with 38 percent of firms reporting an unmet need in these areas (Basco et al., 2020).

The lack of cybersecurity professionals is particularly notable. A 2019 study estimated that there was a shortage of 600,000 specialists in LAC, encompassing both the public and the private sectors. This trend is repeated on a global level. It is estimated that globally there is a gap of 4 million cybsersecurity positions that remain vacant due to the lack of talent (ICS, 2019).

The deficit is similar in many other LAC countries. A study of the proportion of the adult population with a specific digital skill (the ability to create a computer program using a specialized programming language), revealed that, of the 75 countries analyzed, Chile is the best positioned LAC country. It ranked 8th (below Norway and above Sweden), followed by Mexico (21st), Colombia (30th), Costa Rica (50th), Peru (54th),

and Brazil (56th) (ITU, 2019). Excluded from this analysis are all the less-developed countries of the region, where the existence of these skills is likely to be even lower.

The shortage of professionals with digital skills in LAC is partly the result of the incipient supply of training in this area. An example is the training of computing experts. No Latin American country included in this study produces computer science graduates in an equivalent proportion to other leading countries in the digital field, as Figure 3.7 shows (National Science Board, 2018). Similarly, in Argentina, Brazil, Chile, Colombia, and Mexico, the quality of the educational system was identified as the second most significant barrier to adequately tackling future staffing demands (high taxes on employment was the main reason) (Basco et al., 2020). Since these countries have the most robust education systems in the region, it is likely that the less-developed countries suffer from even greater deficits.

FIGURE 3.7 Computer Science Graduates (per million inhabitants), Average 2014–2018

0.48
CHILE

6.64
ISRAEL

0.52
MEXICO
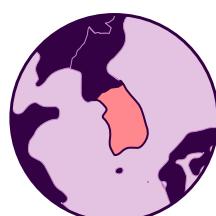
11.08
SPAIN

1.07
BRAZIL

13.88
UNITED KINGDOM

3.04
SOUTH KOREA

The scarcity of digital professionals has repercussions for LAC governments' ability to hire digital talent: it makes the competition fiercer, widens the salary gaps between the public and the private sector, and makes it harder to find highly qualified professionals with a public service vocation that allows them to balance their salary expectations with the potential for social impact that public service offers.

Source: Authors' elaboration based on data from the National Science Board (2018).

2

INSUFFICIENT BUDGET

Digital talent needs can only be satisfied if there is sufficient talent in the market and sufficient budgetary allocations to hire digital professionals.

HOWEVER, 74 PERCENT OF GOVERNMENT MANAGERS REPORTED THAT A LACK OF BUDGETARY RESOURCES HAMPERED THEIR EFFORTS TO HIRE THE NECESSARY STAFF IN THE PREVIOUS YEAR (Figure 3.8) (IDB-GEALC Survey, 2019).

This problem is not exclusive to the region, as Spain and Estonia reported the same challenge.
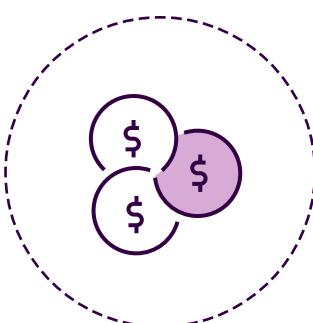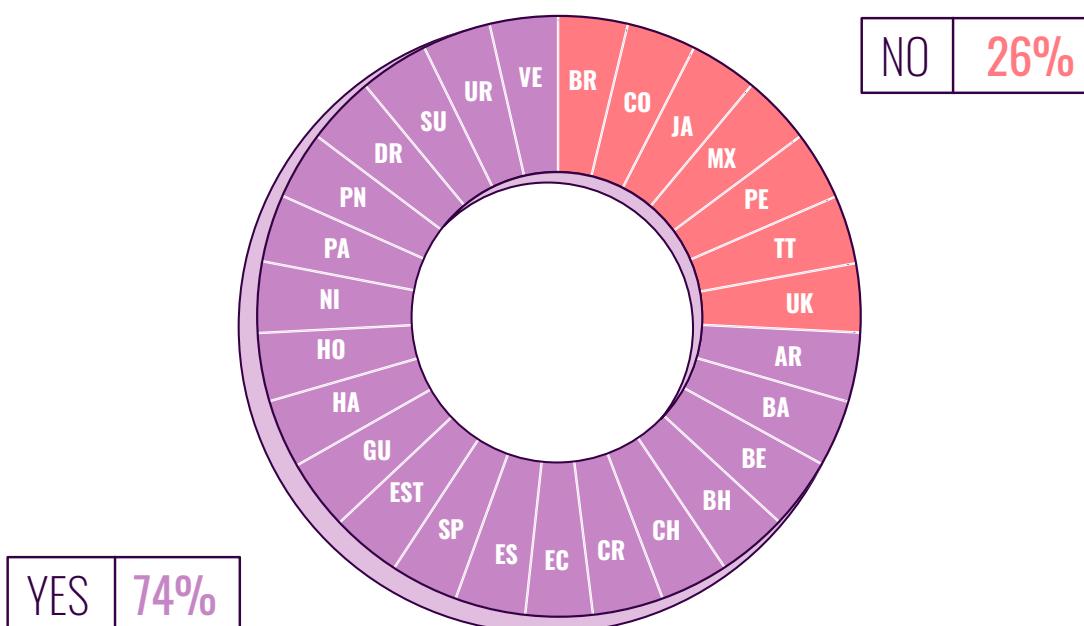
FIGURE 3.8 In the Last Year, Did an Insufficient Budget Stop You from Recruiting Staff?

NO 26%

YES 74%

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Note: SP= Spain, EST= Estonia, UK = United Kingdom.

3
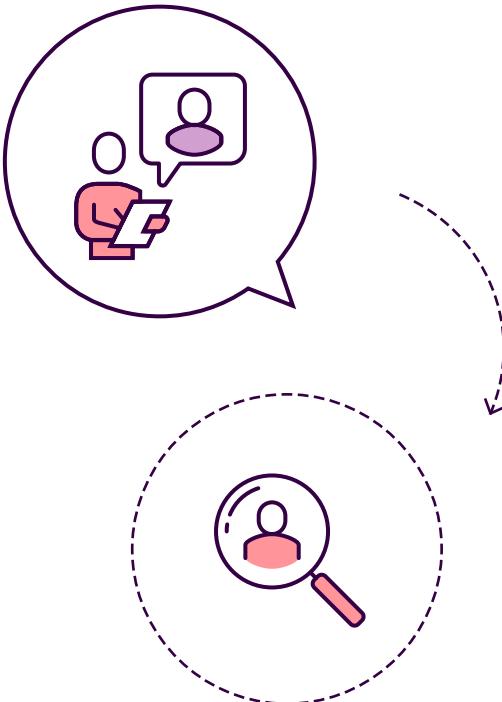
CHALLENGES IN CIVIL SERVICE MANAGEMENT

Even when there is talent available in the market and sufficient budget to hire,

THERE MAY BE DIFFICULTIES WITH PERSONNEL MANAGEMENT RULES AND PROCEDURES THAT COMPLICATE THIS TASK.

Civil service management in LAC in general faces important challenges, which impact the management of digital talent. At the strategic level, these challenges include the administrative role typically performed by the civil service authority and human resource management units in public institutions. At the operational level, there are weaknesses in most human resource management subsystems, ranging from planning to work organization (types of job profiles and staff composition) and employment management (recruitment, selection, etc.), compensation management, performance management, and training and professional development.

According to a methodology developed by the IDB, reflecting the Ibero-American Charter for the Public Service (ICPS)—a document containing best practices in government human resources management to which all the region's countries subscribed in 2003—the central administration of national government in LAC countries scored an average of 38 points out of 100 in the most recent evaluation of the Civil Service Development Index, with scores ranging from a minimum of 12 to a maximum of 67 points.[22] This chapter analyzes how these weaknesses affect digital talent management.
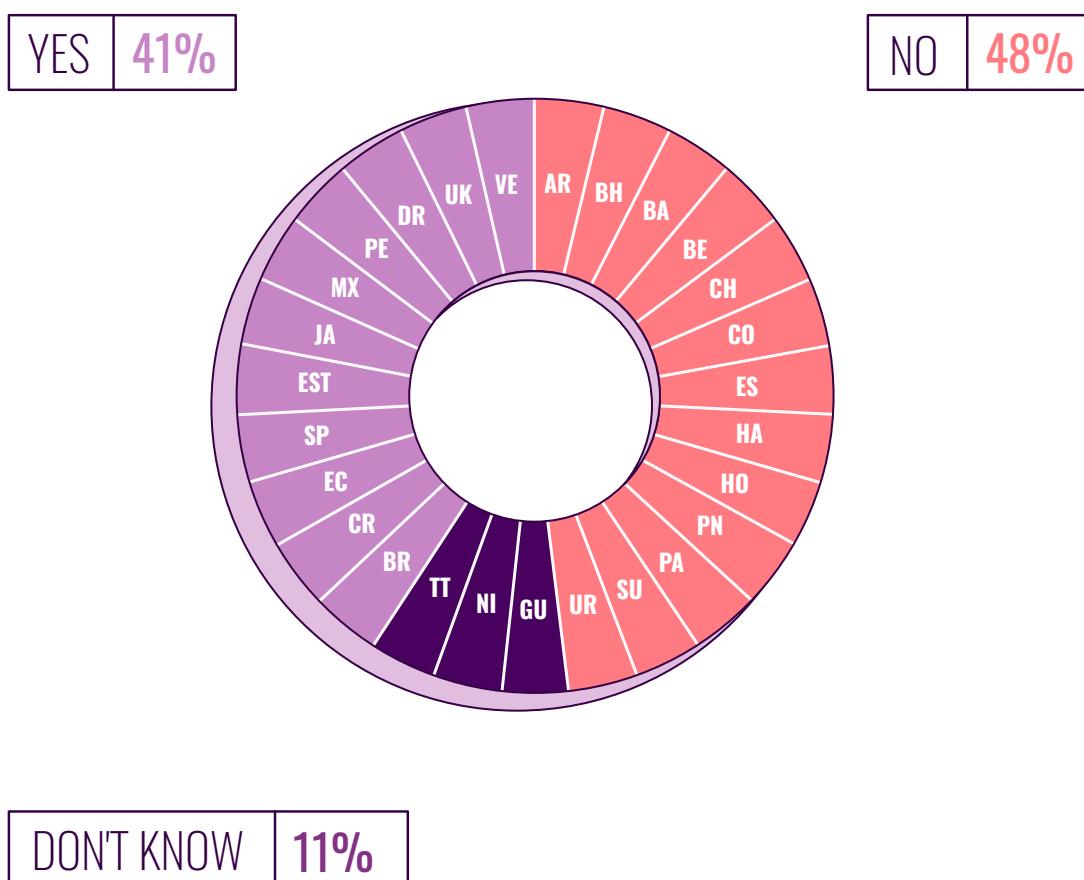
With respect to the **planning** subsystem, the region often designs future workforce plans that do not include the expected demand for digital talent. Nor are there many comprehensive personnel databases, which could provide a quantitative and qualitative description of the existing human resources to better inform the planning process for new talent recruitment. This absence of planning often leads to automatic replacement of personnel in the same position when someone retires, despite the fact that some of these job profiles might be obsolete (Cortázar, Lasource, and Sanginés, 2014). Due to budgetary limitations, this practice of replacement by inertia can prevent the creation of new jobs for positions that currently do not exist but are needed for digital transformation.

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22.   See: https://mydata.iadb.org/Reform-Modernization-of-the-State/Civil-Service-Development-Index/ddw5-db4y.

With respect to **work organization**, few countries have up-to-date civil service job profiles, and this is a more salient problem in the case of digital government profiles. In 2019, only 41 percent of countries had a digital competency framework for civil servants (Figure 3.9). This impacts civil servant recruitment, as the competencies and skills needed for the job are not clearly defined and thus are not used to inform the recruitment process. It also negatively affects the subsystems of performance management (the performance of digital talent cannot be evaluated without an adequate description of what is expected from the person occupying the position), development management (the professional development pathway in the civil service cannot be defined for a digital professional if there is no job description for different hierarchical levels), and compensations management (the job classification and remuneration systems fail to reflect the importance of each position and its relative salary in accordance with factors such as the necessary skills or the level of responsibility, which may lead to digital talent not being adequately remunerated).

FIGURE 3.9 Is There a Digital Competency Framework for Civil Servants?

| YES | 41% |

| NO | 48% |

| DON'T KNOW | 11% |

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Note: In many cases, the lack of a competency framework is accompanied by a lack of digital job profiles. This shortcoming may mean that professionals who carry out digital transformation tasks are classified in standard roles that may not be consistent with their functions (economist, lawyer, etc.). This is problematic for two reasons: without a clear definition of the digital roles it is difficult to identify and attract the necessary talent from outside to satisfy these needs, and the lack of clarity in the functions makes management of an organization's human resources cycle more difficult (recruitment, promotion, and performance evaluation).
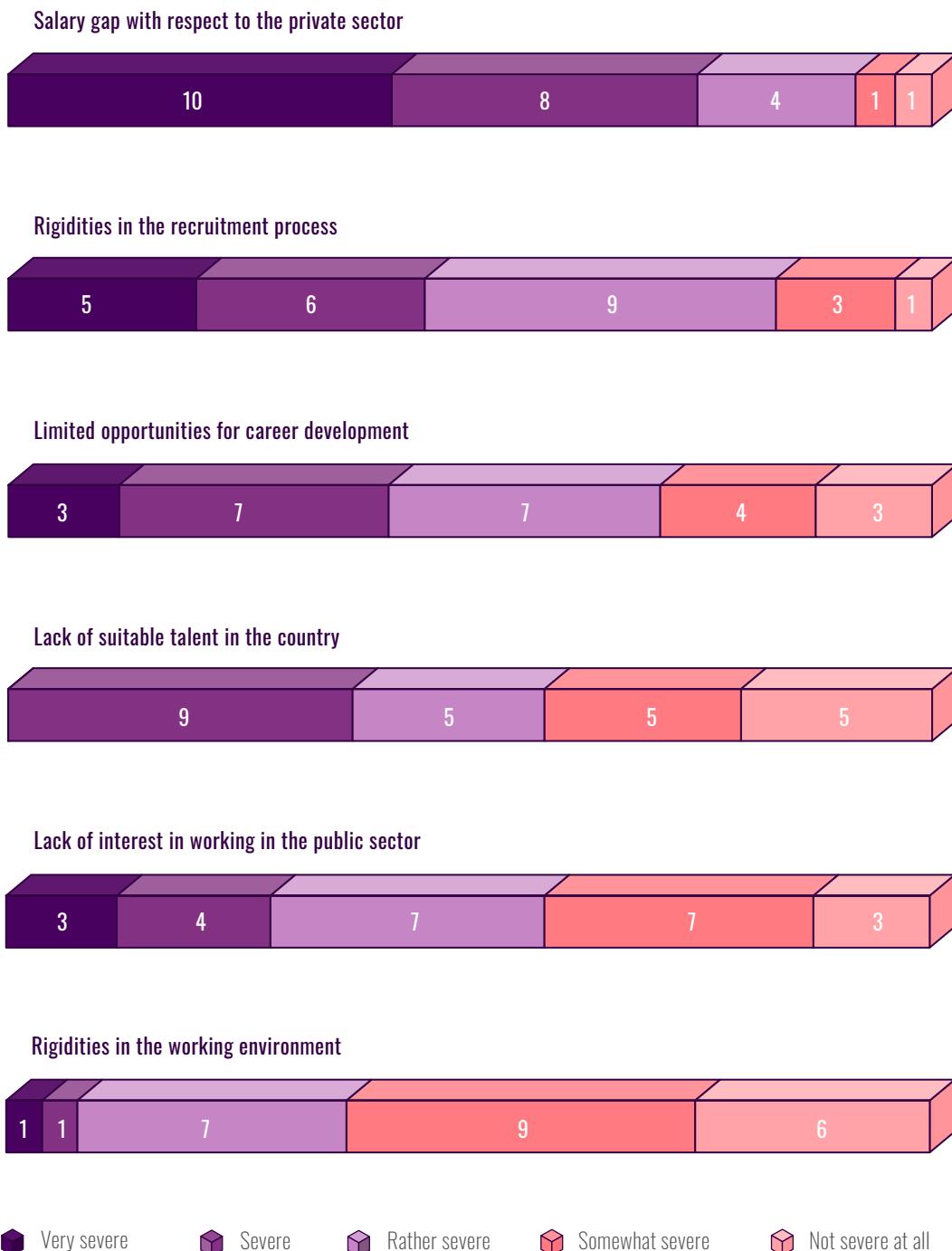
GENERALLY, THESE CLASSIFICATION SYSTEMS (I.E., THE LEVELS OR HIERARCHY IN WHICH THE CIVIL SERVICE IS ORGANIZED) WERE CREATED MANY DECADES AGO AND HAVE NOT BEEN UPDATED.

This makes it difficult, for example, for a professional who is highly qualified in digital topics to advance professionally as a technical specialist. It also creates incentives to take up a managerial position, which may not add as much value, because this is the only path to increasing salaries and hierarchical position. For example, 70 percent of digital government authorities saw the lack of opportunity for professional development as a factor that was moderately severe, severe, or very severe when it came to attracting digital talent (IDB-GEALC, 2019).

In **employment management,** although the majority of the region's countries have made strides in the use of widely publicized, open, and merit-based competitions, talent recruitment (and especially digital talent) continues to be a challenge. On the one hand, many people with ideal profiles often do not see the state as a good employment option: 60 percent of the managers of digital government authorities considered that this problem was moderately severe, severe, or very severe (IDB-GEALC, 2019). On the other hand, digital government authority managers claim that the lack of opportunity for professional development was the third most important barrier to attracting talent (see Figure 3.10). A study of science, engineering, and technology professionals in the U.S. federal government (Madrikis, 2018) corroborates this point by finding that, even in the absence of salary gaps that exist between the public and the private sectors, the government struggles to retain professionals due to suboptimal internal management practices and to the limited options for professional advancement.

FIGURE 3.10 Principal Barriers to Attracting Talent to the Digital Team
(Responses by category in a total of 25 countries, LAC countries only)

Salary gap with respect to the private sector

| 10 | 8 | 4 | 1 | 1 |

Rigidities in the recruitment process

| 5 | 6 | 9 | 3 | 1 |

Limited opportunities for career development

| 3 | 7 | 7 | 4 | 3 |

Lack of suitable talent in the country

| 9 | 5 | 5 | 5 |

Lack of interest in working in the public sector

| 3 | 4 | 7 | 7 | 3 |

Rigidities in the working environment

| 1 | 1 | 7 | 9 | 6 |

● Very severe　　● Severe　　● Rather severe　　● Somewhat severe　　● Not severe at all

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Note: The complete response option for "rigidities in the hiring process" included "for example, the impossibility of hiring staff who are qualified in digital subjects, but who lack formal certificates," and "rigidities in the working environment" included "for example, rules on start times, dress codes, etc."

The shortcomings of the rules and the recruitment processes are the second most important barrier to attracting talent.
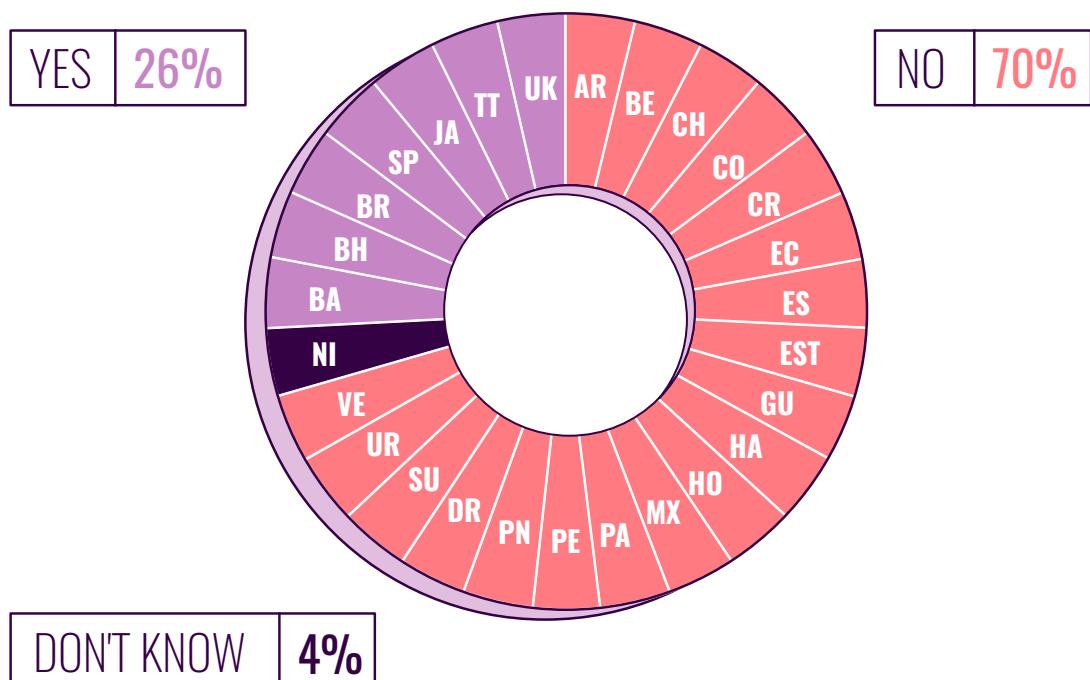
IN A SURVEY OF PUBLIC MANAGERS, 41 PERCENT REPORTED THAT THEY HAD BEEN UNABLE TO ADDRESS THE SKILL GAPS IN THEIR TEAMS BECAUSE THE FORMAL HUMAN RESOURCE PROCESSES DID NOT ALLOW THEM TO RECRUIT THE SKILLS THAT THEY NEEDED.

(Job descriptions, the mechanism for evaluating candidates, and interview techniques, among others) (IDB-COPLAC, 2019).

Recruitment processes in LAC governments are often long and drawn out: in the majority of the LAC countries analyzed, filling one position requires on average more than six months and, in some cases, more than a year (IDB-OECD, 2019). Efficiency in the hiring process is especially relevant for digital professionals since the technological sector has the highest staff turnover rate worldwide (Booz, 2018).

With respect to compensation management, the lack of pay competitiveness was reported as the main barrier to attracting talent (see Figure 3.10) (IDB-GEALC, 2019). In theory, the explanation may be, in part, that the civil service job classification and remuneration system is obsolete or that in 70 percent of countries there is no specific pay scale for digital roles, which would narrow the salary gap with the private sector (see Figure 3.11). However, in practice, even the few countries that do have a pay scale for digital roles report these difficulties.[23]

FIGURE 3.11 Is There a Specific Salary Scale for Digital Roles in Government?

YES	26%
NO	70%
DON'T KNOW	4%

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

23. The Bahamas, Barbados, and Jamaica all reported that the salary gap with respect to the private sector was "very severe," while Brazil and Trinidad and Tobago reported it as "severe."

The shortcomings observed in salary management for digital professionals can be understood as an extension of the weaknesses in pay management for the civil service in the region in general.

ACCORDING TO 52 PERCENT OF PUBLIC MANAGERS (IDB-COPLAC, 2019), THE MOST SIGNIFICANT FACTOR THAT PREVENTS THE SKILLS GAP IN THEIR TEAMS FROM NARROWING IS THE DIFFICULTY OF OFFERING COMPETITIVE PAY.

Although public and private sector salaries are competitive at the lowest hierarchical levels, at the managerial level there is low competitiveness. This leads to limited capacity to attract and retain highly skilled professionals (Cortázar, Lasource, and Sanginés, 2014). This is consistent with reports about developing countries in general, in which there is usually a salary gap for professional and managerial positions compared to the private sector (Gindling et al., 2019).[24] This lack of pay competitiveness, in turn, is related to the low strategic alignment of civil service salaries, due to the insufficient strategic vision of the pay system and the scant availability of technical tools to manage salaries. This is difficult to reform given the problems of political economy and fiscal restriction.[25]

Performance management, or the way in which the performance of civil servants is planned and evaluated, is a further significant weakness of civil service management in the region (and even among OECD governments). In the public sector, institutions do not always encourage a culture of merit and excellence that rewards those who do

their work well and identifies those that do not. One example is that 65 percent of digital government managers report that they are unable to increase the salary of staff based on their performance (IDB-GEALC, 2019), which represents a challenge when retaining the best digital talent. In general, fewer than 25 percent of LAC countries and 28 percent of OECD countries used quotas or ceilings regarding the number of civil servants that could receive the highest rating in their performance appraisal. Only 15 percent of OECD countries reported frequently using dismissals for insufficient performance despite the fact that it is permitted in 97 percent of them. In LAC, this practice is possible in all cases analyzed, but none reported frequent use of this remedy (IDB-OECD, 2019).

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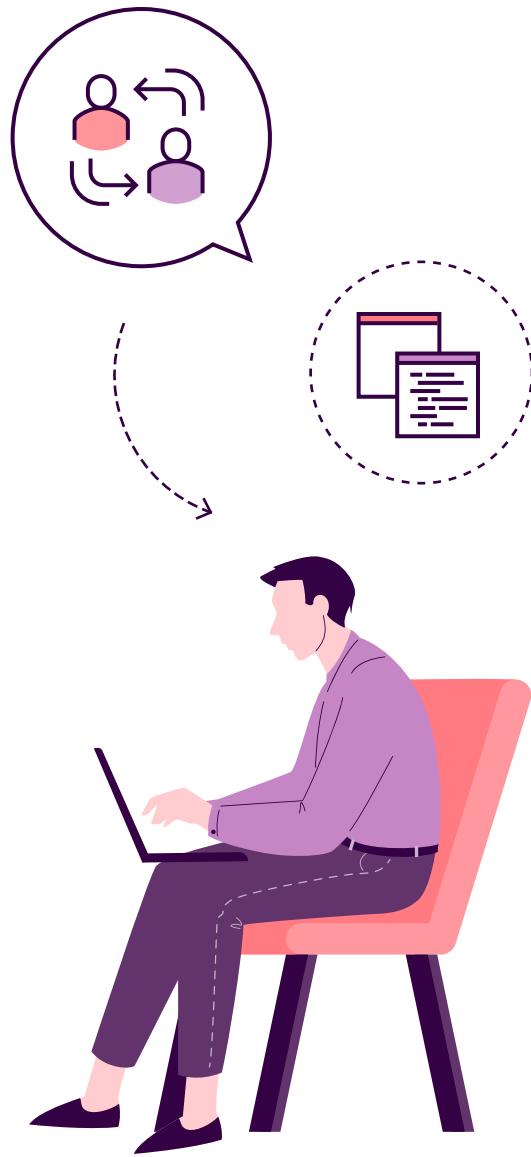
24. This study shows that, for developing countries at the global level, payment to technicians, professionals, and senior managers in the public sector is below that of the private sector, after controlling for individual characteristics and differences between occupations.

25. The draft legislation in Brazil, Costa Rica, and Paraguay, already underway while this book was being prepared, alongside a design reform in Uruguay, is addressing this issue. In the cases of Costa Rica and Uruguay, the new compensation rules apply only to future civil servants, while in Paraguay, they apply to current employees.

With regard to the **development management subsystem** (referring to space to grow professionally and to training), there are also important challenges. In the area of digital talent, this is seen in the high turnover rate, cited as a problem by 86 percent of digital government managers (IDB-GEALC, 2019).[26] A high turnover rate, in principle, is not bad. In fact, some countries, such as the United States, employ fixed-term, non-renewable contracts as a central plank of their talent management strategy. However, unplanned high turnover motivated by the lack of professional growth is clearly a problem. As long as it is difficult to recruit the right digital talent, for all the reasons described above, it is not viable to depend on constant recruitment to satisfy talent demand.

FOR DIGITAL PROFESSIONALS WHO REMAIN IN THEIR POSITIONS, THE CHALLENGE IS TO REMAIN CURRENT: ACCORDING TO 76 PERCENT OF THE REGION'S DIGITAL GOVERNMENT MANAGERS, IT IS NOT EASY FOR CIVIL SERVANTS TO UPDATE THEIR TECHNICAL KNOWLEDGE AND SKILLS WHILE REMAINING IN THE PUBLIC SECTOR.[27]

In spite of this recognized challenge, governments seem to take few measures to address it: only in 52 percent of cases is there a training plan for members of the digital authority (Figure 3.12), and only 24 percent of the teams have a training plan for each civil servant (IDB-GEALC 2019).[28] The lack of attention to training is, in many contexts, symptomatic of a problem that afflicts the civil service as a whole.
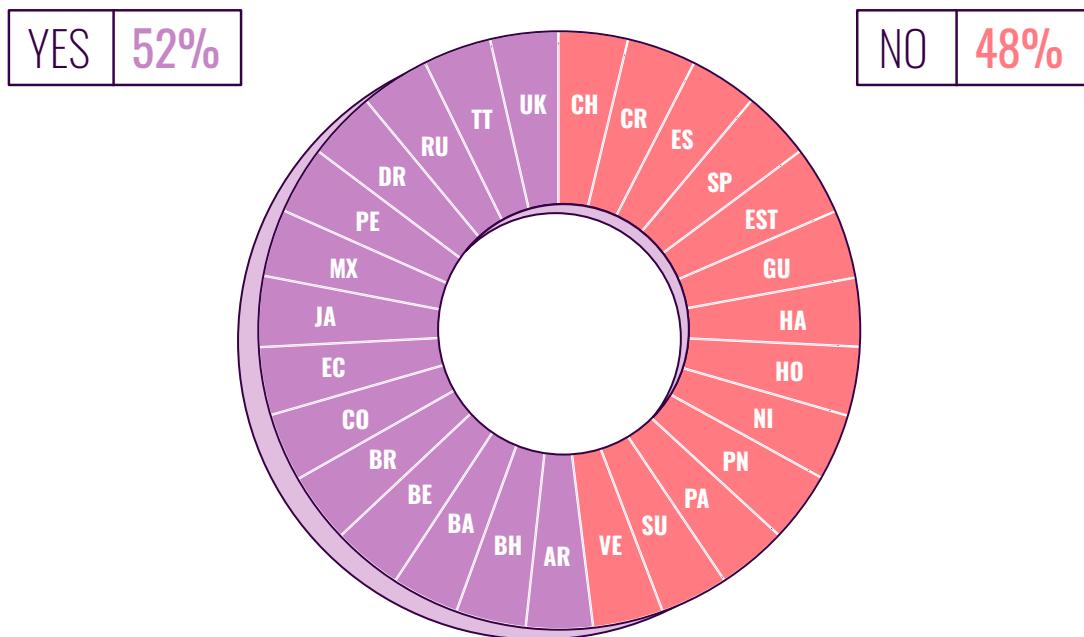
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26. Eight percent report that high turnover is a "severe" problem, 32 percent report that it is a "serious" problem, 44 percent claim it is a "moderate" problem, 12 percent say it is a "minor" problem, while 4 percent report that "it is not a problem" at all.

27. Digital government managers in the three countries of the region report that it is easy for civil servants to update their skills.

28. The existence of a plan is no guarantee of the existence, and much less the effectiveness, of training and should therefore be interpreted as a declaration of intent.

FIGURE 3.12 Is There a Training Plan for Civil Servants Belonging to the Digital Team?

YES 52%

NO 48%

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Figure 3.13 classifies the digital government authorities of LAC by the turnover rates of their workers: some countries, particularly Caribbean countries, have an extremely low turnover rate (using the percentage of staff that left following the last change of government as an analyzed variable) and a typical tenure of 10 years; others, notably El Salvador, Guatemala, and Suriname, have high turnover rates following changes of government and typically short stays, while the majority hover around the average.

It is notable that in the three leading countries in digital government analyzed in this study (Spain, Estonia, and Uruguay), there was very little staff turnover following the last change of government, with an average tenure of between three and six years. At least in these three cases, this seems to support fluid recruitment and selection mechanisms with relatively short tenures or with temporary excursions into the private sector or international organizations, rather than long careers in digital areas always under the same employer.
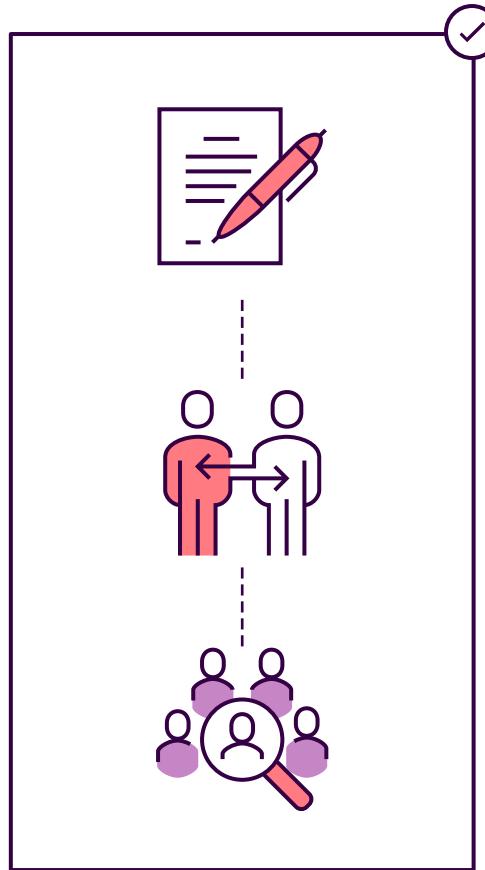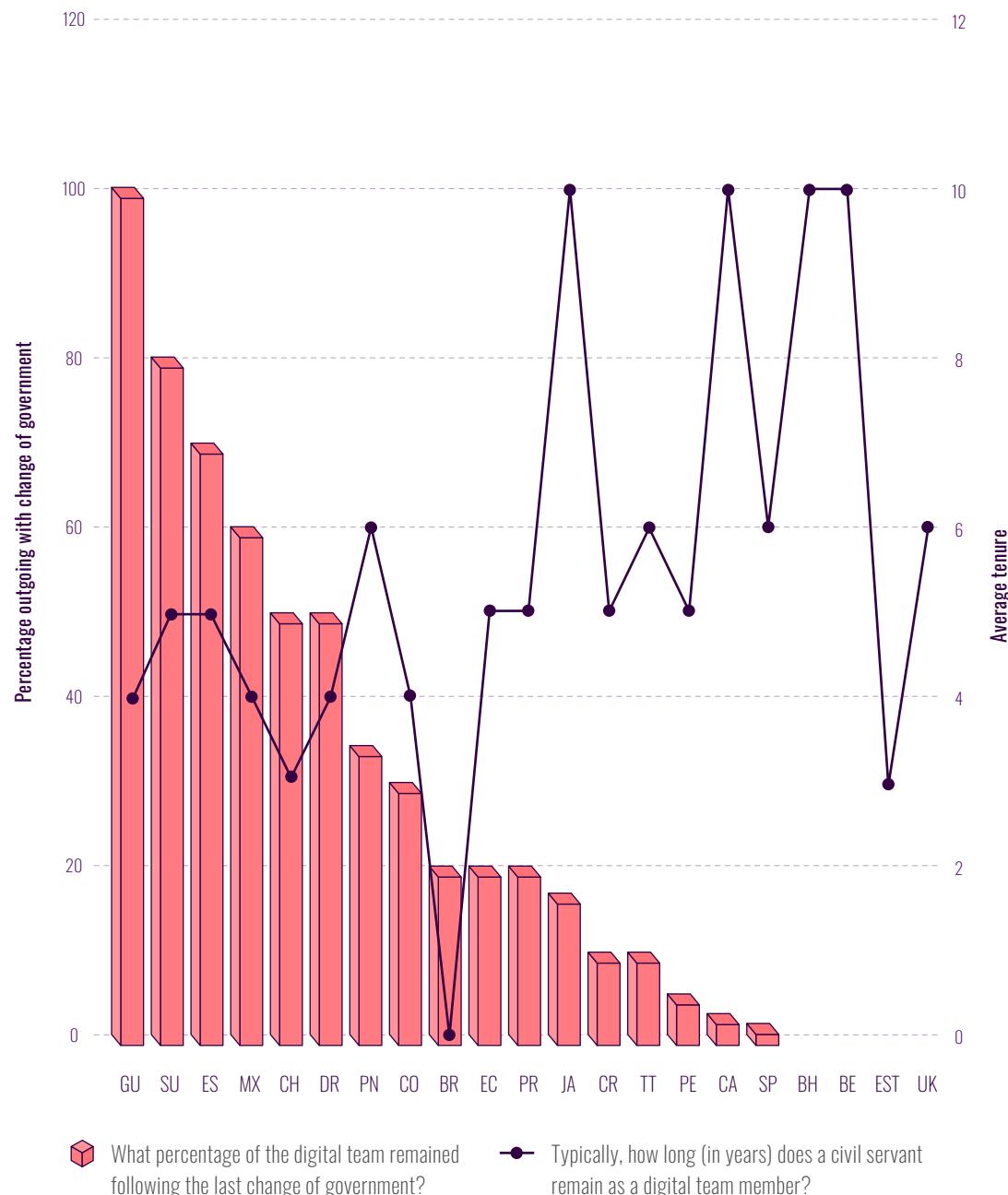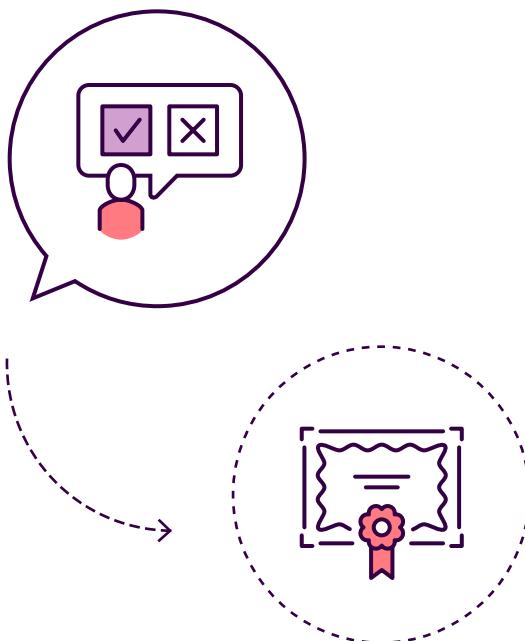
FIGURE 3.13 Typical Permanence of Civil Servants at the Digital Government Authority and Turnover Rates Following Changes of Government

Legend:
- What percentage of the digital team remained following the last change of government?
- Typically, how long (in years) does a civil servant remain as a digital team member?

Source: Authors' elaboration based on the IDB-GEALC Survey (2019).

Again, the difficulties of managing digital talent would seem to be symptomatic of challenges experienced throughout the entire civil service. Performance management, in terms of the ICPS methodology, receives the lowest rating among all of the subsystems, with just 28 points out of 100. Promotions are not often based on merit, and there does not appear to be a reasonable career plan for any civil servant working for the state. Chile's National Survey of Civil Servants reinforces this view: only 41 percent of Chilean civil servants believe that they have good opportunities for professional development in their organization and 43 percent in the government (Schuster et al., 2019).
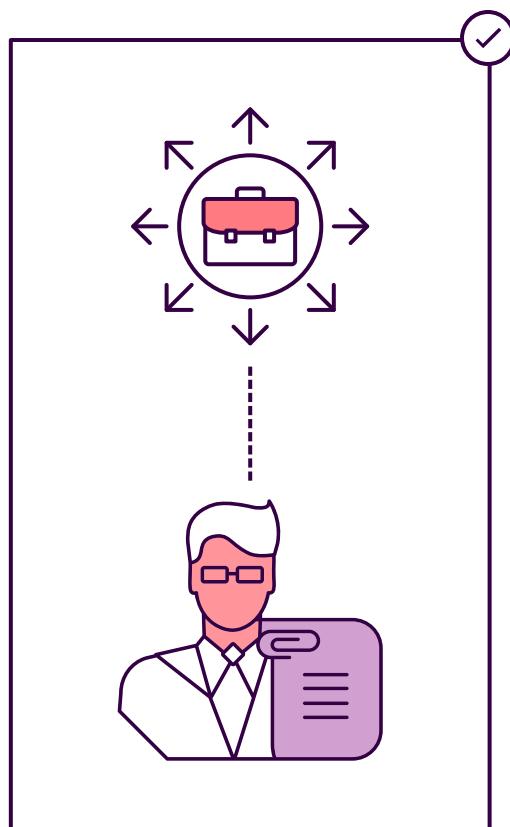
given the disadvantages of outsourcing already mentioned and the unavoidable need for at least a minimum number of qualified civil servants assigned permanently to the digital government authority, solutions must be found for recruiting digital professionals as civil servants.

THE LACK OF PATHWAYS FOR PROFESSIONAL GROWTH IS A BARRIER TO THE CAPTURE OF SPECIALIZED DIGITAL TALENT INSOFAR AS A STABLE AND FRUITFUL CAREER COULD BE A WAY OF COMPENSATING FOR THE LACK OF SALARY COMPETITIVENESS COMPARED TO THE PRIVATE SECTOR.

Given this panorama of salary gaps, high transaction costs in the recruitment process, and the difficulties in professional career management, it is understandable that many countries opt to access digital talent through external contract schemes. Some recruit for public sector personnel through outside foundations; other positions are commissioned through public firms (from telecommunications or even from another sector, such as oil or banking); still, others use other recruitment models with similar purposes. However,

BOX 3.2 A New Role: The Algorithm Auditor
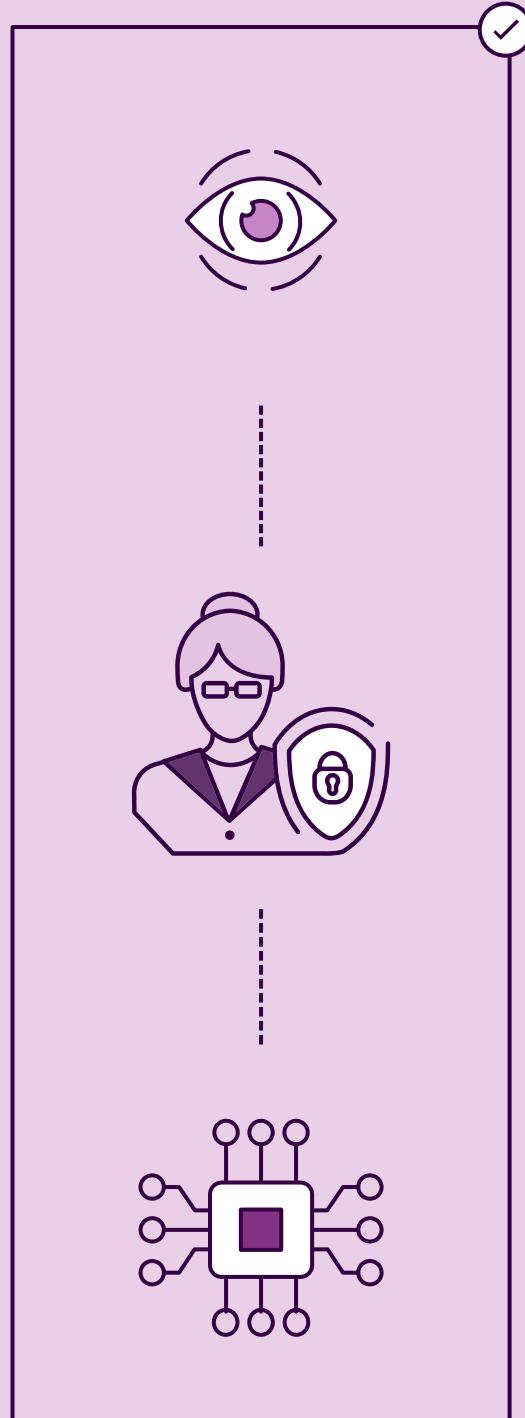
With the arrival of automation and artificial intelligence, new roles are emerging in public administration that require skills that are currently scarce in the public sector. Among the new roles is that of algorithm auditor.

The use of artificial intelligence (AI) to inform recommendations or decisions that were previously made solely by civil servants can increase the efficiency and the effectiveness of public administration, bringing more transparency to budget allocations and reducing the costs of cognitive and non-repetitive processes, among others. However, it also poses challenges that must be understood, estimated, and mitigated. Two risks are worth highlighting: the risk of bias and the risk of privacy violations.

The risk of bias arises when the algorithm incorporates, whether in its own coding or in the data that feeds it, biases that can subsequently affect the recommendations that it makes. For example, when a job search algorithm is loaded with historical information, the hiring recommendation it makes for men or women with similar educational backgrounds, ages, and work experience may be totally different because it is based on assumptions of historical bias.

Depending on the information used, there is also a risk of exposing personal data when designing or "feeding" an algorithm, especially when working with third parties. For example, unless the contract is well designed, a firm may retain the personal information used for a certain process.

How can these risks be mitigated when implementing AI? The European General Data Protection Regulation (GDPR), approved in 2016 and in effect since 2018, requires all public entities that deal with personal data to nominate a data protection delegate (DPD) to oversee compliance with the regulation and to report to the highest institutional authority. Among their responsibilities, DPDs must carry out audits, which can include evaluating compliance with the regulation itself and an evaluation of the impact of the treatment given to personal data. This review does not only cover risks related to data protection, but also with potential biases.
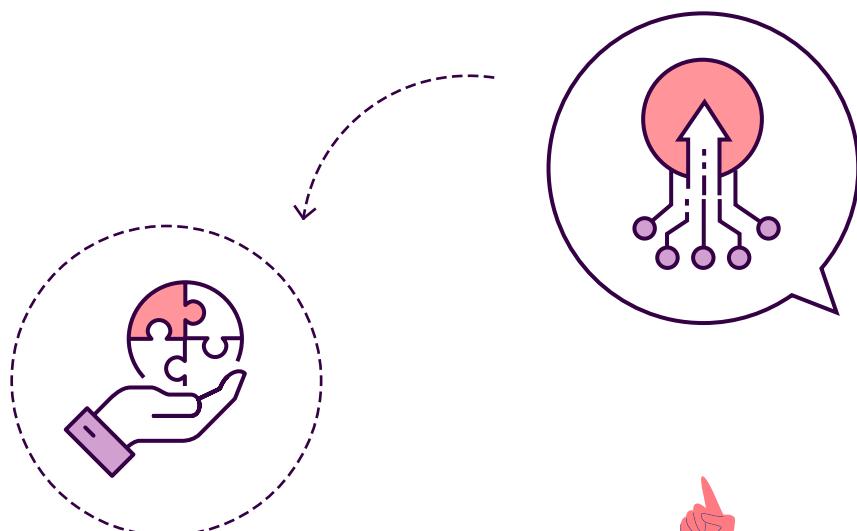
The regulation establishes that "the data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal or similarly significant effects on them," and, in such cases, to have access to "significant information about the logic applied, as well as the importance and the anticipated consequences of processing."

Data protection delegates must have up-to-date knowledge of the legislation on data protection and understand the general operation of the process of data collection, storage, use, and deletion (if necessary) of the data collected by entities where they work. This implies having basic knowledge of technology, data analysis, programming, artificial intelligence, and big data, among others. GDPR also requires private sector firms to appoint a DPD (depending on the size and the type of data analysis carried out).

The use of AI-driven algorithms in the public sector is still incipient in LAC. However, the expectation is that its use will soon increase and with it the need to ensure that treatment is just and secure for all people. Although the legal framework in the region does not yet match up to this reality, the Ibero-American Data Protection Network (Red Iberoamericana de Protección de Datos Personales, or RIPD) approved in 2019 certain personal data protection standards for Ibero-American countries, which are clearly aligned with the GDPR. These include the right of every data subject to "request access to their personal data that are in possession of those responsible, as well as to find out any information related with the general and specific conditions of their treatment" and the obligation of all those responsible to "establish a system of internal and/or external monitoring and oversight, including audits, to track compliance with personal data protection policies."

WHAT SOLUTIONS HAVE THE MOST DIGITALLY ADVANCED COUNTRIES IMPLEMENTED?

SOME DIGITALLY ADVANCED COUNTRIES HAVE DEVELOPED A RANGE OF SOLUTIONS TO TACKLE THE CHALLENGES FACING LAC COUNTRIES, WHICH ARE DISCUSSED BELOW. THEY ARE DIVIDED INTO TWO PARTS: (I) HOW TO ENHANCE THE SUPPLY OF DIGITAL TALENT IN THE LABOR MARKET AND (II) HOW TO TACKLE THE CHALLENGES OF MANAGING THE CIVIL SERVICE IN A PRAGMATIC WAY.

1

HOW CAN THE SUPPLY OF DIGITAL TALENT IN THE LABOR MARKET BE INCREASED?

IT IS IMPOSSIBLE TO CAPTURE DIGITAL TALENT IF THERE ARE NOT SUFFICIENT CANDIDATES IN THE LABOR MARKET. THEREFORE, IT IS ESSENTIAL TO UNDERSTAND HOW TO BOOST THE SUPPLY OF THIS TALENT IN LAC.

FOUR TYPES OF PROGRAMS HAVE BEEN DEVELOPED ON A GLOBAL LEVEL. THESE ARE:

✓ Programs focused on developing digital skills from preschool, primary, and secondary education.
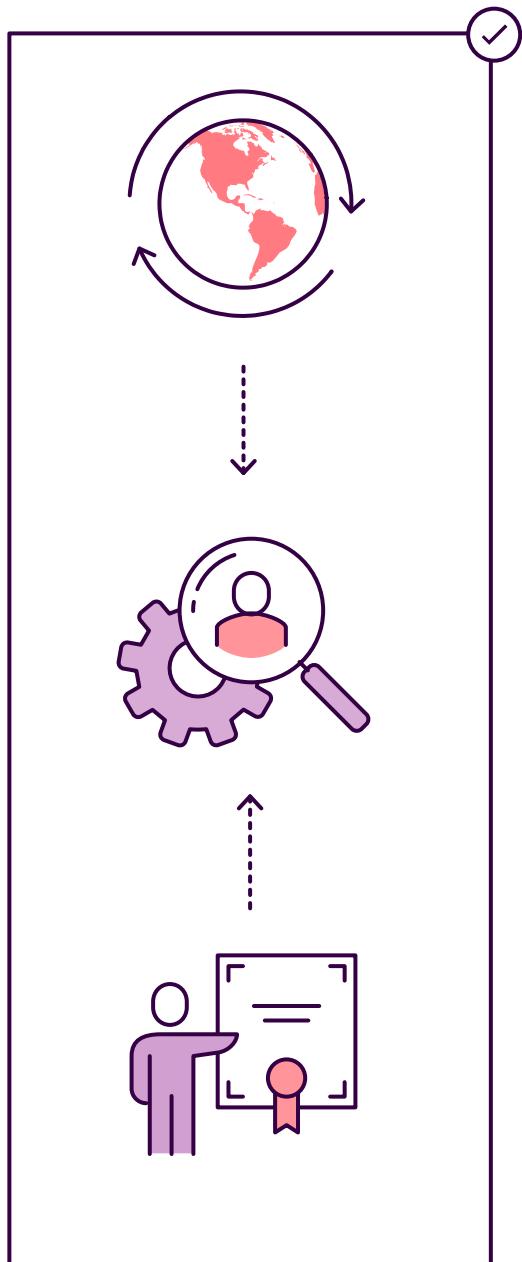
✓ Programs that develop digital careers following higher education.

✓ Skill-building programs for workers in the labor market.

✓ Programs to narrow the digital skills gap for adults.

Starting in the 1990s, Estonia made incorporating digital skills into the country's educational programs a public policy priority. In recent years, this effort has been enshrined both in the Digital Agenda 2020[29] and in the education system strategy.[30] The Information Technology Foundation for Education (HITSA)[31] runs a program in conjunction with the Ministry of Education to develop engineering, information and communication technology (ICT), and design skills in children in preschool and primary school through the ProgeTiger project, which reaches 87 percent of the country's schools and 60 percent of its preschools. Between 2014 and 2019, more than "1.3 million euros" were invested to equip the schools with the tools needed to teach robotics, 3D printing, and modeling and programming, among others, and to train more than 4,100 teachers. This final point is fundamental, since the effectiveness of such programs largely depends on the capacities of its teachers (Cristia et al., 2014; Hinostroza, 2011; Severín, 2011).

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29. Digital Agenda 2020.

30. Lifelong Learning Strategy 2020.

31. HITSA is a foundation created in cooperation with the Estonian Government, universities, and private sector companies to equip students and citizens with digital skills.

VARIOUS COUNTRIES HAVE BUILT PARTNERSHIPs AMONG THE PRIVATE AND PUBLIC SECTORS AND NGOs TO PROVIDE DIGITAL SKILL-BUILDING PROGRAMS FOR ADULT CITIZENS.

The United Kingdom set up the Digital Skills Partnership (DSP), which seeks to improve skills ranging from the essential digital skills that help reduce the digital gap (those needed by workers in a more digitalized economy) to the most advanced ones required to perform specialized functions.[32] In 2018, the United Kingdom also inaugurated the Coding Institute,[33] which seeks to narrow the digital skills gap through university programs, short courses, and professional training. The Institute received 20 million pounds from the government, and IBM, Cisco, BT, Microsoft, and 25 universities and professional organizations such as the UK Information Society have collaborated with a further 20 million pounds. Similarly, in Estonia, the Digital Skills and Jobs Coalition[34] has had two training rounds (2002–2004 and 2009–2011) in which more than 20 percent of the adult population of the country participated (Vaata Maailma, 2020).

In Spain, Digital Spain 2025[35] includes the National Digital Competencies Plan, which seeks to train the country's citizens in digital skills starting from school, providing digital competencies to the workforce, and bridging the gap in ICT specialists by finding synergies between public administration, the universities, and the private sector. In turn, the Uni-Digital Plan seeks to strengthen the ability of the higher education system to foster digital skills.

In higher education, through the IT Academy, Estonia has invested nearly 1 million euros in supporting universities in the development of digital curricula and training university teachers in ICT topics (HITSA, 2020; Nesta, 2019).

32.   See: https://www.gov.uk/guidance/digital-skills-partnership.

33.   See: https://instituteofcoding.org/.

34.   See: http://vaatamaailma.ee/estonian-digital-skills-and-jobs-coalition.
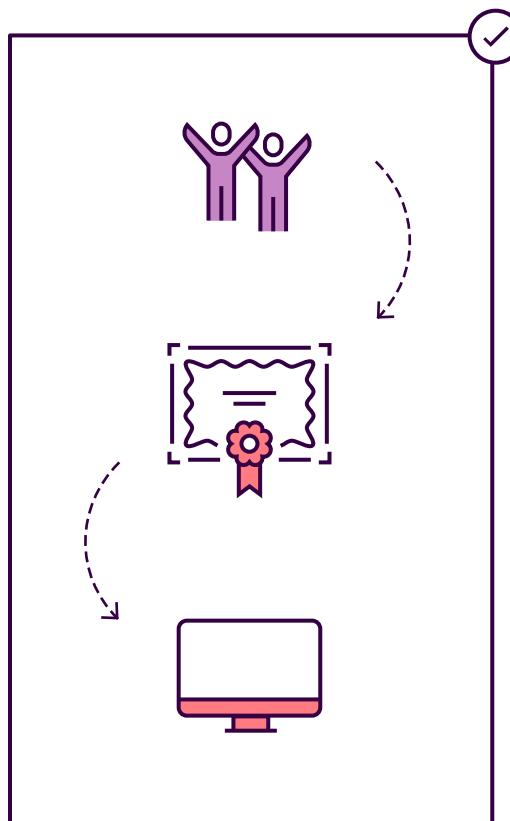
35.   See: https://avancedigital.mineco.gob.es/programas-avance-digital/Documents/EspanaDigital_2025_TransicionDigital.pdf

LAC COUNTRIES HAVE PUSHED FORWARD VARIOUS PUBLIC PROGRAMS TO IMPROVE THE EDUCATIONAL SYSTEM, PROVIDING DIGITAL SKILLS TO THE POPULATION AND IMPROVING THE SUPPLY OF WORKERS WITH DIGITAL SKILLS.[36, 37]

Uruguay established the Ceibal Plan, a government initiative that, since 2007, has sought to narrow the digital gap and to promote social inclusion starting in elementary school and that provides computers to all schoolchildren, although there is no consensus about its efficacy (Beuermann et al., 2015; Carrillo, Onofa and Ponce, 2011; Cristia et al., 2017). In Argentina, the Aprender Conectados plan includes initiatives of digital education, coding, and robotics in the curricula of more than 10 million children and school-age adolescents. In Chile, the National Digital Languages Plan promotes the teaching of coding and computational thinking in the country's schools to drive digital transformation. Moreover, the Digital Talent for Chile program is a public–private initiative, based on New York's Tech Talent Pipeline[38] methodology, whose aim is to train 16,000 workers and entrepreneurs in digital skills (Basco et al., 2020).

In Colombia, the Ministry of ICT's Jóvenes 4.0 project seeks to train more than 100,000 youth in coding, in partnership with the private sector.[39] At the regional level, the Peru-based Laboratoria organization[40] seeks to bridge the digital skills gap for women in LAC with limited resources through an intensive course in coding, web development, and user experience (UX) design that lasts for six months. As of 2020, Laboratoria had trained more than 1,500 women and has a placement rate of 80 percent in more than 200 firms in the technology sector (Mateo, 2019).

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36. The IDB study "América Latina en movimiento: competencias y habilidades en la Cuarta Revolución Industrial" provides an exhaustive list of educational policies and programs aimed at fostering the development of digital skills in Argentina, Brazil, Chile, Colombia, and Mexico.

37. The IDB study "The Future is Now: Transversal Skills in Latin America and Caribbean in the 21st Century" presents a selection of digital skills development projects in the region financed by the IDB.

38. The Tech Talent Pipeline is an initiative launched by the NYC Mayor's office to train individuals in digital skills and thus satisfy the demand from private industry for these kinds of skills. It seeks to support the growth of the city's technology sector, offering New Yorkers good quality jobs and providing New York firms with the quality talent they need.

39. See "MinTIC starts a project to train 100,000 Colombians in programming language" at: https://www.mintic.gov.co/portal/inicio/Sala-de-Prensa/Noticias/146273:MinTIC-inicia-proyecto-para-formar-100-000-colombianos-en-lenguaje-de-programacion.

40. See: https://www.laboratoria.la/.

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HOW CAN THE CHALLENGES IN CIVIL SERVICE MANAGEMENT BE ADDRESSED IN A PRAGMATIC WAY?

If digital transformation depended exclusively on a broad reform of the civil service in LAC, its chances of success would be very slim. Improvements in the civil service often need to be implemented gradually, while the achievement of real progress requires firm political will and must become a state policy (Grindle, 2010). Therefore, the lessons learned from Spain, the United Kingdom, the United States, Uruguay, and other countries around the world can shed light on pragmatic reforms that some LAC countries can begin to plan and implement rapidly.
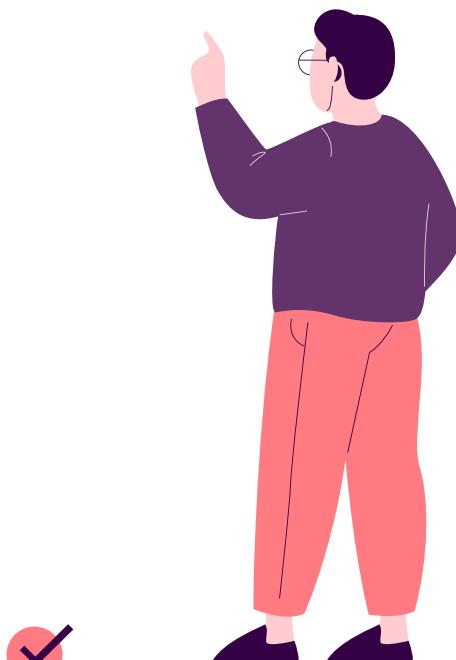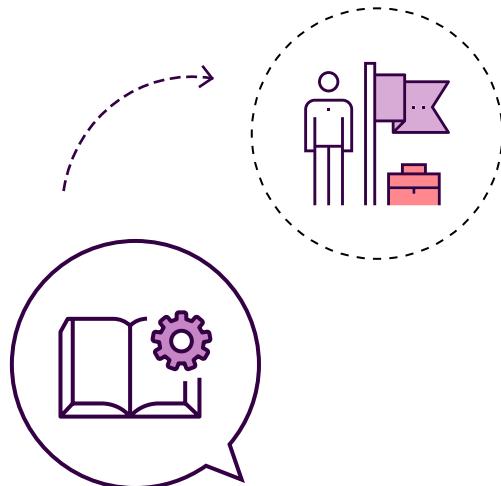
PRACTICES FOR IMPROVING DIGITAL TALENT MANAGEMENT CAN BE GROUPED **INTO FIVE COMPLEMENTARY THEMES:**

Improving the recruitment and selection process.

Boosting intrinsic motivation.

Improving salary competitiveness.

Defining the best engagement strategy for the local context: creating a digital profession or deciding on a "talent as a service" program.
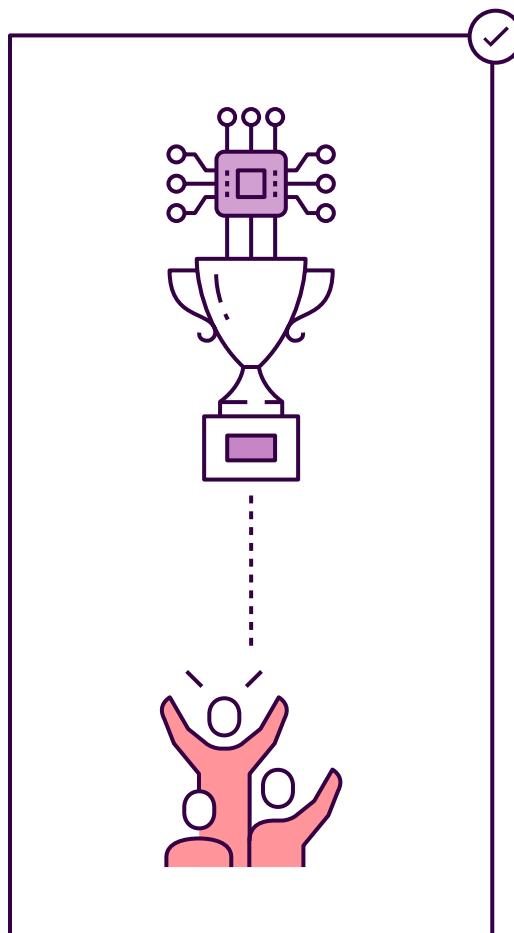
Promoting continuous training, especially in career-based systems.

BOOST INTRINSIC MOTIVATION

The potential impact of working on behalf of the country can be a determining factor that leads some professionals to prefer a job in the public sector to one in the private sector, even though the latter pays better (Ashraf, Bandiera and Kelsey Jack, 2014; Banuri and Keefer, 2013). Some of the literature even highlights the challenges associated with increasing salaries: high financial incentives can lead to candidates with lower pro-social motivation (Deserranno, 2015). Furthermore, the alignment of missions between employers and employees is essential for good performance by civil servants (Besley and Ghatak, 2005). Given the previously discussed difficulties of competing in terms of salaries, these precedents are significant for the digital talent situation in LAC governments.

ALL OF THE DIGITAL GOVERNMENT AUTHORITIES OF THE LEADING COUNTRIES ANALYZED HAVE IMPLEMENTED MEASURES TO INCREASE AND COMMUNICATE THE POTENTIAL IMPACT OF WORKING IN THE PUBLIC SECTOR, WHICH DERIVES FROM THE INSTITUTIONAL MANDATE.

In Spain, the United Kingdom, and Uruguay the digital government authorities are responsible for carrying out the digital policy of the state. This agenda occupies a privileged place among government priorities. In these three countries, and also in the United States, digital government authorities have a mandate to intervene to promote digital transformation throughout the public administration. This role is strengthened through their institutional position and their leadership. In three of the countries studied, the digital government authorities have been installed at the center of government. For example, the United States Digital Service (USDS) is part of the Executive Office of the President. In Uruguay, the Agency for the Development of Electronic Government and the Information Society (Agencia de Gobierno electrónico y Sociedad de la Información y del Conocimiento, or AGESIC) is located within the Presidency and shares the same building. The United Kingdom's Government Digital Service (GDS) forms part of the Cabinet Office.

In Spain, the importance of the General Secretariat for Digital Administration (Secretaría General de Administración Digital, or SGAD) was elevated in status when it was promoted to the level of Under-secretariat of State.
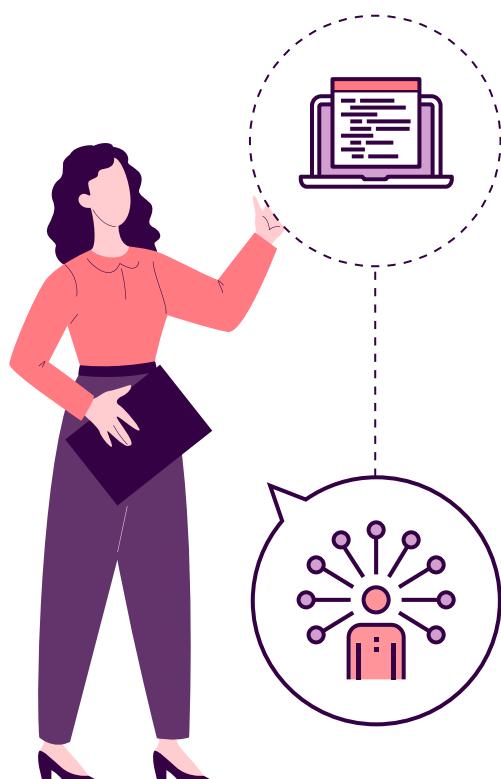
Furthermore, a renowned person in charge can help to transmit the institution's aspirations to the wider technological community. In three of the cases studied (the United Kingdom, the United States, and Uruguay), the first leader came from a recognized private sector firm, whereas in Spain, the secretary of the SGAD is traditionally a person with a long career in the public sector.

One clear example of how to communicate the potential impact of public policies comes from the United States, where the opening sentences that appear on the USDS website indicate its aspirations: "using design and technology to deliver better services to the American people" and "we're solving big problems."[41] It describes how millions of people depend daily on government services and how the work of the USDS can make them function better.

IS IT PREFERABLE TO PURSUE "TALENT AS A SERVICE" SCHEMES OR TO CREATE A DIGITAL PROFESSION?

Determining the best digital talent management model—whether a dynamic short- or medium-term scheme or a professional career over the long term—depends on what the objectives are, not only for the human resources strategy, but also for digital transformation in general. Short- and medium-term models are ideal for attracting professionals willing to leave the private sector for a limited time and help their country through specific projects. However, a scheme designed to be temporary might not be optimal if the vision of digital transformation goes beyond improving specific services and includes the construction of cross-cutting systems (such as interoperability, cybersecurity, and digital signature, among others) and regulatory and institutional arrangements that make these possible. These activities frequently take time and do not have the same potential for immediate and direct impact as reform of a specific service. Therefore, when building a comprehensive digital agenda, it is worth building a group of professionals with long-term trajectories. The countries analyzed present a variety of options in this regard.
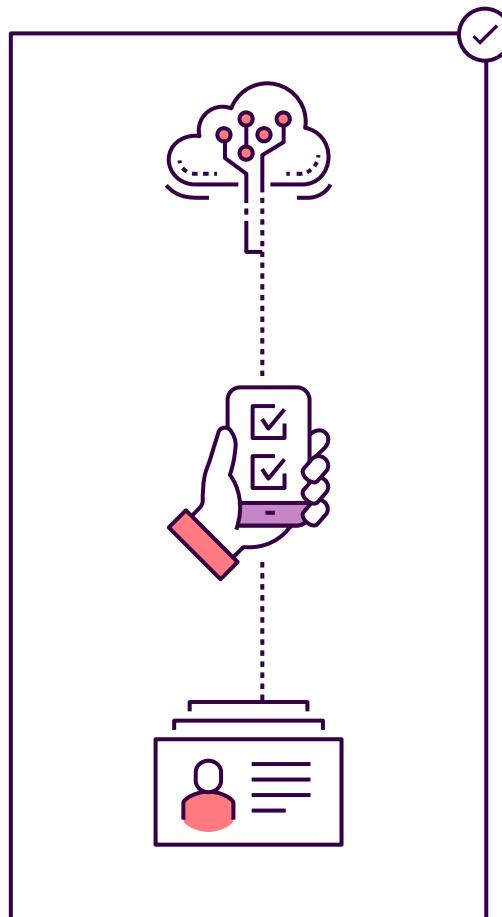
Talent as a service. Several countries have created short-term engagement plans for civil servants to attract digital talent. All employ a formula called "talent as a service" (TaaS), or the appointment of specialists to institutions or projects according to a specific need. The USDS uses a model based on short periods of service that focuses on recruiting digital professionals from the private sector.

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41.   See: https://www.usds.gov/

The contracts last between three months and four years, with an average of 22 months. Since the USDS mandate is focused on improving critical services, rather than on developing cross-cutting tools (such as digital identity and signature or interoperability), most of their specialists are assigned directly to the institutions that offer the prioritized services. Similarly, its central office is small and does not have individual workstations, but has instead various spaces for meetings and working collectively.

In France, the Public Interest Entrepreneurs (Entrepreneurs d'intérêt général) program was created in 2016 as part of the open government team (Etalab). This program recruits highly trained digital professionals (with streamlined procedures and higher salaries) to work with specific challenges associated with the digital transformation of public agencies. They are hired by the department where they will work for around ten months, during which time they are paired with career civil servants who act as mentors. The salary (approximately 4,000 euros per month) is established according to salaries for similar roles in the private sector (in the absence of a general salary policy for digital roles). Toward the end of 2019, three cohorts of workers were recruited with a total of 71 participants, half of whom continue to work in government. Etalab conducted a survey of the factors that motivate digital talent to join the government and found that 69 percent want flexible work schedules, 68 percent want to be able to install software on their own computers, 52 percent want the option of working from home, and 50 percent want uncensored access to the internet (Gawen, 2019).[42]

The State of Minas Gerais (Brazil) and Canada have TaaS programs to address specific temporary needs in various spheres of the public administration (not limited to digital matters). Both prioritize retention to be able to reuse talent in different institutions throughout an entire career. Minas Gerais inaugurated its public entrepreneurs program in

2007 as one of the pillars of a results-based management effort (the other two were a goal-monitoring unit and a strategic management unit). The entrepreneurs were selected through a process designed exclusively for the program and that included evaluation of technical skills. They committed to dedicate themselves exclusively to achieving the government's strategic results, while enjoying the flexibility to move from one institution to another. Their periods of service usually coincided with the term of government, lasting for four years, after which most of them left the administration. In 2013, there were 103 entrepreneurs assigned to 20 institutions. For each appointment to an institution, specific performance goals were agreed with the area manager, which were used to fix the entrepreneur's variable remuneration.

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42. Survey of the factors that attract digital professionals to the public sector: https://www.etalab.gouv.fr/resultats-du-sondage-professionnels-du-numerique-vos-metiers-pour-rejoindre-le-service-public.
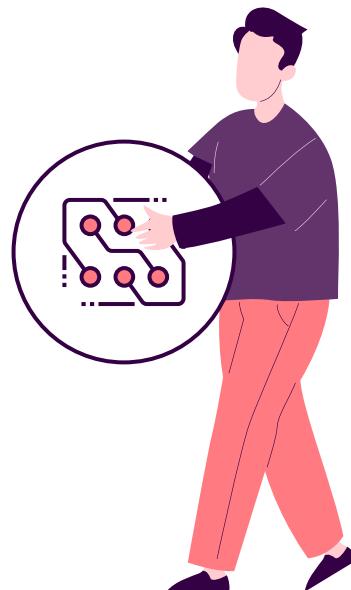
In 2013, 43 percent came from the private sector, 29 percent from the public sector, 22 percent had experience in both, and 6 percent came from academia. Each entrepreneur had a mentor to promote their professional development (Emmendoerfer and Valadares, 2014; Guimaraes, 2016).

ONE KEY ADVANTAGE SHARED BY THE USDS, FRANCE'S PUBLIC INTEREST ENTREPRENEURS, AND THE PUBLIC ENTREPRENEURS OF BRAZIL IS THAT THEY OFFER AN OPPORTUNITY TO MAKE AN IMPACT ON THE PUBLIC AGENDA WITHOUT HAVING TO HAVE A CAREER IN THE CIVIL SERVICE, WITH ALL THE DIFFICULTIES THAT THIS IMPLIES.

In Canada, the government has a Free Agents program, which got underway in 2016. From 2016 to 2019, they recruited more than 60 free agents who worked on more than 125 projects in 35 departments. The free agents passed through a rigorous selection process that emphasized both their hard skills as well as a series of 14 attributes identified as useful for solving problems in the public sector (for example, willingness to take action, resilience, etc.). The program gives them the freedom to work on projects of their choice in any central government institution. A secondary objective of this initiative is to increase talent retention by offering greater freedom and mobility to those with the best performance. A further central aspect is the diverse innovations in talent management: for example, each free agent is assigned to a talent manager who pro-

vides them with administrative support, advice on professional development, guidance on training and mentoring options, and feedback regarding their performance. While assigned to a project, the institution in which the agent works transfers the salary cost plus an administration fee to the entity that manages the program, Natural Resources Canada, which is ultimately responsible for paying the employee's salary (Greenspoon, 2018; Observatory of Public Sector Innovation, 2016; Wasson, 2018).
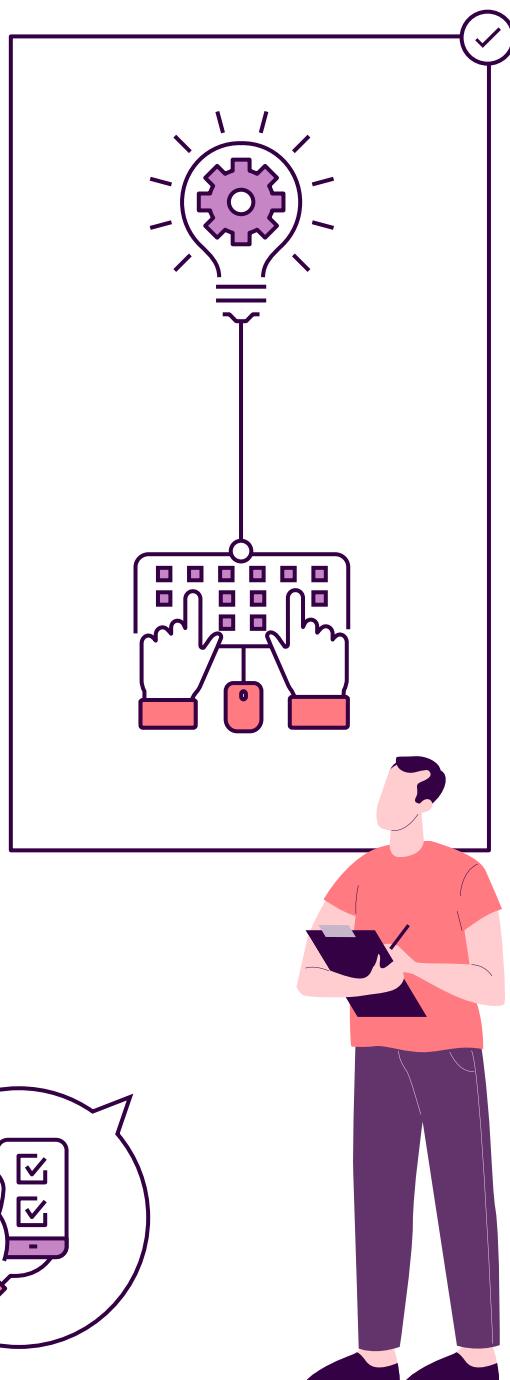
The USDS and the programs of Minas Gerais and Canada used special recruitment procedures, thereby avoiding the difficulties associated with hiring for civil service positions. The professional development scheme of Canada's free agents is based on the existing career systems in the civil service, since the agents are part of the regular administrative career regime. In LAC, similar initiatives are in the design phase as of this writing, such as the governmental innovators programs in Argentina and Paraguay.[43]

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43. Draft legislation for the civil service in Paraguay specifically links the Innovadores Públicos program to the government digital transformation process. It envisages periods of employment of up to three years as well as engagement with the Civil Service Regime.

Digital profession. Although some digital projects can be executed in short periods, it is important to create possibilities for long-term careers for digital professionals as a way of guaranteeing the continuity of the agenda, particularly in areas that require years of work before yielding fruits. With regard to the benefits for staff, the possibility of having a career in the public sector generates incentives that promote both recruitment and retention of the scarce talent available (Jurkiewicz, Massey, and Brown, 1998)[44] insofar as it is accompanied by an adequate organizational culture (in particular, of a robust performance evaluation system and merit-based promotions to continue to encourage good performance throughout the career).

A concrete perspective of potential salary growth represents a tangible, permanence-linked incentive for attracting candidates to long-term positions. The possibility of advancement in terms of responsibilities and positions, and the experience and challenges that this represents, constitute a further intrinsic incentive. Spain and the United Kingdom have taken significant steps to formalize a professional career for digital specialists in different civil service systems (both countries have far-reaching and long-term digital transformation agendas).[45]

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44. The authors argue that civil servants in general are highly motivated by job security and stability. Literature from the private sector also demonstrates the relationship between professional development and talent retention. See, among others: Ambrosius (2018), Shoaib et al. (2009), and Stamolampros et al. (2019).

45. Digital professionals can be employed both in systems that are based on positions (traditional in public administrations in English-speaking countries) and in career-based systems. In the United Kingdom, the position-based system enables professionals from the private sector to join the digital profession at any time and to try for any job within the civil service, if they meet the requirements. In Spain, which favors traditional career-based systems, digital professionals can only enter at the lowest rung on the ladder, with aspirations to develop a career wholly within the public sector (although the system has decent internal mobility mechanisms for learning in different institutions and levels of government, such as temporary external experiences in the private sector or international organizations).

THE CREATION OF A PROFESSIONAL CAREER OR DIGITAL PROFESSION INSTITUTIONALIZES THE WORK DEVELOPMENT PATH FOR DIGITAL SPECIALISTS WITHIN THE PUBLIC SECTOR FOR THE DIGITAL GOVERNMENT AUTHORITY AND OTHER ENTITIES.

In Spain and the United Kingdom, creating a digital career path implied making a series of changes in formal talent management procedures. Both are backed by a framework of competences that sets out the positions, the skills, and the career path that constitute the digital career.

The capability framework for the Data, Digital, and Technology profession in the United Kingdom[46] has a common language for describing digital roles and the skills needed for each (Annex 4). This framework, periodically updated, has enabled the government to create intergovernmental communities of professionals in those roles and has permitted specialists to envisage and map out a clear career path and to identify the skills they need to achieve success in each role. At the beginning of 2020, the Digital profession had six occupational categories: data, ICT operations, product and delivery, quality assurance, technical aspects, and user-centered design. The profession, which included more than 17,000 civil servants by the end of 2019, attracts people from a variety of academic backgrounds. A notable aspect of this skills framework, which is characteristic of the position-based systems used in English-speaking countries, is that it does not specify education or certification requirements and is exclusively focused on skills and practical experience.

The Fast Stream program,[47] which aims to attract young talent and is utilized throughout the U.K. civil service, helps to promote future digital leaders through a series of up to six rotations, mentoring and training sessions that last up to four years. As the Fast Stream program was designed for the preexisting civil service professions, its use by the Data, Digital, and Technology profession takes advantage of the existing infrastructure to build its talent base.

Since 1990, there has been a technology career within the framework of the civil service in Spain: the Systems and Technology Corps of the State Administration. It consists of three ranks, each with its associated levels of responsibility and educational requirements.[48] As in the United Kingdom, ICT career civil servants enjoy substantial horizontal mobility, with the possibility of working in any sector. Its focus is much more specifically focused on technology and, since it is framed within a civil service career system, it places more importance on formal qualifications. For example, to be promoted to a higher level, the professional must take a course that is equivalent to a master's degree. The course is offered by the National Institute of Public Administration (Instituto Nacional de Administración Pública, or INAP) in collaboration with the Menendez Pelayo International University (Universidad Nacional Menendez Pelayo, or UIMP), and participation is free of charge.[49]

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46.   See: https://digitalpeople.blog.gov.uk/2019/10/24/making-the-digital-data-and-technology-capability-framework-more-user-friendly/.

47.   See: https://www.faststream.gov.uk/digital-data-technology/index.html.

48.   See: https://www.inap.es/en/cuerpo-de-tecnicos-auxiliares-de-informatica-de-la-administracion-del-estado; https://www.inap.es/en/cuerpo-de-gestion-de-sistemas-e-informatica-de-la-administracion-del-estado; https://www.inap.es/en/cuerpo-superior-de-sistemas-y-tecnologias-de-la-informacion-de-la-administracion-del-estado.

49.   Not only are tuition fees paid, but part of the civil servant's salary is also paid during the study period, to guarantee that economic considerations do not hinder people from all parts of the country from participating.

BOX 3.3 The United Kingdom's Experience Creating the Civil Service Professions System

In 2017, the United Kingdom's public sector workforce was organized into three large groups: Operational Delivery, which included 50 percent of civil servants; departmental specialties, 14 percent; and key/cross-cutting specialties, 22 percent. The members of this latter group have three characteristics: (i) the majority are assigned to a specific department (or a ministry); (ii) a minority are assigned to a particular department but also offer their services to others; and (iii) an additional minority comprise specialties that represent key roles and that are only organized across disciplines, as their functions constitute the basic management structure of each agency of the administration (public policy, finances, digital communications, and human resources, among others).

In 2013, the United Kingdom decided to treat the latter group of roles that involved key or cross-cutting specialties differently, with a view to ensuring that their functions are carried out by highly qualified specialists and that these are, in turn, organized via a cross-cutting leadership structure that promotes uniform standards, shared use of resources, and better talent management. This has led to the emergence of the professions system, one of which was the digital profession, from which the following lessons can be learned:

The stability of the leadership guarantees the profession's identity and direction. For example, from 2011 to 2015, the digital profession had just one leader (Mike Bracken), whereas in the short period running from August 2015 to September 2016, there were three different leaders.

Clarity in the profession's goals and operational model is crucial for establishing its members' roles, priorities, and ways of operating. Such objectives and models must be built on the basis of evaluating the gaps and the skills required.

Professional competency frameworks must be built to define the standards of skills and knowledge that members must attain and that serve to inform recruitment decisions. In 2017, the digital profession's competency framework was approved.

Career paths should be established that help to inform members of the profession about the types of jobs and positions available, and the competencies and skills required to access them, to clearly show the prospects for professional advancement (McCrae and Gold, 2017).

The profession must be provided with quality information about the reform needs, such as digital transformation, of the different public agencies.
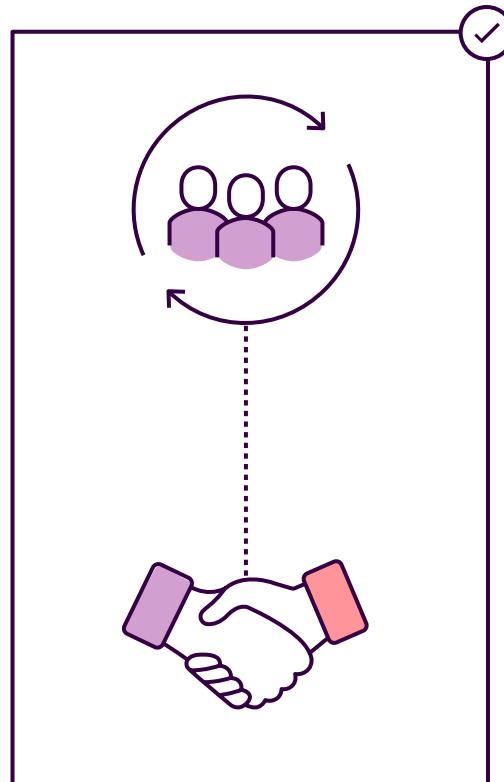
IMPROVE RECRUITMENT AND SELECTION PROCESSES

In any organization, there is a close relationship between the effectiveness of the recruitment process and organizational performance (Barber, 1998; Breaugh, 1992; Rynes, 1991). In view of this relationship, the United Kingdom and the United States have taken significant steps to reduce friction within the existing schemes for civil servants when it comes to recruiting digital talent for government. Two steps in particular are worth highlighting: the creation of specialized recruitment teams and reform of the recruitment process.

Both GDS[50] and USDS created teams dedicated exclusively to recruitment and selection. These teams make a variety of efforts to identify, make contact with, and attract specialized talent, including support for writing required job descriptions; publishing job offers in the general government portal and other places, such as LinkedIn; diffusion through blogs and articles published in the specialized media; participation in technology industry conferences; coordination of recruitment firms to fill specific roles; management of the internal recommendation process; coordination of application and interview processes; and management of team integration. The GDS recruitment team also supports the recruitment of digital professionals for the rest of the government.[51]

USDS modified the official hiring process to make it consistent with its talent model (which depends on a constant flow of new members).
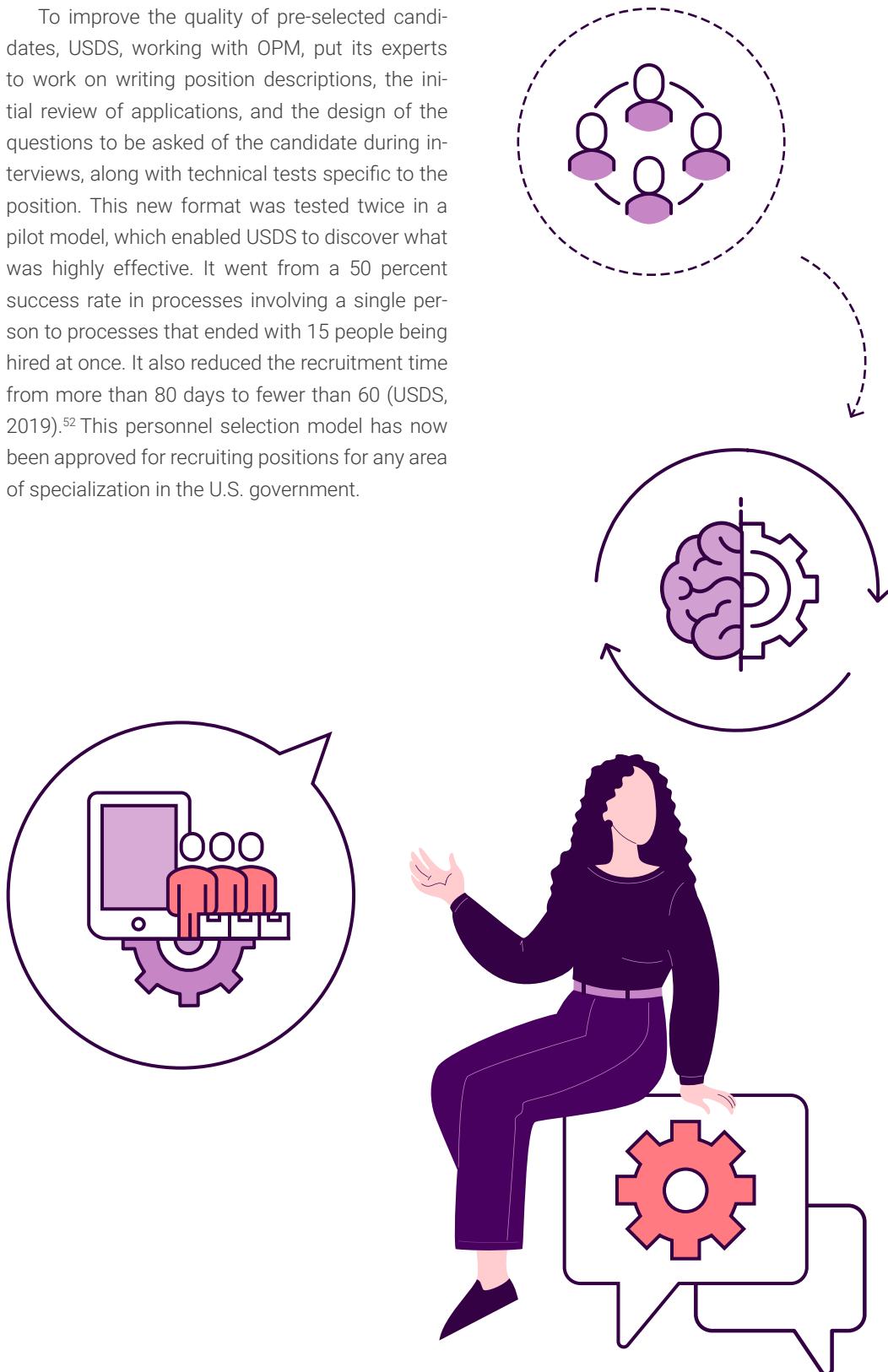
USDS limits the duration of contracts to four years, and staff remain in the institution for an average of 22 months, which means that recruitment is constant and a streamlined hiring process is fundamental.

At the time of its creation, USDS experienced a serious problem: each process lasted for an average of 80 days, and half of these ended without finding a suitable candidate. This was largely due to the fact that the process lacked quality control. The recruitment unit only intervened in the process when it was time to select the candidate. The Office of Personnel Management (OPM) was responsible for writing the description of the required job vacancy and choosing the candidate for the process using the predetermined filters employed for the entire U.S. government.

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50.   See: https://digitalpeople.blog.gov.uk/category/recruitment/.
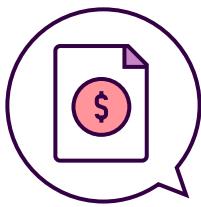
51.   This team works hand in hand with the internal human resource teams of each entity, making it easier for the civil service to attract and hire the most qualified candidates. The recruitment team helps institutions to write job descriptions to attract digital leaders, plan recruitment, and hire temporary staff when the ideal candidate has not been found.

To improve the quality of pre-selected candidates, USDS, working with OPM, put its experts to work on writing position descriptions, the initial review of applications, and the design of the questions to be asked of the candidate during interviews, along with technical tests specific to the position. This new format was tested twice in a pilot model, which enabled USDS to discover what was highly effective. It went from a 50 percent success rate in processes involving a single person to processes that ended with 15 people being hired at once. It also reduced the recruitment time from more than 80 days to fewer than 60 (USDS, 2019).[52] This personnel selection model has now been approved for recruiting positions for any area of specialization in the U.S. government.

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52. See: https://www.usds.gov/report-to-congress/2016/hiring-talent/.
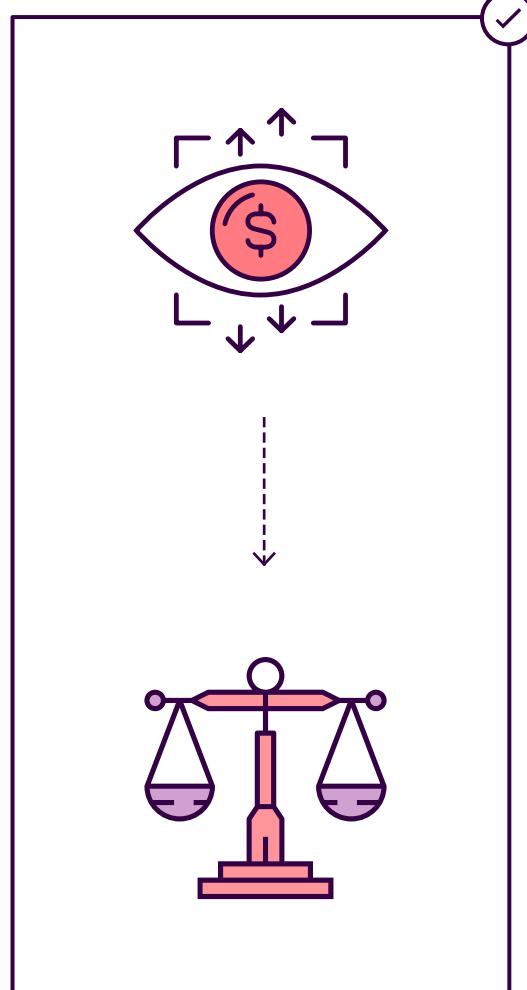
IMPROVE SALARY COMPETITIVENESS

Even in a context without fully competitive salaries compared with the private sector, offering higher salaries can help to attract and retain digital talent, regardless of the chosen mode of engagement (a short/medium term scheme or a career). Increasing salaries in the public sector improves the capacity to fill vacancies in the organization (Deserranno, 2015; Manning, 2011), and a higher salary helps to compensate for aspects of the job that might discourage the candidate (Dal Bó et al., 2013).

In all the cases analyzed, efforts have been made to pay higher salaries without having to embark on salary restructuring for the entire public administration. In USDS, the vast majority of its members earn the maximum salary permitted by the government (which has the secondary effect of paying everyone the same).[53] In GDS, they seek to pay the maximum permitted within the wage bands established for each role (Gawen, 2019).

In AGESIC, several measures were taken to increase salaries. Most of the civil servants are hired through a foundation,[54] which enables them to offer higher salaries (as well as speed up recruitment). Additionally, a regulatory change made it possible to pay up to 15 percent more than the level established for the civil service to certain key positions in the agency.[55] In view of these heterogeneous arrangements, at the beginning of 2021, the Uruguayan government was working on the creation of a new occupation-based civil service regime applicable to future civil servants, with evaluation factors that enable a more precise analysis of the salary level and competitiveness of each position with respect to other positions in the public sector and the labor market in general, and thereby compensate people more effectively.[56] For its part, in Spain, ICT positions throughout the central government (and not only the SGAD) have a specific salary supplement that is higher than for general positions.

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53. Pay grade GS-15.

54. The Ricaldoni Foundation, associated with Faculty of Engineering at the University of the Republic (UDELAR).

55.   Law 19355, Article 81: https://www.impo.com.uy/bases/leyes/19355-2015.

56. See: https://www.uypress.net/auc.aspx?105496.
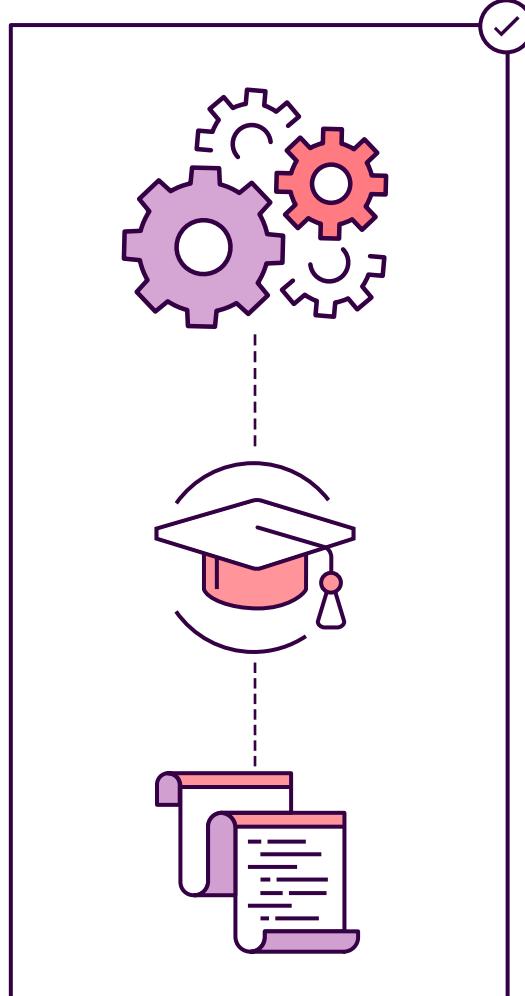
PROMOTE CONTINUOUS TRAINING, ESPECIALLY IN CAREER-BASED SYSTEMS

Spain, the United Kingdom, and Uruguay have created mechanisms to encourage continuous learning for digital professionals. The academic literature (mainly from the private sector) cites training as a significant factor in retaining employees (Bibi et al., 2018; Fletcher et al., 2018; Mattox and Jinkerson, 2005; Naqvi et al., 2015). The United States has not promoted similar measures because its own talent model is not designed for its members to make a career in the administration. They gain public sector experience over the short or medium term before returning to the private sector.

The cases analyzed use various ways of promoting continuous learning for digital civil servants, in particular courses, communities of practice, and exposure to emerging technologies. In the case of Spain, the INAP offers courses directed specifically to professionals in ICT positions (not only for the SGAD, but throughout the entire government). At the same time, the SGAD has partnered with universities to offer training in areas of emerging technologies. This type of investment is sensible. This type of investment is sensible, since some civil servants remain in the public sector throughout their professional career.

GDS created its own training institute, GDS Academy,[57] in which its civil servants are often teachers as well as students. One service provided by the Academy is the Emerging Technology Development Program, which is open to technical professionals from both GDS and other public institutions. The program consists of 10 weeks of specialized and personalized training for each participant.[58] With regard to communities of practice, AGESIC and GDS coordinate these (in Uruguay, they are called centers of excellence) around specific topics as a way of exchanging knowledge and experiences, not only for civil servants from the government authority, but from the wider public sector. In 2019, the topics discussed in Uruguay were interoperability, change management, and digital health. The topics dealt with by the GDS communities of practice have been, among others, software development, user experience, and product management.
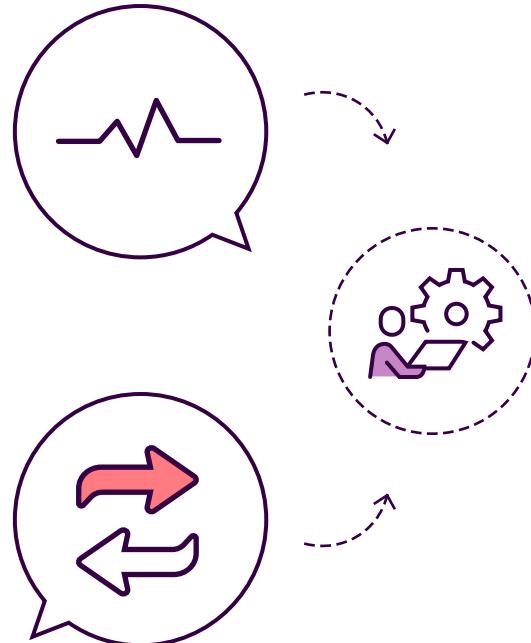
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57.   See: https://gdsacademy.campaign.gov.uk/.

58.   See: https://www.gov.uk/guidance/emerging-technology-development-programme.

With regard to exposure to emerging technologies, although there is general recognition that this is not the core activity for a digital government authority, GDS, AGESIC, and SGAD all incorporate this practice as part of their strategies to counteract the problem of technological backwardness. In AGESIC, a working group is dedicated exclusively to this end. Its responsibilities, among others, are to promote understanding and the use of the new technologies selected by other members of the AGESIC team. It also coordinates courses on emerging themes for its own civil servants and those from other organizations. In 2018, the topics were blockchain, business architecture, transformation based on data, and DevOps microservices.[59] GDS runs the Emerging Technology Development Program, a 10-week personalized course that aims to train technicians capable of incorporating technologies such as artificial intelligence, augmented reality, biotechnology, and geospatial technology into problem solving for public policy.[60]

How feasible are all these practical strategies for capturing digital talent in LAC? Although the solutions gathered in this chapter can inspire other experiences, they are the end result of what has been possible to implement in the context of each country, and they respond to specific challenges. In practice, the possibility of differentiating the digital profession from other civil service professions, to improve the recruitment and retention of digital talent, and to increase the chances of success of digital transformation in the public sector will depend on various factors, including the flexibility of the legal framework and the room for negotiation with key actors such as unions. Any of these strategies and civil service reforms aimed at acquiring talent, however practical they may be, will always require political will and a good communication strategy to make them a reality.

IN ADDITION TO OVERCOMING THE MULTIPLE CHALLENGES ASSOCIATED WITH ACQUIRING THE TALENT NEEDED TO **DRIVE THE DIGITAL TRANSFORMATION,** GOVERNMENTS MUST ALSO TACKLE FURTHER CHALLENGES. THE DIGITAL TRANSFORMATION ITSELF CHANGES THE JOB DESCRIPTIONS OF MANY CIVIL SERVANTS AND **CREATES AN URGENT NEED FOR ADAPTATION.**

How many civil servants might be affected by these changes, and how prepared they are, is the subject of the following chapter.

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59. For more information, see: https://www.datamation.com/applications/devops-and-microservices.html,

60. See: https://www.gov.uk/guidance/emerging-technology-development-programme#:~:text=Programme%20graduates%20will%20have%20the,bespoke%20learning%20on%20topics%20including%3A&text=geospatial%20technology.
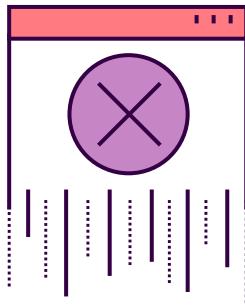
ANNEX 3.1
DIGITAL TEAMS IN LAC

Country	Country
Argentina	Public Innovation Secretariat (Secretaría de Innovación Pública), which includes the following under-secretariats: (i) administrative management of public innovation; (ii) open government and digital country; (iii) administrative innovation; (iv) national procurement office; and (v) information and communication technologies.
Bahamas	Department of Transformation and Digitization (DTD), Office of the Prime Minister
Barbados	E-Government Unit, Ministry of Innovation, Science, and Smart Technology
Belize	Office of the Prime Minister (Team of the Advisor for Digital Transformation and e-Governance)
Bolivia	Electronic Government and Information and Communication Technologies Agency, Ministry of the Presidency
Brazil	Digital Government Secretariat, Ministry of Economy
Chile	Digital Government Division, Ministry of the General Secretariat of the Presidency
Colombia	Digital Government Directorate, Ministry of Information and Communication Technologies
Costa Rica	Governance Directorate, Ministry of Science, Technology and Telecommunications
Ecuador	Under-secretariat for Electronic Government, Ministry of Telecommunications and the Information Society
El Salvador	Electronic Government Directorate, Technical and Planning Secretariat of the Presidency
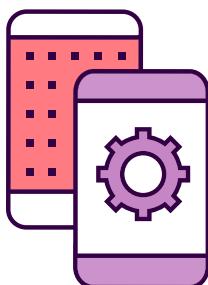
Country	Country
Guatemala	Commission for Open Public Management and Transparency
Guyana	National Data Management Authority
Haiti	-
Honduras	Digital Government Division, General Secretariat for Government Coordination; Administrative Simplification Unit, General Secretariat for Government Coordination
Jamaica	E-Gov Jamaica Limited
Mexico	Digital Government Unit, Coordination of the National Digital Strategy of the Presidency
Nicaragua	General Directorate for Technology, Ministry of the Treasury
Panama	National Authority for Government Innovation
Paraguay	Directorate General for Electronic Government, Ministry of Information and Communication Technologies
Peru	Digital Government Secretariat, Presidency of the Council of Ministers
Dominican Republic	Presidential Office for Information and Communication Technologies
Suriname	E-Government Suriname
Trinidad and Tobago	iGovTT
Uruguay	Agency for the Development of Electronic Government and the Information Society
Venezuela	National Center for Information Technologies

ANNEX 3.2
GOVERNING BODIES OF THE LEADING COUNTRIES ANALYZED
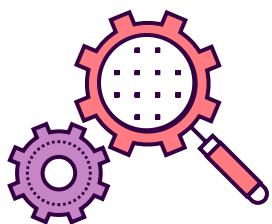
General Secretariat for Digital Administration (SGAD), Spain. The SGAD (which, in 2019 came under the Ministry for Economic Affairs and Digital Transformation, having previously been under the Ministry of Territorial Policy and Public Administration), has a team of approximately 280 civil servants, excluding outside contractors. It coordinates the national digital agenda and provides a wide range of shared digital services that serve the central administration, the 17 regional governments, and more than 8,000 municipalities (e.g., interoperability, identification and digital signature, notification systems). The SGAD coordinates with the ICT teams within each ministry, which are responsible for the transformation of the services they offer. SGAD has played an important role in updating the legal framework that makes the country's digital transformation possible, as well as ICT procurement for the rest of the state.

Government Digital Service (GDS), United Kingdom. The GDS was founded in 2011 with a small group of experts from the private sector in response to a high-level directive to review the government's online presence. By, 2019 there were more than 800 civil servants working in GDS. Mapped to the Cabinet Office, it began with a mandate to improve user experience with public digital services that, with the passage of time, has grown to encompass the aims of making public services "digital by default," managing the government single domain (Gov.uk), providing common tools to other public institutions (for notification, registration, payments, etc.), and increasing digital skills in the rest of the government. It coordinates the management of a digital profession throughout government with the civil service, including a scheme for recruiting young digital talent.

Agency for the Development of Electronic Government and the Information Society (AGESIC), Uruguay. Founded in 2005, AGESIC falls under the Presidency of the Republic. Its mission (enshrined in law) is to promote the deployment of technology to benefit citizens, firms, and government. The digital agenda that AGESIC leads has enjoyed great stability (with just one manager in charge from its creation until the beginning of 2020) and has become a state policy that transcends changes of government. Since its inception, its objectives have included the creation of basic ICT infrastructure for government, the creation of common tools, the digitization of public services, and digital capacity-building throughout the government, among others. It works in conjunction with the country's private ICT firms. In 2019, it employed 325 civil servants, approximately three-quarters of which were contractors hired (with public budget) by a foundation outside of the government, to enhance the possibilities of higher remuneration and more streamlined recruitment models.
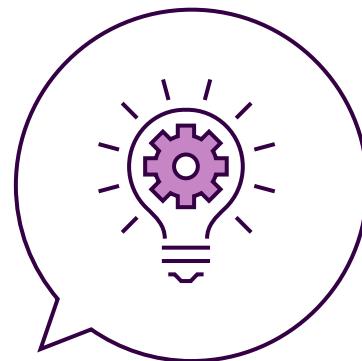
United States Digital Service (USDS). USDS was created in 2014 with a small group of experts from the private sector, initially in response to the failure of the launch of the Obama administration's public healthcare insurance in the public market (Healthcare.gov). Its rapid success in the face of that crisis gave rise to a permanent institutional structure within the Office of the President. It learned many lessons from the United Kingdom's GDS with regard to principles and ways of working. Since then, it has redesigned various critical services for veterans, farmers, and others. In 2019, it had approximately 180 employees, most of whom worked for the institutions that provide the services that are prioritized for redesign. It employs a strict job rotation model: contracts run for between three months and four years, with an average of 22 months.

ANNEX 3.3
LIST OF TASKS
FOR DIGITAL TEAMS

1. Audit compliance with cybersecurity rules.

2. Coordinate a network of government technology professionals (e.g., network of chief information officers).

3. Coordinate ICT issues with other public entities.

4. Coordinate ICT issues between the public and the private sector.

5. Provide ccoordination or quality control of government ICT procurement.

6. Create a digital agenda, national digital strategy, national electronic government plan, or others.

7. Create and/or provide training in digital themes for citizens/firms.

8. Create and/or provide training in digital themes for civil servants.

9. Define and promote ICT human resource policies throughout the government.

10. Define, promote and/or oversee personal data protection policies.

11. Define, promote and/or oversee policies to protect access to information.

12. Design and promote technical regulations, standards and procedures in ICT matters for the government.

13. Execute procedure/service digitization projects.

14. Execute procedure/service simplification projects.

15. Establish standards for the design and provision of digital services.

16. Audit and monitor compliance with rules and standards in ICT matters.

17. Create cybersecurity regulations.

18. Manage digital tools to share with other public institutions (e.g., for identification, payments, and certifications).

19. Manage the government cloud strategy.

20. Manage a citizen service center or some other way of serving the public (e.g., a call center).

21. Manage an innovation laboratory or similar.

22. Manage a free software program.

23. Manage a geographical data system.

24. Manage the government single domain (e.g., www.gov.uk).

25. Manage the interoperability scheme (standards, governance and platform).

26. Manage the national open data program or policy.

27. Manage the multi-channel citizen attention system (e.g., integrated services, telephone and web centers).

28. Manage and/or coordinate a communication strategy for the digital agenda, digital government plan, or similar.

29. Implement a digital agenda, national digital strategy, national electronic government plan or similar.

30. Manage the CSIRT (Computer Security Incident Response Team) and/or Security Operations Center (SOC).

31. Carry out technological modernization of subnational governments or provision of shared digital tools for subnational governments.

32. Carry out technological modernization of internal procedures of the central government (e.g., document management).

33. Monitor the ICT capacities (beyond human resources) of other government entities.

34. Monitor a digital agenda, national digital strategy, national e-government plan, or similar.

35. Provide technical assistance to other entities for the digitization of services.

36. Provide internet services (e.g., a national network of free internet access points).

37. Carry out analytical studies regarding aspects of ICT/digital government.

ANNEX 3.4
JOB FAMILIES AND OCCUPATIONS IN THE DIGITAL, DATA, AND TECHNOLOGY PROFESSION OF THE UNITED KINGDOM

USER-CENTERED DESIGN JOB FAMILY

- Content designer
- Content strategist
- Graphic designer
- Interaction designer
- Service designer
- Technical writer
- User researcher

PRODUCT & DELIVERY JOB FAMILY
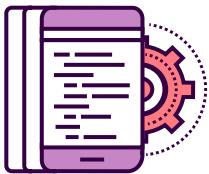
- Business analyst
- Delivery manager
- Product manager
- Program manager

TECHNICAL JOB FAMILY
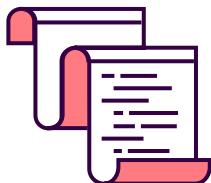
- Data architect
- Development operations
- Infrastructure engineer
- Network architect
- Security architect
- Software developer
- Specialist infrastructure engineer
- Technical architect
- Technical specialist architect

Note: See: https://www.gov.uk/guidance/emerging-technology-development-programme#:~:text=Programme%20graduates%20will%20have%20the,bespoke%20learning%20on%20topics%20including%3A&text=geospatial%20technologylearning%20on%20topics%20including%3A&text=geospatial%20technology.

IT OPERATIONS

- Business relationship manager
- Change and release manager
- Command and control center manager
- Engineer – application operations
- Engineer – end user computing
- Engineer – infrastructure operations
- Incident manager
- IT service manager
- Problem manager
- Service desk manager
- Service transition manager
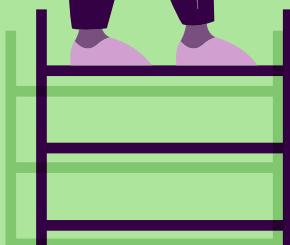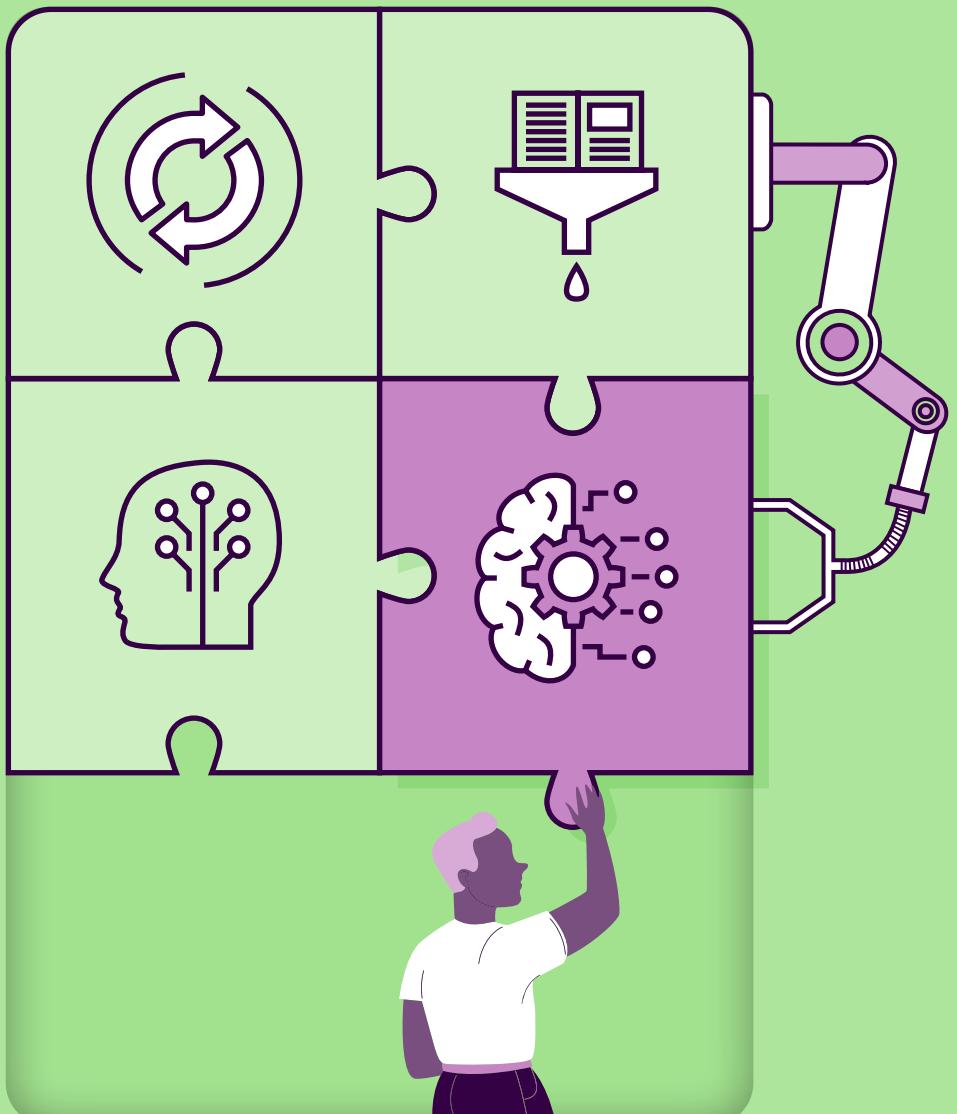
DATA JOB FAMILY

- Data analyst
- Data engineer
- Data scientist
- Performance analyst

QUALITY CONTROL (QC)

- QC analyst
- Test engineer
- Test manager

4

HOW READY IS THE CIVIL SERVICE FOR DIGITAL TRANSFORMATION?

EVIDENCE FROM A SURVEY OF CIVIL SERVANTS IN CHILE
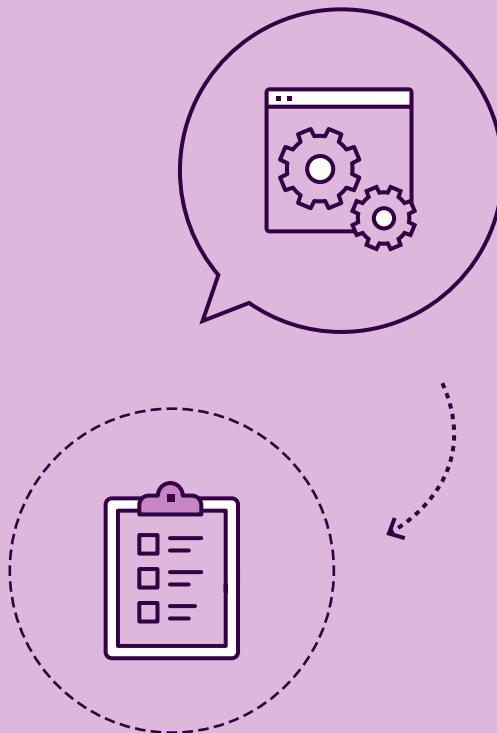
AUTHORS | Benjamin Roseth · Javier Fuenzalida · Francisco Suárez · Rodrigo Salas

ABSTRACT

Digital transformation can substantially change public sector jobs. The redesign, creation, and substitution of functions that it brings imply reinventing tasks, training strategies, and job mobility, among other effects. This chapter examines the degree to which the civil service is prepared to tackle these changes based on a survey of 9,307 employees in 65 public institutions in Chile and on a new methodology for estimating the automation potential of the jobs of civil servants. This degree of preparedness considers civil servants' attitudes, competencies, and perceptions, as well as the personnel management practices needed to address them.

The findings of the study reveal a diverse panorama with regard to the prospects for digital transformation in the public sector. Most of the people interviewed have attitudes, competencies, and perceptions that will facilitate modernization: they are amenable to change and willing to perform different tasks in their organizations; they believe technology has a positive impact on their jobs; they display high technological affinity and competence; and they are satisfied, committed, and motivated in the workplace. A small group of civil servants expressed willingness to move to a different city or to change institutions, and fewer than half of them reported that they enjoy job stability and good work opportunities either inside the government or outside of it.
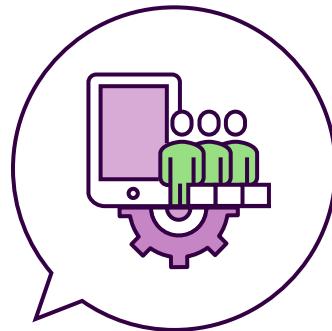
With respect to personnel management, although most civil servants report seeing positive leadership practices among their immediate supervisors, very few report having recently received training in technology and computing, and only a minority claim to have had sufficient training when their institution has implemented technological changes.

In general, people whose jobs have the highest automation potential consistently show attitudes, competencies, and perceptions that are less favorable toward digital transformation, and they tend to benefit less from management practices that would help to improve them.

THE RESULTS OF THIS STUDY **WILL HELP TO DEVELOP MEASURES THAT WOULD ENABLE CIVIL SERVANTS AND ORGANIZATIONS** TO PREPARE FOR AND ADAPT TO DIGITAL TRANSFORMATION IN THE PUBLIC SECTOR.

How Ready Is the Civil Service for Digital Transformation?
Evidence from a Survey of Civil Servants in Chile

4

INTRODUCTION

Digital transformation ushers in many changes in public sector jobs. Some functions are created from scratch by the need to manage new digital systems and services. Others evolve as a result of incorporating technologies that require different job skills. Some tasks become unnecessary or are substituted by digital tools, which frees up time for the civil servants who used to perform them and enables them to provide more personalized attention to citizens or resolve more complex problems. Estimating the magnitude of these possible changes to public employment will enable key actions to be designed and targeted so that digital transformation proves effective. These include training for civil servants, staff transfers between areas or organizations, change management initiatives, and redundancy programs.
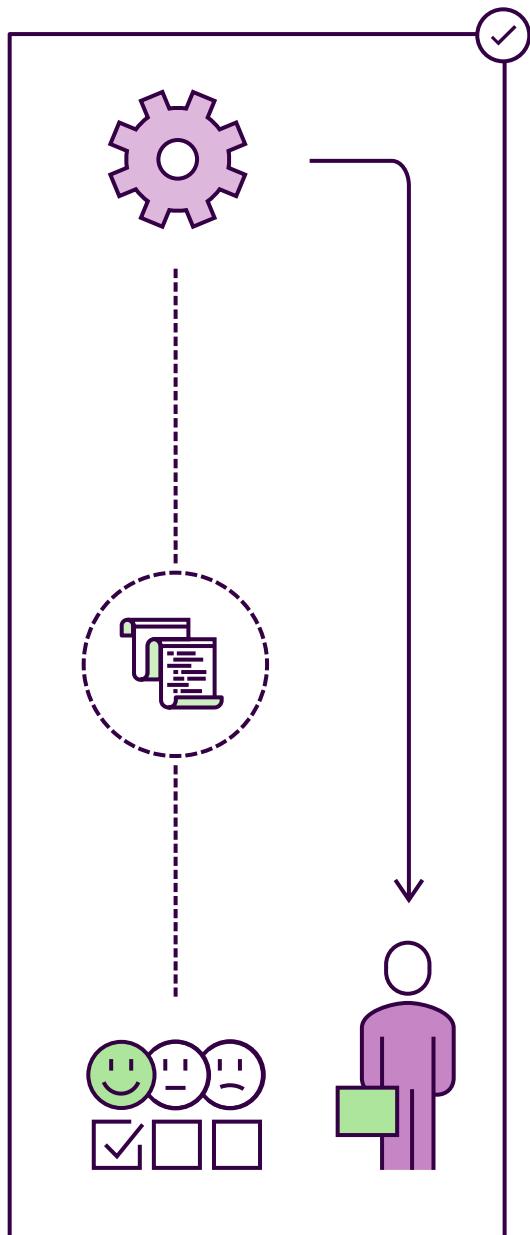
This chapter provides a framework for decision making to manage the evolution of public employment caused by digital transformation. It adds to the literature about the potential impact of automation on the labor market. This literature has significantly contributed to scientific and practical knowledge, but existing estimates are not entirely relevant for the governments of Latin America and the Caribbean (LAC). Rather, they tend to consider the effects on work in the European or U.S. private sectors.[61] Moreover, some of these studies employ methodological criteria that may be out of date given the speed with which technology is advancing.[62] Furthermore, they are not based on the direct experience of those whose jobs are evolving or being eliminated, but rather on the opinions of experts.[63] This chapter helps to address those shortcomings, as it presents results from a survey of 9,307 civil servants from 65 public institutions in Chile. Through this study, the government implemented a new way of estimating the automation potential of employment based on the information provided by the civil servants about the nature and the content of their jobs (described in detail in Annex 4.1).

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61. The study by Frey and Osborne (2013) focuses on the labor market in the United States; the Partnership for Public Service (2019), and Viechnicki and Eggers (2017) studies specifically focus on the government of the United States; McKinsey Global Institute (2017) deals with the global labor market; and Nedelkoska and Quintini (2018) and Arntz et al. (2016) study the labor market in the OECD countries.

62. The article by Frey and Osborne (2013) and its guidelines for establishing what is susceptible to automation have served as the basis for a series of subsequent estimates, such as the research of Arntz et al. (2016), Nedelkoska and Quintini (2018), and Partnership for Public Service (2019). These studies and investigations have not updated these criteria.

63. The Frey and Osborne (2013) study is constructed based on the opinions of a group of researchers, all experts in machine learning, about the possibility of automating 70 occupations.

notion seeks to represent the irreversible changes in the content of a job as a result of digital transformation, such as those derived from the disappearance of tasks. This is the case, for example, of the physical movement of paper documents, eliminated following the implementation of a document management system; the search for relevant legal precedents, replaced by a system of artificial intelligence that analyzes them automatically; or the functions of in-person customer care, reduced largely thanks to the growing number of online services. Moreover, digital transformation can add new functions such as the management of a new information system or analytical tool.

Although the results of the survey represent the Chilean case, they may be relevant for other LAC countries if certain elements of context are taken into consideration. First, the characteristics of the population surveyed are an important factor when evaluating the relevance of the findings for other countries (see Table A4.3.5 in Annex 4.3). In this respect, these are civil servants who mainly work in offices. Secondly, the results presented reflect, to a certain degree, the institutional context: the government of Chile has a relatively high level of digital maturity compared with other countries of the region.[64] Various Chilean public institutions have already implemented digital reforms that include automating certain functions. This means that, in the aggregate, future estimates of the automation potential of other countries that are less advanced in the digital field may be higher than those reported for Chile.

The **automation potential index (API) for public sector occupations** is described below, including its construction and measurement in Chilean public institutions, and the general results of the API are presented. Finally, the chapter discusses the implications of the findings of this study for change management in the context of the government digital transformation.

It then triangulated the estimate with perceptions about the key elements of change management: job satisfaction, commitment and motivation, access to training, technology management, perception of leadership, willingness to change, and future job opportunities.

The chapter employs the concept of "automation potential" as a proxy for the potential for disruption caused by digital transformation. This

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64. According to the 2020 United Nations Electronic Government Index, Chile was ranked second in Latin America (behind Uruguay) and 34th in the world (Uruguay was ranked 26th).

THE AUTOMATION POTENTIAL INDEX FOR PUBLIC SECTOR OCCUPATIONS

The API seeks to estimate the susceptibility to automation of the tasks performed by civil servants.

IT CAN IDENTIFY THE GROUPS OF CIVIL SERVANTS WHOSE TASKS WILL BE MORE (OR LESS) AFFECTED IN A CONTEXT OF DIGITAL TRANSFORMATION AND, BASED ON THOSE SEGMENTS, ANALYZE DIVERSE ATTITUDES AND PERCEPTIONS THAT ARE ESSENTIAL FOR SUCH REFORM PROCESSES.

The index was built based on a survey designed following a review of the existing literature; consultations with experts in automation, digital transformation, and public administration; and interviews with civil servants. Specifically, cognitive interviews were held to test and improve the comprehension of all the questions in the questionnaire. Time use interviews were also carried out to ensure that the survey responses were consistent with the functions of the respondents. Annex 4.1 explains the details of the survey design and validation, the construction of the API, and the consistency checks applied.
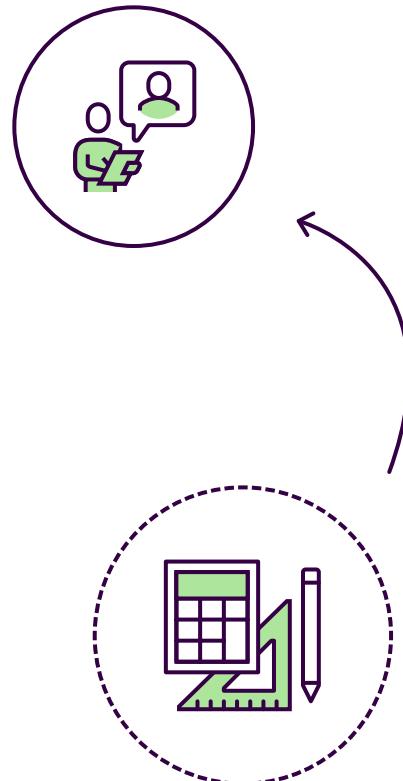
THE **API** CONSISTS OF THREE SUBINDICES, WHICH ARE EXAMINED BELOW.

1

AUTOMATION BOTTLENECKS (70 PERCENT OF THE API)

This subindex measures the intensity with which the respondent's occupation involves carrying out activities not susceptible to automation (so-called bottlenecks). The questionnaire used for this study considers 17 bottlenecks (see Table A4.3.1 in Annex 4.3), which represents an update, adaptation, and validation of those originally established by Frey and Osborne (2013).[65] Information for the survey is gathered in two phases. First, the questionnaire asks which of the activities from the list of bottlenecks shown were "strictly necessary" for the respondent's work. Thereafter, it asks the respondent to indicate the frequency with which these selected tasks are carried out. The options available are an adaptation of the United States' Occupational Information Network (O*NET) survey: "never" (does not perform this activity), "annually" (at least once a year), "monthly" (at least once a month), "daily" (at least once a day), "several times a day" (around half of the work day), and "always" (throughout the whole day, continuously, every day). To esti-

mate the proportionality between these frequencies, the responses were converted into units of measurement that emulate hours[66] (see Table A4.3.2 in Annex 4.3), an adjustment inspired by the work of Viechnicki and Eggers (2017).
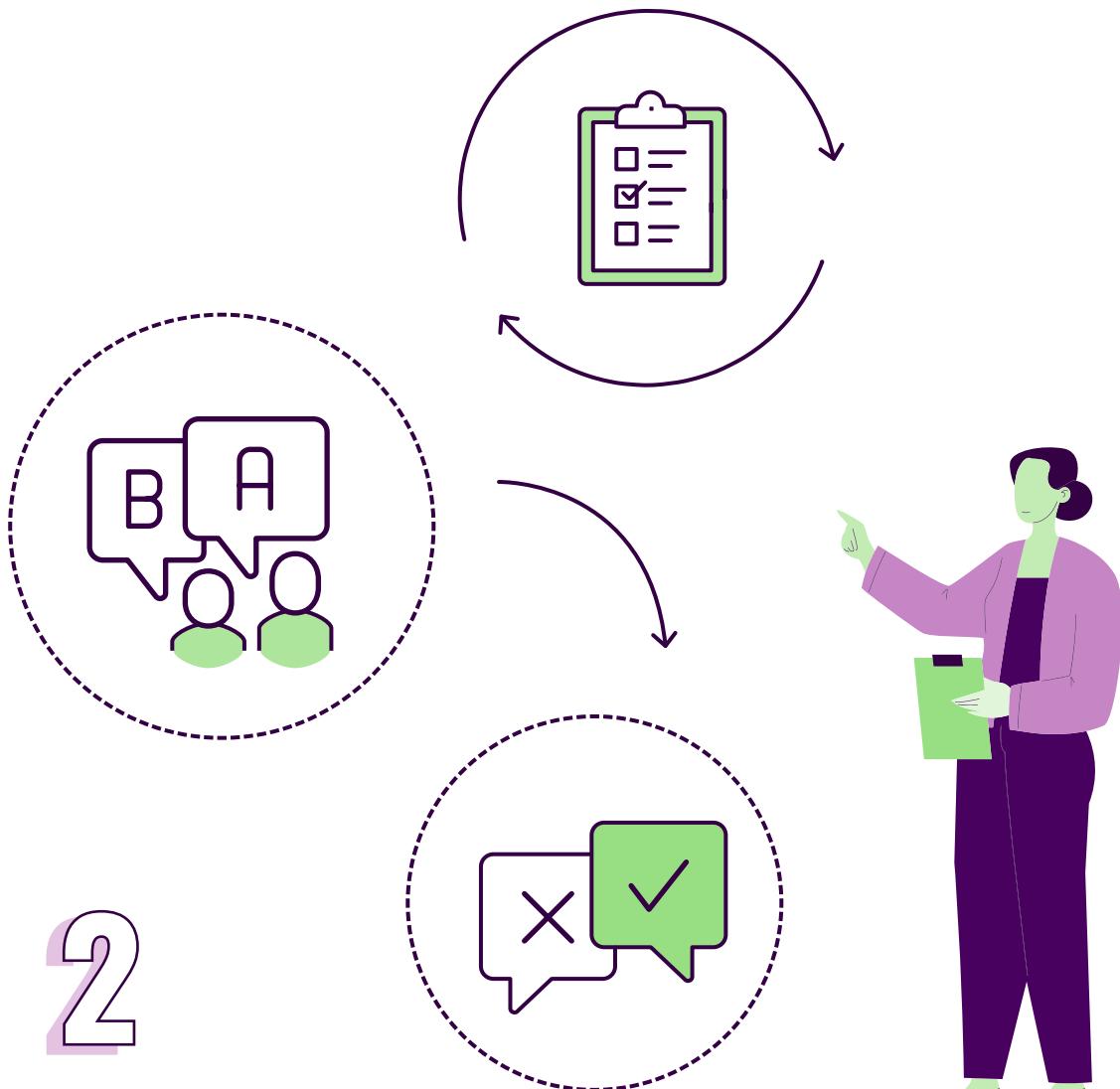
For the calculation of the subindex of bottlenecks for each individual (s_j), the scores obtained for all the reported activities ($s_j = \sum_{i=1}^{i=17} x_i$) were added together. Then, considering the distribution biased to the right of this sum, the logarithm function was applied to this total value [$(1+s_j)$] and the result was linearly rescaled from 0 to 100. The directionality of the subindex of bottlenecks had to be inverted, in the understanding that higher values in this index signify a lower automation potential.

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65. The activities included in this list are interpreting laws, rules, or regulations to determine whether the events or processes comply with them, and determining the value, quality, or importance of goods and/or services.

66. It is specified that the points "simulate, approximately" the hours devoted to an activity because the survey did not require the respondents to make an exact count of their hours (for example, it did not set a limit of a certain number of hours per day). Therefore, the simulation of hours is useful for construing the proportionality of the points but cannot be interpreted as a precise report of how respondents distribute their time.

How Ready Is the Civil Service for Digital Transformation?
Evidence from a Survey of Civil Servants in Chile

4

2

ROUTINIZATION
(22 PERCENT OF THE API)

This indicator measures how routine tasks are, according to a methodology (Marcolin et al., 2016) that employs four questions from the survey of the OECD Program for the International Assessment of Adult Competencies (PIAAC) regarding the degree of flexibility in the order of labor activities, the autonomy with which the work is performed, task planning, and organization of the time required for the job done. These characteristics are understood to be the opposites of routinization and automation potential (Arntz et al., 2016). In this way, the four questions and their respective response options were adapted and incorporated into the survey. The latter included a scale that ranges from "not at all" (1) to "to a very high degree" (5) for the items related to job flexibility and autonomy; and from "never" (1) to "every day" (5) for the questions relative to task planning and the organization of time at work (see Table A4.3.3 in Annex 4.3). Finally, the routinization subindex corresponds to the simple average of the four scores inverted and rescaled from 0 to 100.
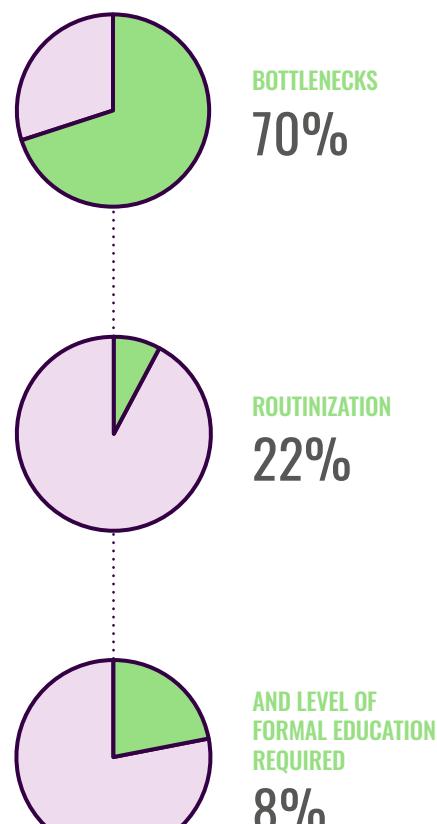
3

LEVEL OF FORMAL EDUCATION REQUIRED (8 PERCENT OF THE API)

This subindex postulates a negative relationship between the level of formal education required for a position and its automation potential (following Brandes and Wattenhofer, 2016). The O*NET survey inspired both the questions and the response options. Therefore, civil servants were asked to answer the following: "If someone else were hired to perform your job, what educational level would be necessary?" The alternatives presented to those interviewed varied from "lower than middle school completed" to "doctorate or post-doctorate." Considering the direction of these responses, in the same way as with the routinization subindex, these were inverted and transformed linearly into scores from 0 to 100 (see Table A4.3.4 in Annex 4.3).

The weightings of each subindex were determined according to expert opinions structured by an analytical hierarchy process (Saaty, 1988). Given the subjective nature of these weightings, a sensitivity analysis was conducted testing two different weight allocations: bottlenecks (50 percent), routinization (25 percent), and level of formal education required (25 percent); and bottlenecks (33.33 percent), routinization (33.33 percent), and level of formal education required (33.33 percent). Although these alternative assignation percentages affect the absolute results of the analysis presented in this chapter, all the trends remain, which corroborates the consistency of the weightings selected. Therefore, the conclusions drawn from them are also maintained.

THE AUTOMATION POTENTIAL
INDEX FOR PUBLIC SECTOR
OCCUPATIONS

BOTTLENECKS
70%

ROUTINIZATION
22%

AND LEVEL OF FORMAL EDUCATION REQUIRED
8%

How Ready Is the Civil Service for Digital Transformation?
Evidence from a Survey of Civil Servants in Chile

4
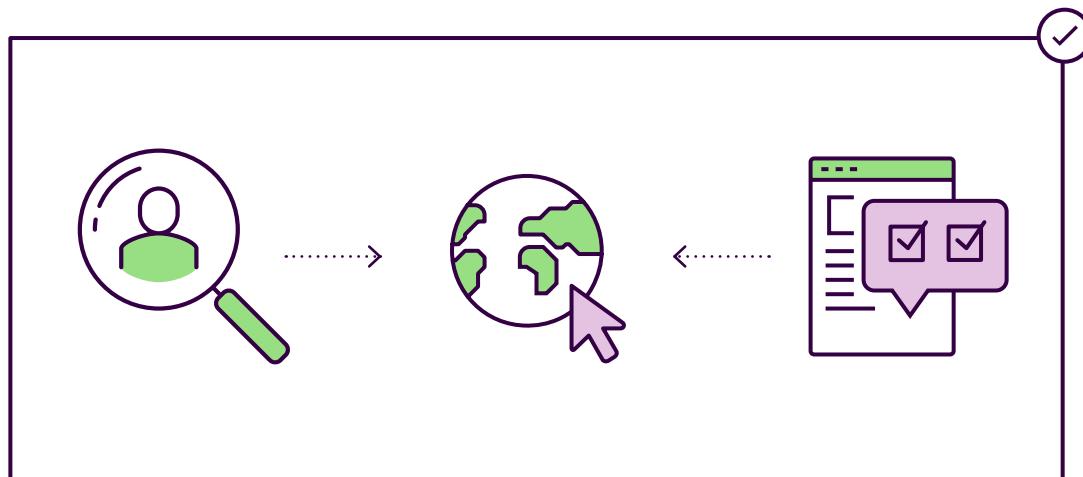
Following calculation of the API, three segments of the automation potential were established: low (0-0.3), medium (>0.3-<0.7), and high (0.7-1) (following the examples of Arntz et al., 2016; Frey and Osborne, 2013; and Nedelkoska and Quintini, 2018). In practical terms, an occupation with low automation potential would generally require a high educational level to be successfully carried out and would not therefore be routine. This means that it can be performed with a high degree of autonomy and that its tasks can be flexibly organized. Moreover, the exercise of this job would usually involve many bottlenecks (non-automatable activities) and/or much time invested in them. In contrast, if a civil servant's occupation has a high automation potential, it would typically be more routine and call for a lower educational level, fewer bottlenecks, and/or less time devoted to them.

The survey was distributed by email between January and February 2020 and was open for four weeks. A total of 14,410 civil servants voluntarily completed the questionnaire from the 94 institutions that agreed to collaborate (from both central administration and subnational government organizations). Finally, 65 of the participating institutions achieved a response rate of greater than 25 percent, the threshold established as the cutoff point to include the institution in the aggregate analysis. This minimum quota was fixed to improve the representativeness of the data from each organization and to limit the effects derived from possible unobservable selection bias due to low response rates.

THE SAMPLE FRAME OF THE 65 INSTITUTIONS CONSISTED OF A TOTAL OF 30,487 PERSONS, OF WHICH 9,307 PARTICIPATED IN THE SURVEY.

This represents a response rate of 30.5 percent. The gender and age distributions of the sample frame and the sample are practically identical, which suggests a low incidence of these demographic characteristics in possible self-selection biases. With respect to educational level, individuals who completed only basic education or middle school are underrepresented, whereas participants with a university degree, a master's degree, or a doctorate are overrepresented. Analysis of the data included weightings by gender, age, and education for each institution, thereby improving the representativeness of both the overall results and the results from each of the 65 public organizations (see Table A4.3.5 in Annex 4.3).[67]

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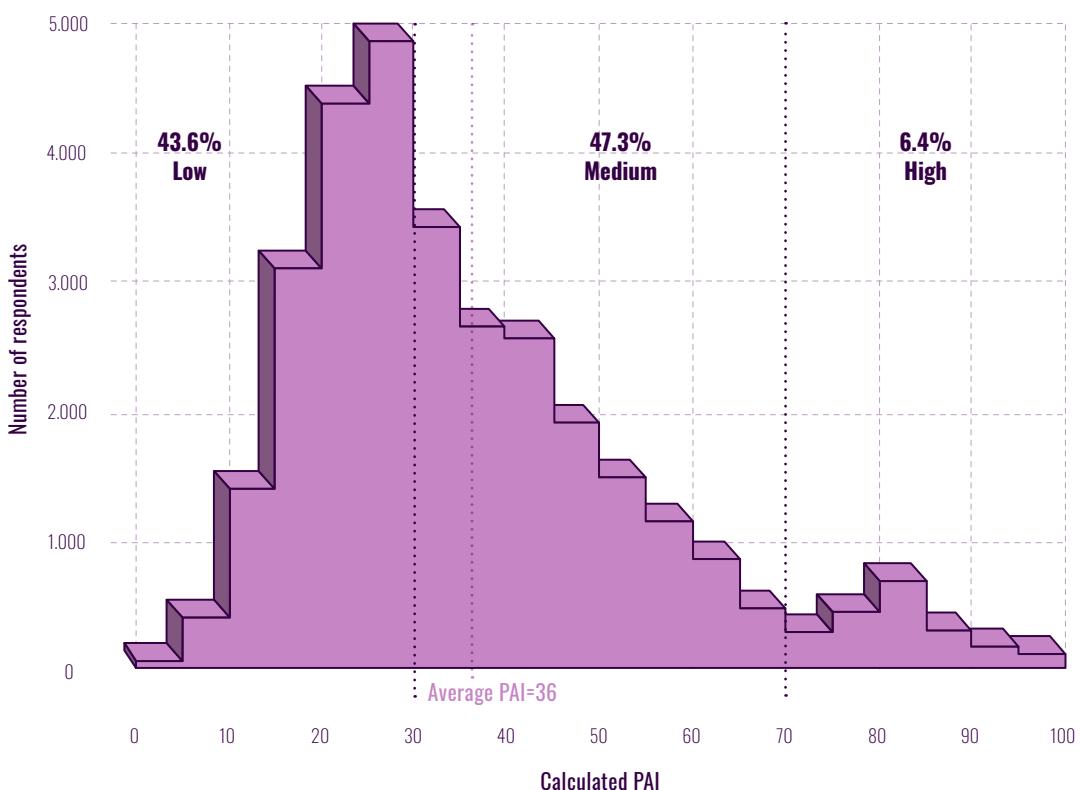
67. Each organization carried out the adjustments according to the demographic information of their employees provided by the services themselves and using a process known as proportional iterative adjustment.

AUTOMATION POTENTIAL OF THE TASKS OF DIFFERENT GROUPS OF CIVIL SERVANTS

The results reveal that 6.4 percent of those consulted perform jobs with a high automation potential (0.7-1); 47.3 percent have medium potential (>0.3-<0.7); and the remaining 46.3 percent have low potential (0-0.3), as Figure 4.1 shows. The variable most clearly associated with the automation potential of a civil servant's functions is hierarchical level. It is to be expected that the higher the civil servant's hierarchical level, the lower the proportion of jobs with a high automation potential (see Figure 4.2).
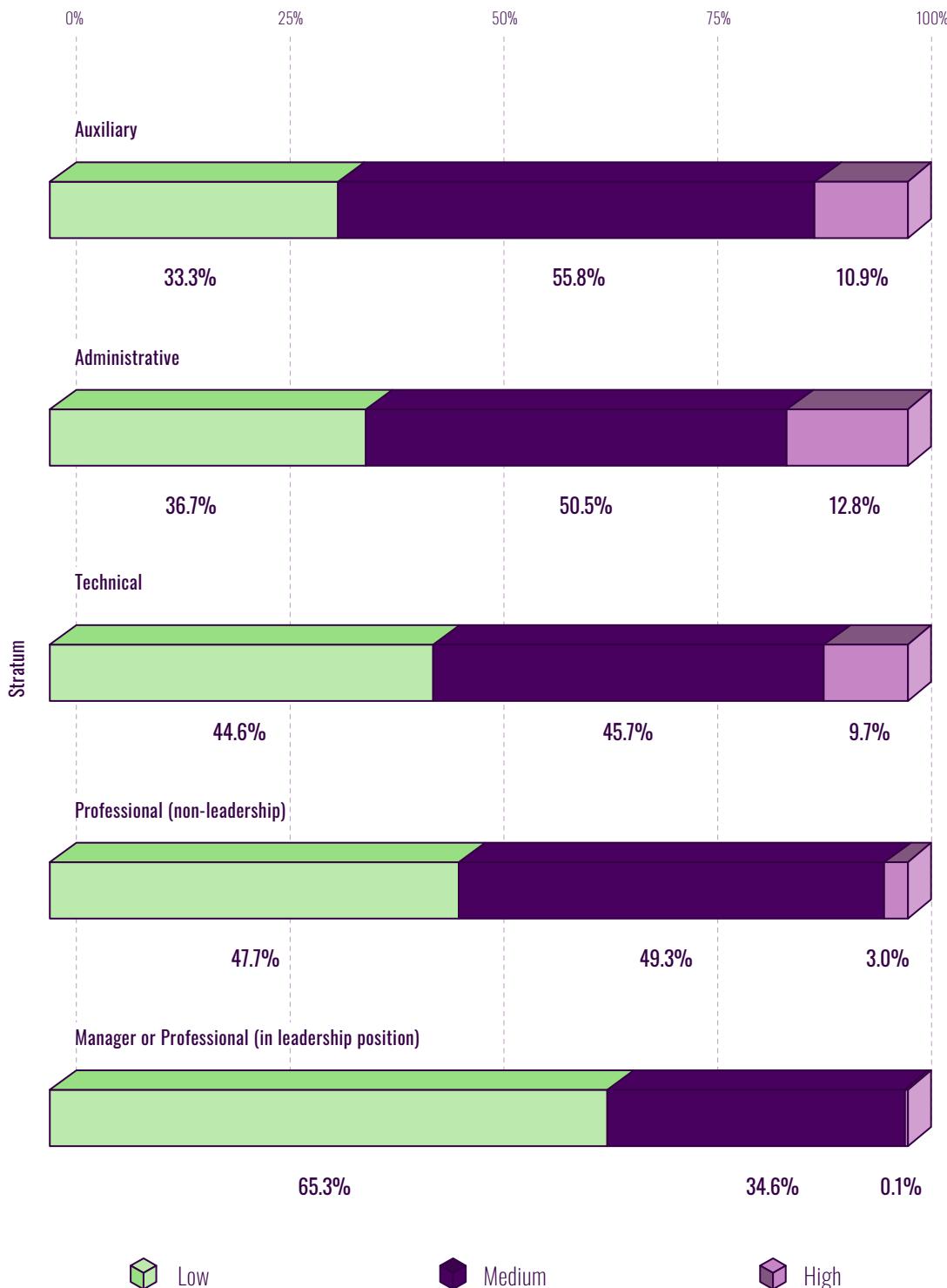
No other clear differences are noticeable based on characteristics of the respondents. The scores are similar for women and men, the different age groups, and different lengths of service (see Table A4.3.6 in Annex 4.3). Therefore, in general terms, when interpreting the figures in the following section, it can be assumed that in the segment of high API there will be a higher proportion of civil servants from low hierarchical levels, whereas in the low API segment there will a higher percentage of workers with leadership or management responsibilities.

FIGURE 4.1 Automation Potential Index (API)

Source: Authors' elaboration based on IDB-CSP (2019).

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FIGURE 4.2 Percentage of Respondents in the Three Segments of the API, by Hierarchical Level

Source: Authors' elaboration based on IDB-CSP (2019).

HOW READY IS THE CIVIL SERVICE FOR DIGITAL TRANSFORMATION?

The results presented in this section derive from the triangulation between the degree of automation potential—a proxy for the potential for disruption caused by digital transformation—and the attitudes, competencies, and perceptions of civil servants that are essential for digital transformation and the personnel management practices necessary to address them.

AMONG THOSE ATTITUDES,
COMPETENCIES, AND PERCEPTIONS ARE:

✔

Willingness and
resistance to change.

✔

The perception of the impact of digital transformation on employment.

✔

Technological self-efficacy.

✔

The perception of job stability and opportunities in the labor market.

✔

Job satisfaction, motivation,
and commitment.

THE PERSONNEL MANAGEMENT
PRACTICES STUDIED ARE:

✔

Training.

✔

The leadership of immediate supervisors.

The study analyzes these dimensions by categorizing the responses of the civil servants according to the three strata of the API (high, medium, and low). This section discusses the implications of these results for managing the change brought about by the digital transformation of government. The results are complemented by a number of regressions and correlations that can inform the design of strategies to address the challenges identified.

The results included in this section are limited to the findings that passed two robustness tests.[68] The first is that the differences between the averages of the variable in question in the three segments of the API are statistically significant.[69] The second is that the general trend that is produced by comparing those three averages is the same even when employing the two alternative models of weighting for the API subindices mentioned above.[70]

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68.   Except for the cases where the exception is specified.

69.   The test of statistical significance applied was to test χ^2 with correction, by Rao and Scott (1984).

70.   For example, the percentage of persons who agree with a certain affirmation is always higher among those with a high PAI, lower among those with medium PAI, and still lower among those with the lowest PAI.

1
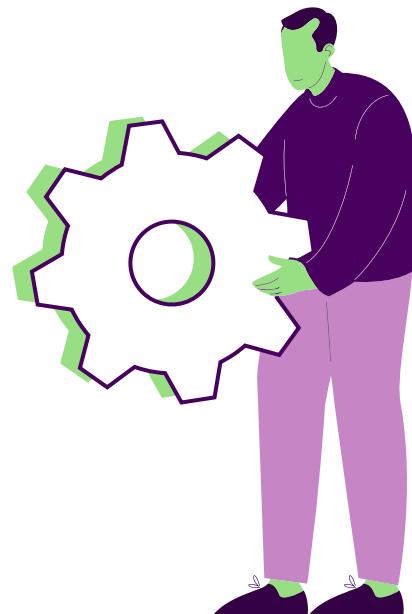
WILLINGNESS TO CHANGE

The success of the organizational reforms brought about by digital transformation, such as the implementation of new technologies, processes and ways of working, and the creation of new tasks and the elimination of others, depends to a large extent on the attitude of civil servants toward adopting the new technologies and facilitating the reform. The survey results confirmed that most civil servants are amenable to change and inclined to perform new tasks in their organizations. Fewer than half of them are willing to move to a different city within the same institution or to transfer to another institution (Figure 4.3).

The low willingness to switch institution or city coincides with a limited chance of doing so throughout the region: the mechanisms of geographical and functional mobility for civil servants are few and are administratively rigid (Cortázar et al., 2014). In the 23 LAC countries[71] where institutional assessments of the civil service were carried out between 2012 and 2019, the average score for the item "The mechanisms of functional and geographical mobility enable a flexible response to personnel redistribution requirements" was 1.48 on a scale of 0 to 5 (Pizarro et al., 2020).
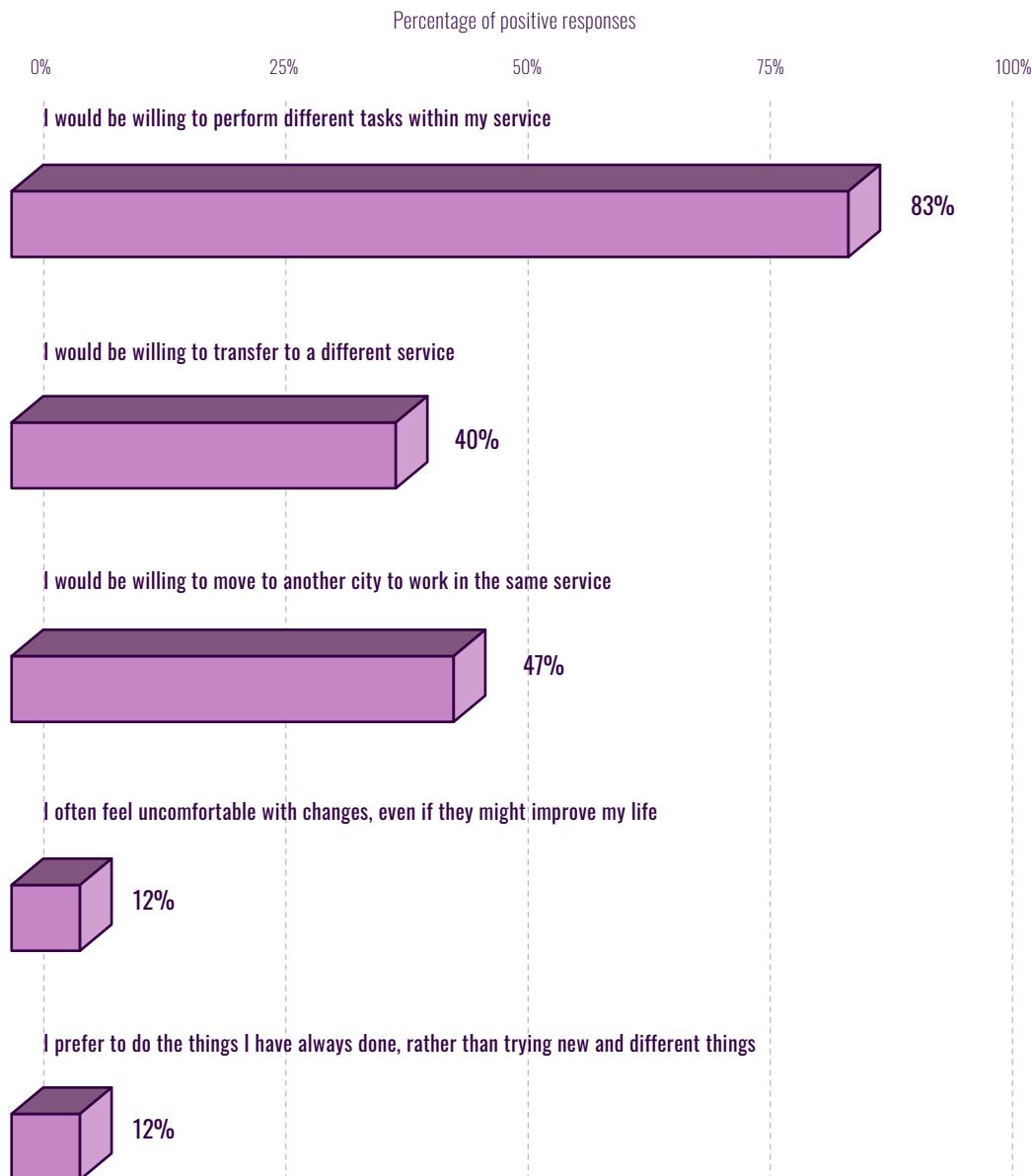
Similarly, the average score on the item "There are alternative formulas to strictly hierarchical careers, such as horizontal careers or careers in the same position, based on recognition of professional

excellence, without the need to increase the formal authority of the personnel affected" was 0.74 on a scale of 0 to 5. These results reflect a very low rate of mobility. For example, in Paraguay in 2016 only 0.7 percent of administrative career civil servants switched institutions (Dumas, 2017), while in the Dominican Republic this proportion was 2 percent (Dumas, Lafuente, and Vieyra, 2020).

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71.   All the IDB borrowing countries, except for Argentina, Belize, and Venezuela.

FIGURE 4.3 Attitude toward Change

Percentage of positive responses

I would be willing to perform different tasks within my service

83%

I would be willing to transfer to a different service

40%

I would be willing to move to another city to work in the same service

47%

I often feel uncomfortable with changes, even if they might improve my life

12%

I prefer to do the things I have always done, rather than trying new and different things

12%
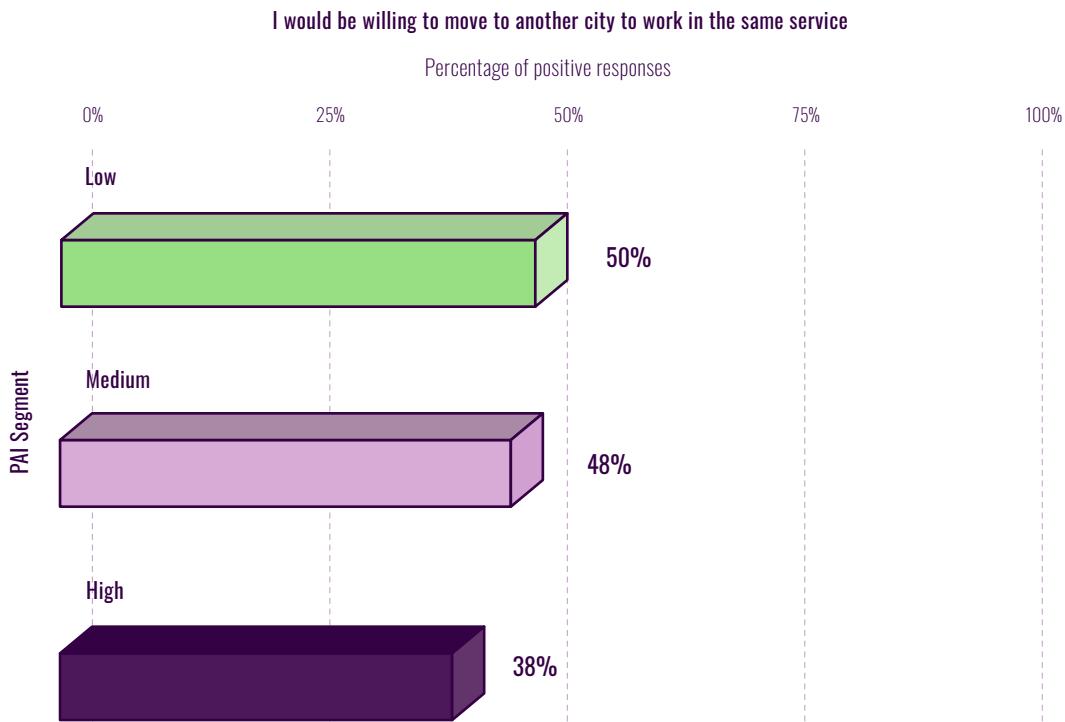
Source: Authors' elaboration based on IDB-CSP (2019).

Note: The results shown in this and in all the following figures showing the attitudes, competencies, and perceptions of civil servants, as well as in those relating to staff management practices, include the percentage of respondents who report that they either agree or strongly agree with the affirmation.

When the results are analyzed according to the segment of automation potential, differences emerge in the respondents' preferences toward specific changes in the job context: the higher the API of the civil servants' jobs, the lower the willingness to move to another city for employ-ment reasons but continue working with the same institution (see Figure 4.4) or to perform different tasks (Figure 4.5). Likewise, those least willing to transfer to another institution are the people whose jobs record the highest automation poten-tial (see Figure 4.6).
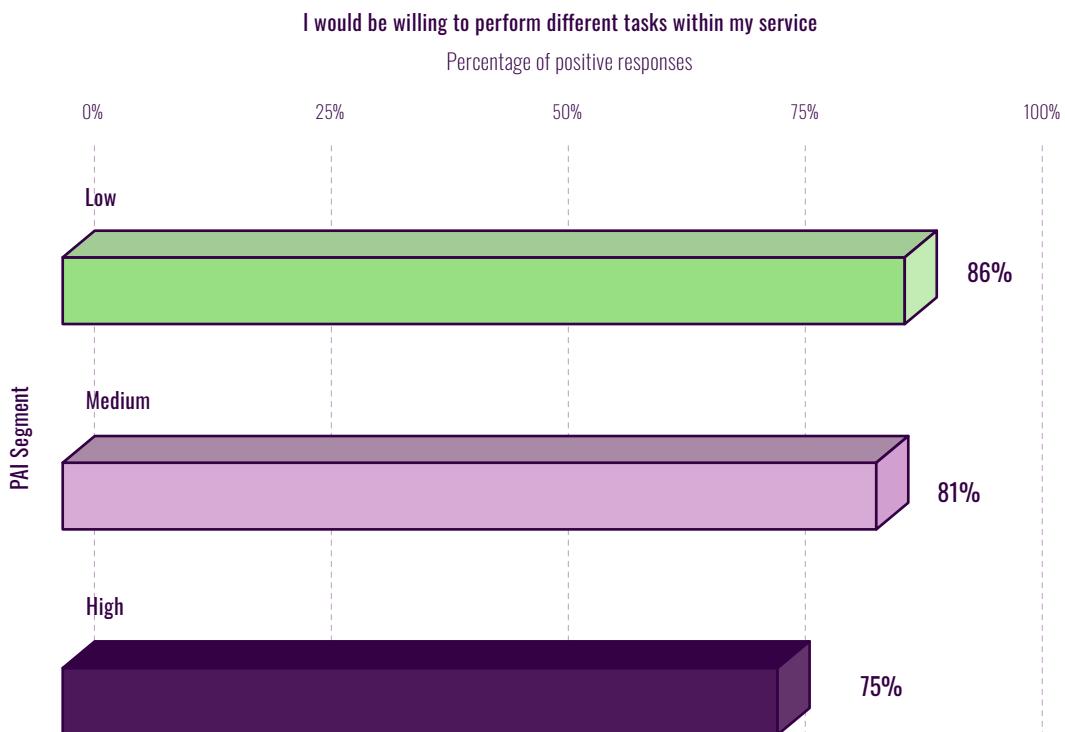
FIGURE 4.4 Willingness to Move to Another City, by Level of Automation Potential

I would be willing to move to another city to work in the same service

Percentage of positive responses
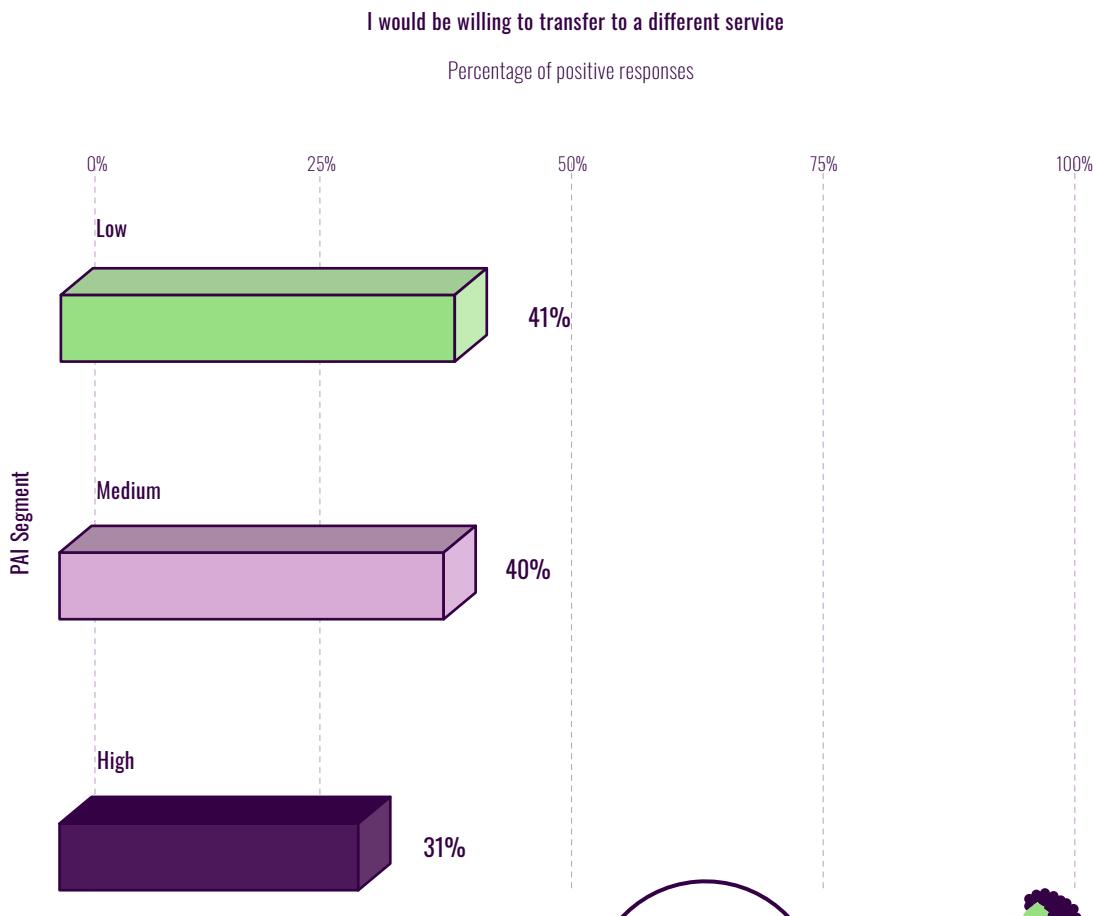
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.5 Willingness to Perform Different Tasks, by Level of Automation Potential

I would be willing to perform different tasks within my service

Percentage of positive responses
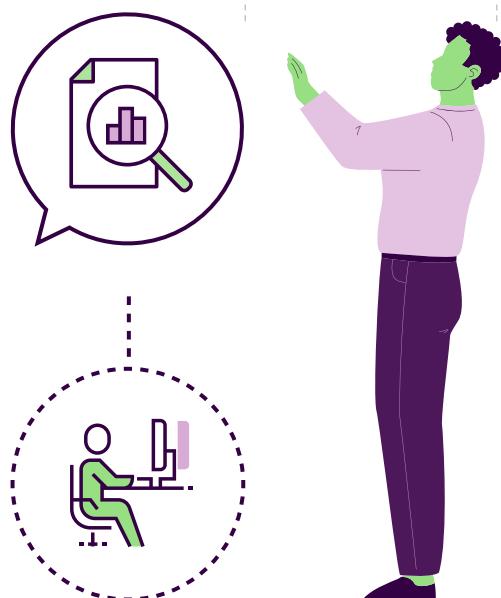
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.6 Willingness to Transfer to a Different Institution, by Level of Automation Potential

I would be willing to transfer to a different service

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

There are effective strategies for stimulating greater willingness to change (see Table A4.2.1 and Figure A4.2.1 in Annex 4.2). Specifically, training has a positive and statistically significant association with respondents' willingness to change. Training is also highly correlated with technological self-efficacy. Thus, investing in training for civil servants would seem to be a reasonable strategy for promoting greater willingness to change.[72]

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72. See Table A4.2.1 in Annex 4.2 for details about this and other regressions mentioned in this chapter. This annex also includes a correlogram of all the attitudes, competencies, and perceptions measured in the survey and the PAI. Both the regressions and the correlations utilize aggregate indices that correspond to the simple average of all the questions included for the respective management practices, attitudes, competencies, and perceptions, rescaled from 0 percent to 100 percent (agree entirely = 100 percent; agree = 75 percent; neither agree nor disagree = 50 percent; disagree = 25 percent; disagree entirely = 0 percent).
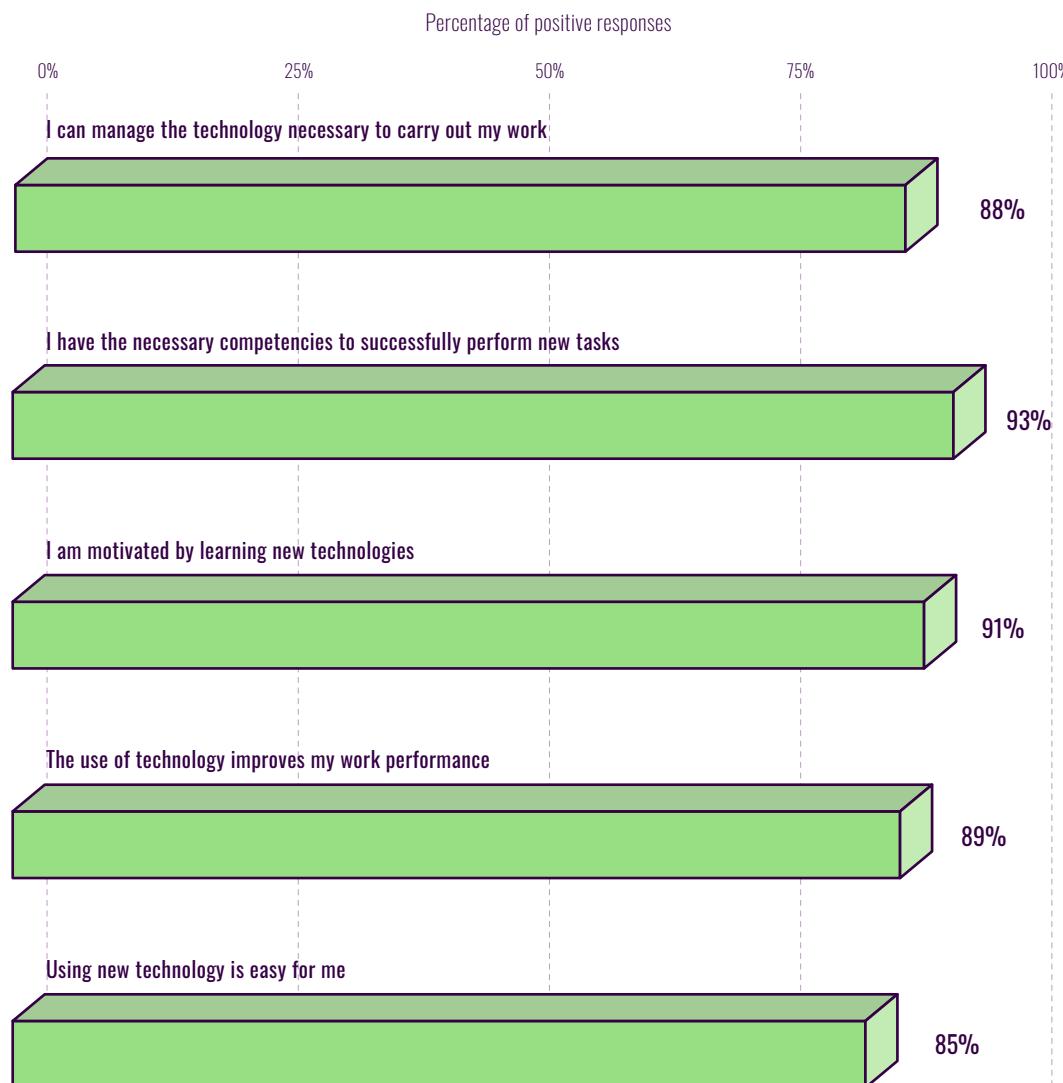
2
PERCEPTION OF TECHNOLOGICAL ABILITIES

Technological competencies, as well as the motivation and the capacity to learn to use new IT tools, are fundamental in a context of digital transformation. In this respect, the survey results are encouraging: most civil servants reported high technological self-efficacy (a perception of high technological abilities) (Figure 4.7).

FIGURE 4.7 Technological Self-Efficacy or Perception of Technological Abilities

Percentage of positive responses

I can manage the technology necessary to carry out my work — 88%

I have the necessary competencies to successfully perform new tasks — 93%

I am motivated by learning new technologies — 91%

The use of technology improves my work performance — 89%

Using new technology is easy for me — 85%
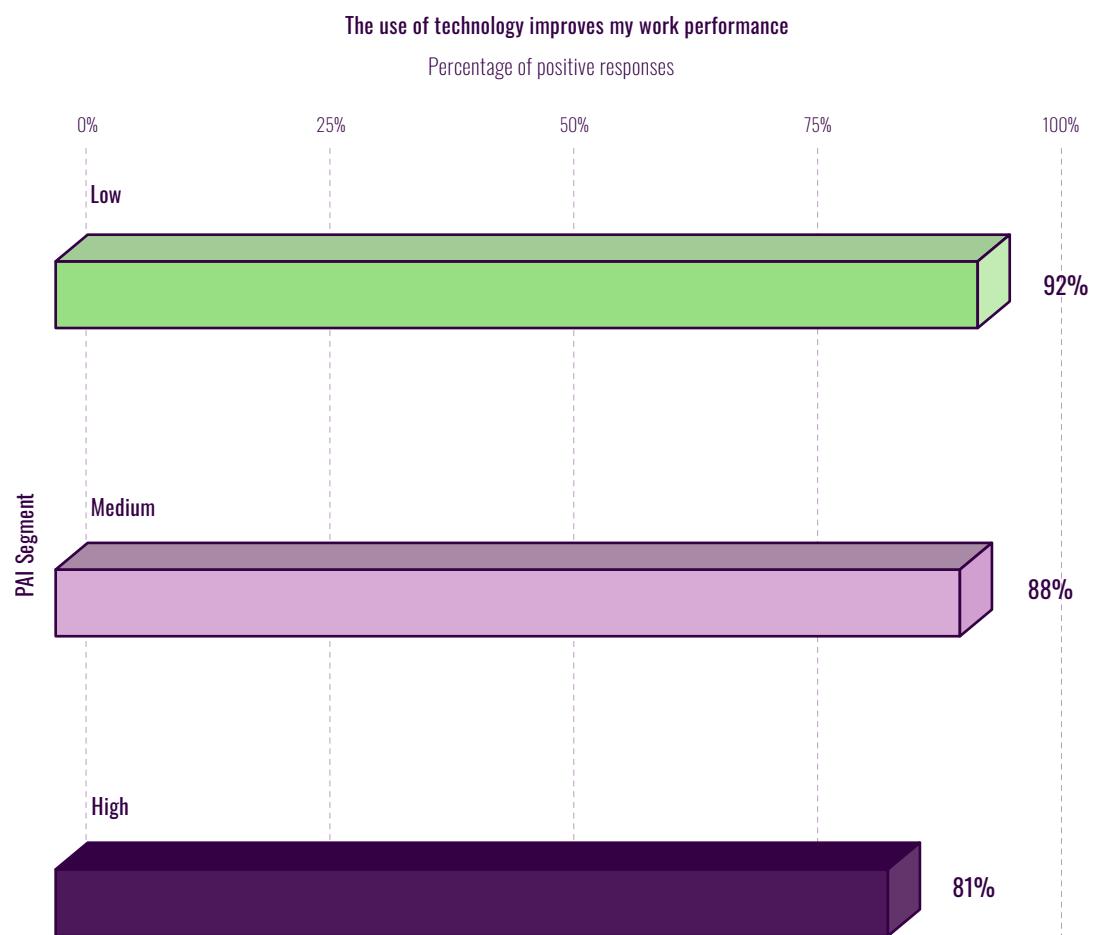
Source: Authors' elaboration based on IDB-CSP (2019).

This is consistent with responses to a similar survey of Colombian public employees: 94 percent believe that they already have the technological skills needed to carry out their current job tasks (DANE, 2020).[73] However, all of the questions relative to this issue show a similar trend: the higher the API, the lower the perception of technological skills and the more limited the abilities to perform new functions at work. Those employees with the highest API report a lower appreciation of technology for carrying out their work than those with a low score (Figure 4.8) and also lower motivation and ability to learn new technologies (Figures 4.9 and 4.10).[74] Moreover, civil servants whose functions have the highest automation potential are less likely to report that they possess the competencies to successfully perform new tasks (Figure 4.11).

FIGURE 4.8 Appreciation of Technology to Improve Job Performance, by Level of Automation Potential

The use of technology improves my work performance

Percentage of positive responses
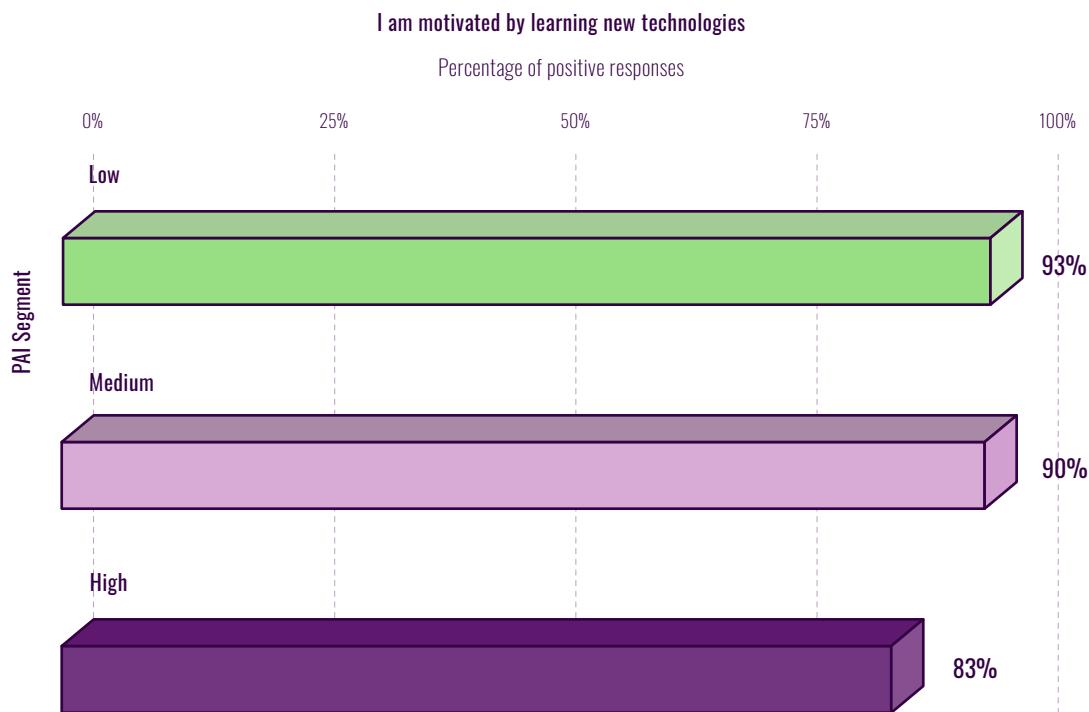
Source: Authors' elaboration based on IDB-CSP (2019).

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73. Certain segments of civil servants record less agreement with this statement. Of those with the lowest level of education (from no formal education to secondary education), 17 percent believe they lack the necessary computing skills. This is also true for older civil servants: 13 percent of those 61 or older held the same position.
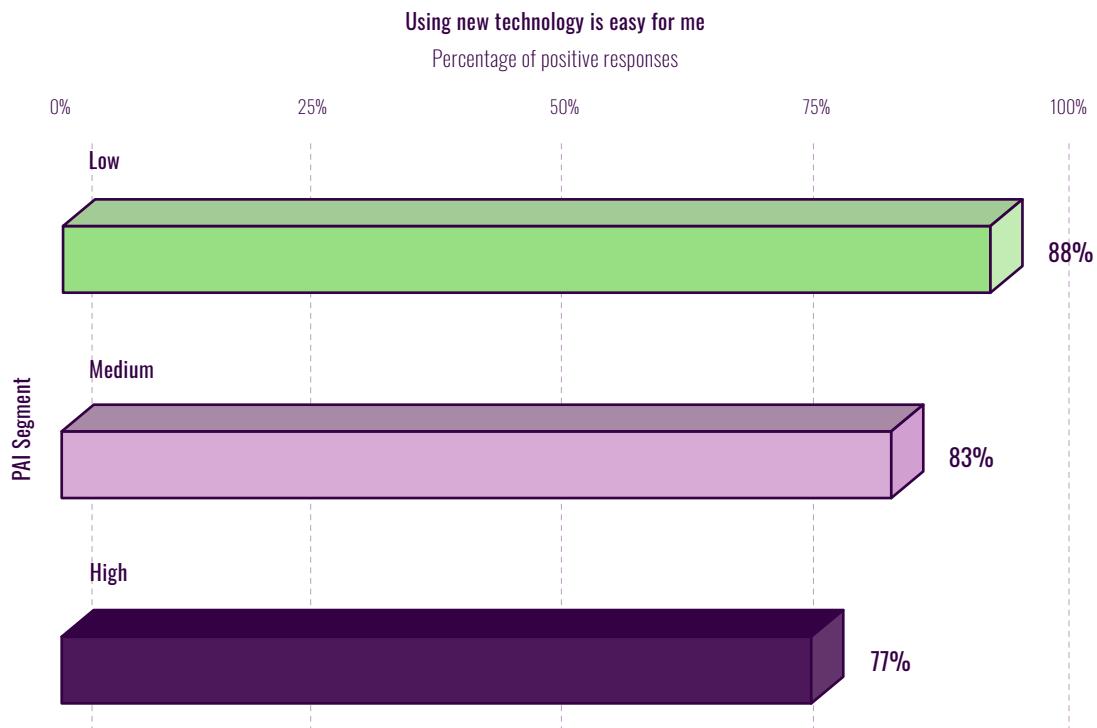
74. The management of technology for work performance by civil servants also declines as the rate of automation potential increases, although less so than other items of technological self-efficacy (see Figure A4.3.5 in Annex 4.3).

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FIGURE 4.9 Motivation to Learn to Use New Technologies, by Level of Automation Potential

I am motivated by learning new technologies

Percentage of positive responses
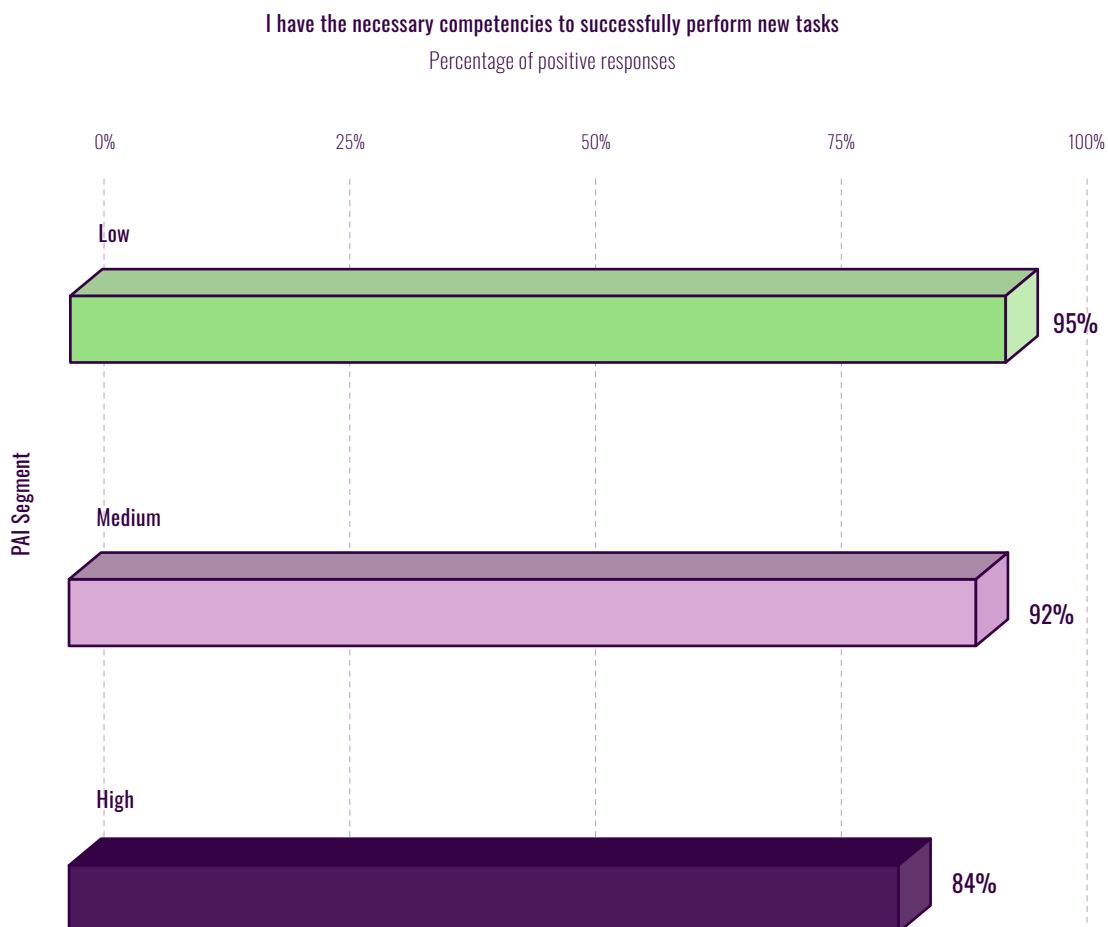
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.10 Ability to Learn a New Technology, by Level of Automation Potential

Using new technology is easy for me

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.11 Ability to Perform New Tasks, by Level of Automation Potential

I have the necessary competencies to successfully perform new tasks
Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

THE SURVEY RESULTS POINT TO SOME POSSIBLE LINES OF ACTION FOR INCREASING TECHNOLOGICAL SELF-EFFICACY THAT WOULD BE ESPECIALLY IMPORTANT FOR WORKERS WHOSE JOBS HAVE A HIGH AUTOMATION POTENTIAL.

Both training and good leadership practices of immediate supervisors have a positive and statistically significant association with technological self-efficacy (see Table A4.2.1 in Annex 4.2). This finding suggests that the training activities in which civil servants participated effectively motivated them and improved their technology management skills. It also underscores the im-

portance of leadership practices for encouraging technological self-efficacy among civil servants. Similarly, job satisfaction, motivation, and commitment are highly positively correlated with technological self-efficacy (see Figure A4.2.1 in Annex 4.2). Thus, initiatives that strengthen these attitudes among civil servants can improve their technological competencies.

3
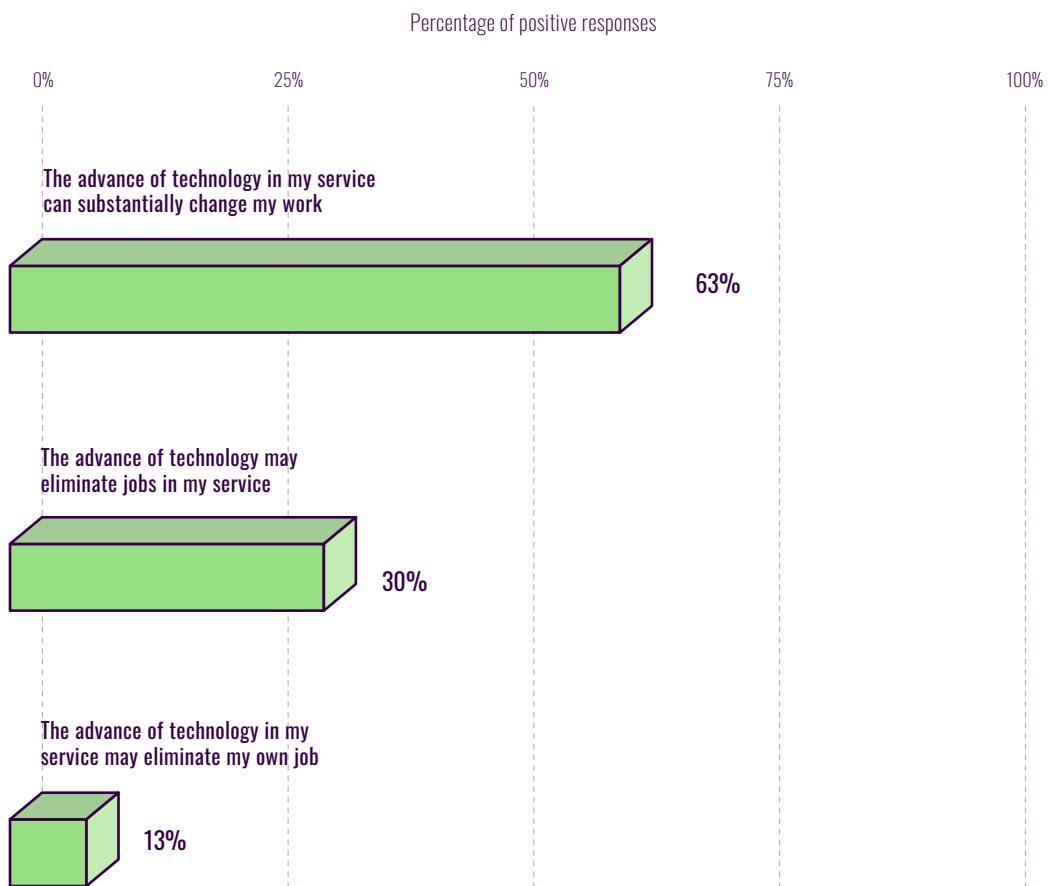
PERCEPTION OF THE IMPACT OF TECHNOLOGY ON EMPLOYMENT

Perceptions of the impact of digital transformation on employment can affect the change management necessary for this type of reform in several ways. First, those who hold positive attitudes with respect to the utility and ease of using technologies are more likely to adopt new technologies at work (Davis, Bagozzi and Warshaw, 1989; Greenwood, 1997). Second, a higher perception of job instability tends to be associated with higher resistance to potential organizational changes (see, for example, Babalola, 2013; Chawla and Kelloway, 2004; Vakola, 2014). In this vein, the data from the survey reveal a relatively optimistic scenario: as shown in Figure 4.12, most of the civil servants who responded to the survey believe that technological advances can change their work (63 percent), whereas a minority affirm that this can make jobs in their institution disappear (30 percent), and even fewer respondents believe that it could make their jobs disappear altogether (13 percent). These three results do not vary substantially when contrasted according to the API of the civil servants' jobs.[75] Awareness of the possible changes to work caused by digital transformation observed in the respondents, coupled with the positive results of technological self-efficacy and significant willingness to adopt changes to tasks discussed in previous sections, suggests that there is openness to change as long as the jobs remain stable.

---

75. The highest perceptions that technological advances pose a threat to an employee's own job or that of their colleagues, are found in the segments with a high PAI (see Figures A4.3.8 and A4.3.9 in Annex 4.3). The belief that technology can substantially change the employee's own work increases among those segments whose jobs have the greatest automation potential (see Figure A4.3.10 in Annex 4.3). However, there are fewer substantial differences in this variable than in those of other variables highlighted in the chapter.

FIGURE 4.12 Perception of the Impact of Digital Transformation on Employment

Percentage of positive responses

The advance of technology in my service
can substantially change my work

63%

The advance of technology may
eliminate jobs in my service

30%

The advance of technology in my
service may eliminate my own job

13%
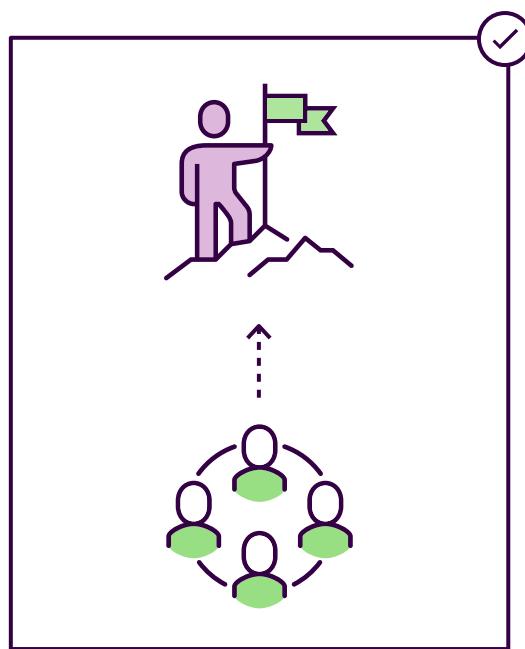
Source: Authors' elaboration based on IDB-CSP (2019).

Although the survey results suggest that civil servants do not view technological innovation as a threat to employment, it must be managed in such a way as to reduce resistance to change.

STRENGTHENING THE LEADERSHIP PRACTICES OF IMMEDIATE SUPERVISORS WOULD BE AN EFFECTIVE MEASURE FOR THIS PURPOSE.
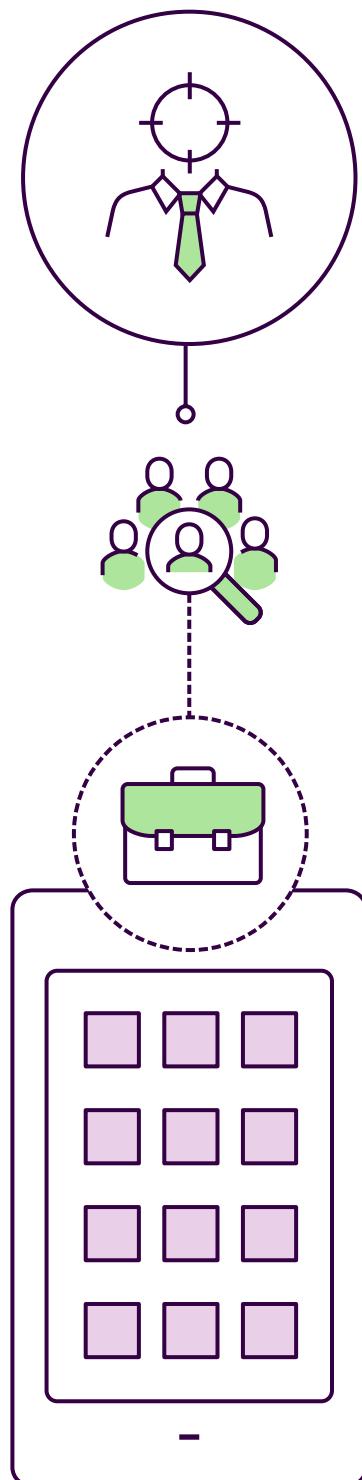
This variable turned out to have a negative and statistically significant relationship with the notion of threat to employment due to the advancement of technology (see Table A4.2.1 in Annex 4.2).

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4
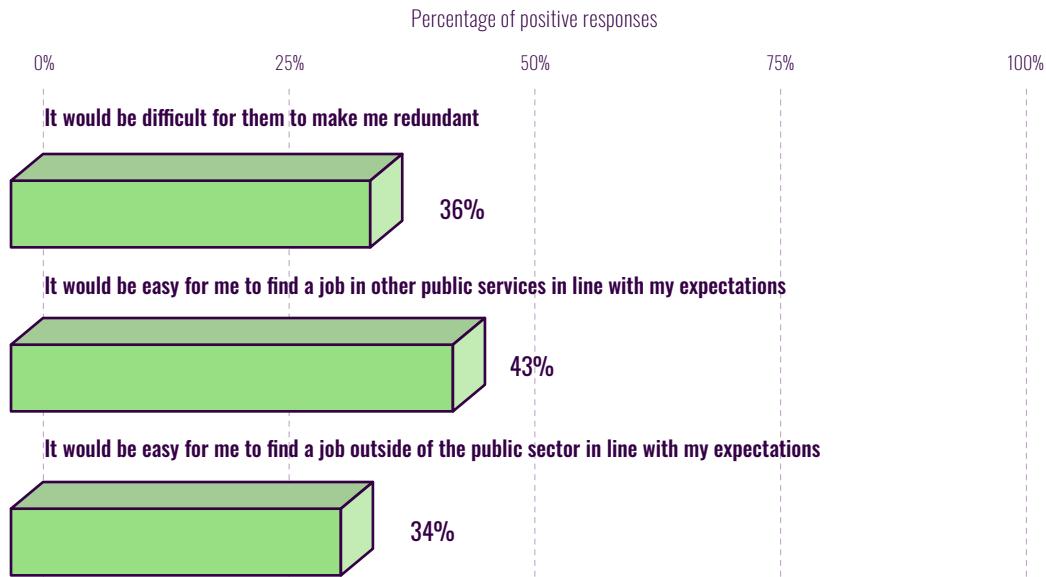
PERCEPTION OF JOB STABILITY AND PROSPECTS IN THE JOB MARKET

Better job stability and the prospect of future job opportunities have a positive effect on the attitudes of civil servants toward organizational change (Chawla and Kelloway, 2004; Babalola, 2013; Wanberg and Banas 2000; Vakola, 2014). Therefore, it is likely that anyone who perceives a higher risk of losing their job will oppose the changes caused by digital transformation that completely or partially changes their work. A similar aversion might arise among those who fear it would be difficult to find a new job. The survey shows that Chilean civil servants perceive both a low degree of job stability and few job opportunities: only a minority feel that it would be difficult to relieve them of their duties or that they would find it easy to find work in other institutions in either the public or the private sectors (Figure 4.13). The belief about low job stability does not differ substantially when the results are contrasted according to the level of automation potential (Figure 4.14). Nonetheless, civil servants whose jobs score the highest API tend to be less inclined to perceive that it would be easy for them to find work in accordance with their expectations, whether inside or outside of the government.[76] This is consistent with the finding that, in developing countries, civil servants at a low hierarchical level tend to be paid more than they would earn in the private sector (Gindling et al., 2019).

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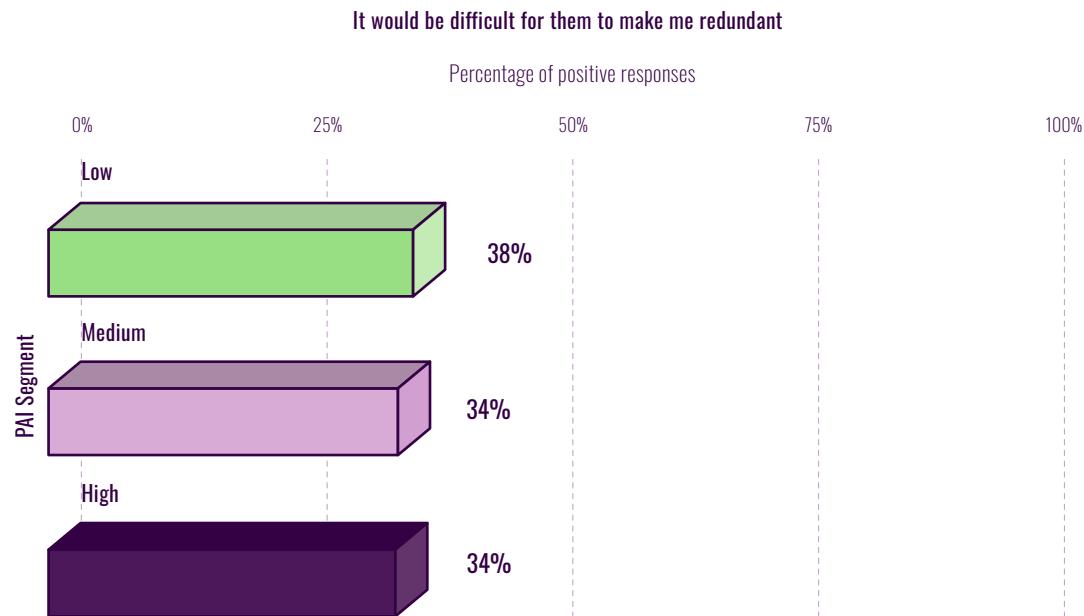
76. In particular, as the range of potential automation of civil servants' occupations increases, the proportion of civil servants that state that it would be easy to find a suitable job in other public services or outside the public sector decreases (see Figures A4.3.6 and A4.3.7 in Annex 4.3).

FIGURE 4.13 Perceptions of Job Stability and Job Opportunities

Percentage of positive responses

It would be difficult for them to make me redundant — 36%

It would be easy for me to find a job in other public services in line with my expectations — 43%

It would be easy for me to find a job outside of the public sector in line with my expectations — 34%

Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.14 Perception of Job Stability by Level of Automation Potential

It would be difficult for them to make me redundant

Percentage of positive responses

PAI Segment

Low — 38%

Medium — 34%

High — 34%
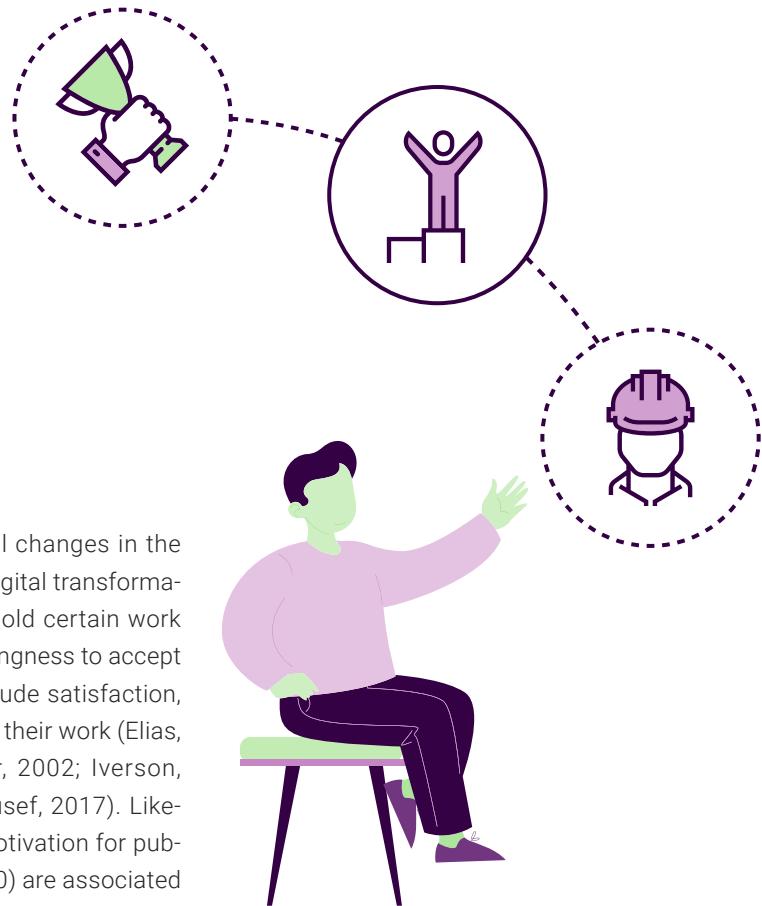
Source: Authors' elaboration based on IDB-CSP (2019).

Complementary analysis of the relationship between variables suggests specific management practices for improving civil servants' perceptions of the chances of being dismissed and finding a new job (see Table A4.2.1 in Annex 4.2). These notions have a positive relationship with their willingness to change. Training and good leadership practices of immediate supervisors have a positive and statistically significant relationship with the perception of job stability and with respondents' perception of prospects in the labor market.

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5

MOTIVATION, COMMITMENT, AND JOB SATISFACTION

Driving effective organizational changes in the public sector that derive from digital transformation requires civil servants to hold certain work attitudes, such as a greater willingness to accept those changes. These also include satisfaction, motivation, and commitment to their work (Elias, 2009; Herscovitch and Meyer, 2002; Iverson, 1996; Madsen et al., 2005; Yousef, 2017). Likewise, specific dimensions of motivation for public service (Perry and Wise, 1990) are associated with greater support for organizational changes by civil servants (Wright et al., 2002). In fact, the job motivation of the civil service respondents in Chile has a positive relationship with their willingness to change (Figure A4.2.1 in Annex 4.2).

Transformation processes in institutions can also affect certain attitudes toward work. Changes perceived as positive can increase civil servants' commitment to their organization (Fedor et al., 2006), whereas resistance to specific changes can lead to a decrease in job satisfaction when these changes are realized (Oreg, 2006; Wanberg and Banas, 2000). It is therefore necessary to ask whether civil servants report the degree of job satisfaction, motivation, and commitment required to tackle the changes implied by digital transformation in the public services, especially among those who will be most affected by those modifications.

In general, respondents report high degrees of motivation (77 percent), commitment (93 percent), and job satisfaction (88 percent), as Figure 4.15 shows. Nonetheless, there are considerable differences depending on the API level, especially for the first two attitudes mentioned: those who perform functions with the highest automation potential tend to be less motivated (see Figure 4.16) and less committed (see Figure 4.17) to their work.[77] This inverse relationship between job satisfaction, motivation, and commitment and the automation potential is also reflected in their high negative correlations with the API (Figure A4.2.1 in Annex 4.2). Both trends reveal less willingness to change among civil servants whose jobs are most likely to be automated, according to the lessons gleaned from the literature.

---

77. The job satisfaction of those surveyed also decreased with the increase in the automation potential, although in magnitudes lower than the two other attitudes addressed (see Figure A4.3.1 in Annex 4.3).

The survey results seem to demonstrate that both good leadership of immediate supervisors and civil servant training could help tackle the low degrees of job satisfaction, motivation, and commitment shown by certain groups of public sector employees. Both personnel management practices have a positive and statistically significant association with these three work attitudes, which, in turn, coincides with the findings from other similar studies applied to civil servants in Chile (Schuster et al., 2019).
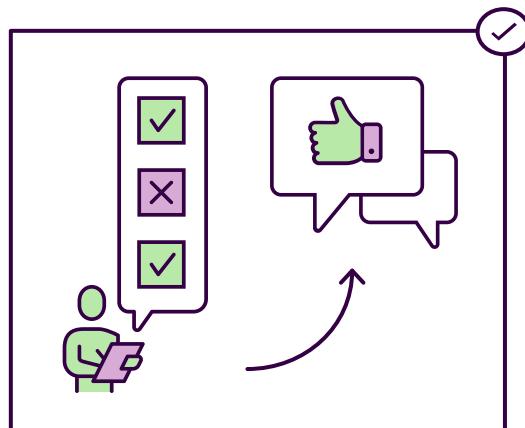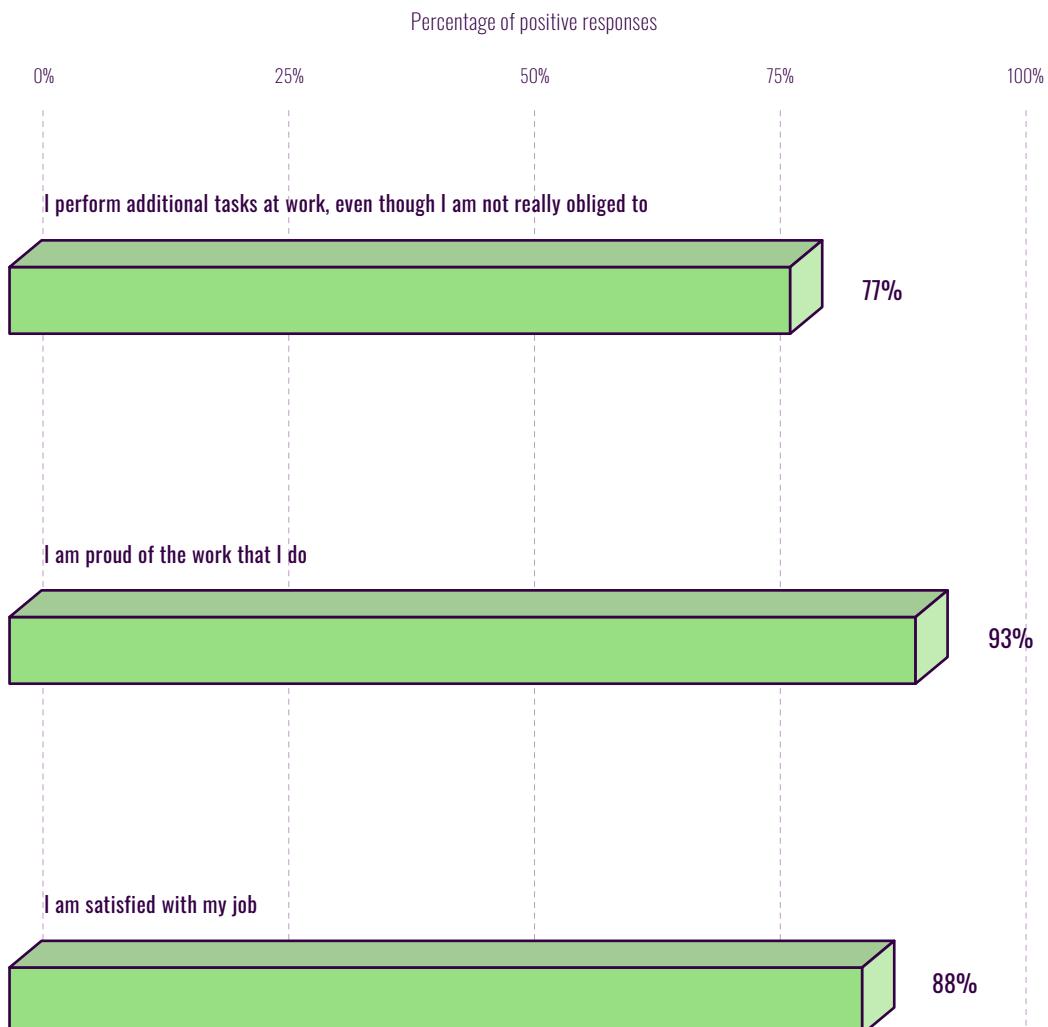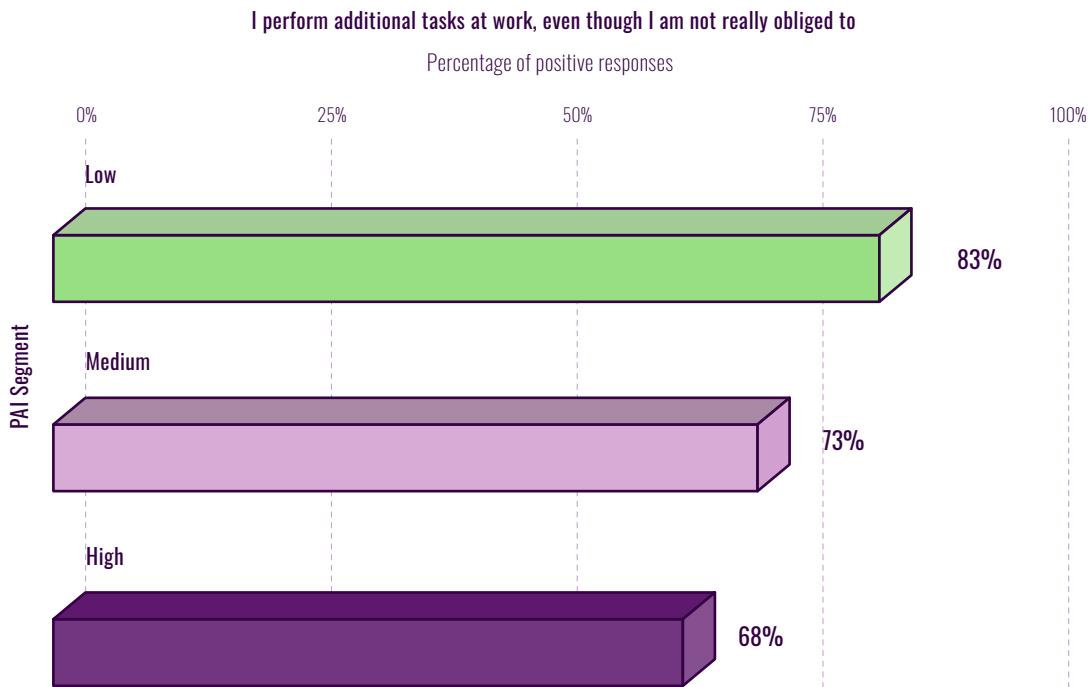
FIGURE 4.15 Motivation, Commitment, and Job Satisfaction

Percentage of positive responses

I perform additional tasks at work, even though I am not really obliged to

77%

I am proud of the work that I do

93%

I am satisfied with my job

88%
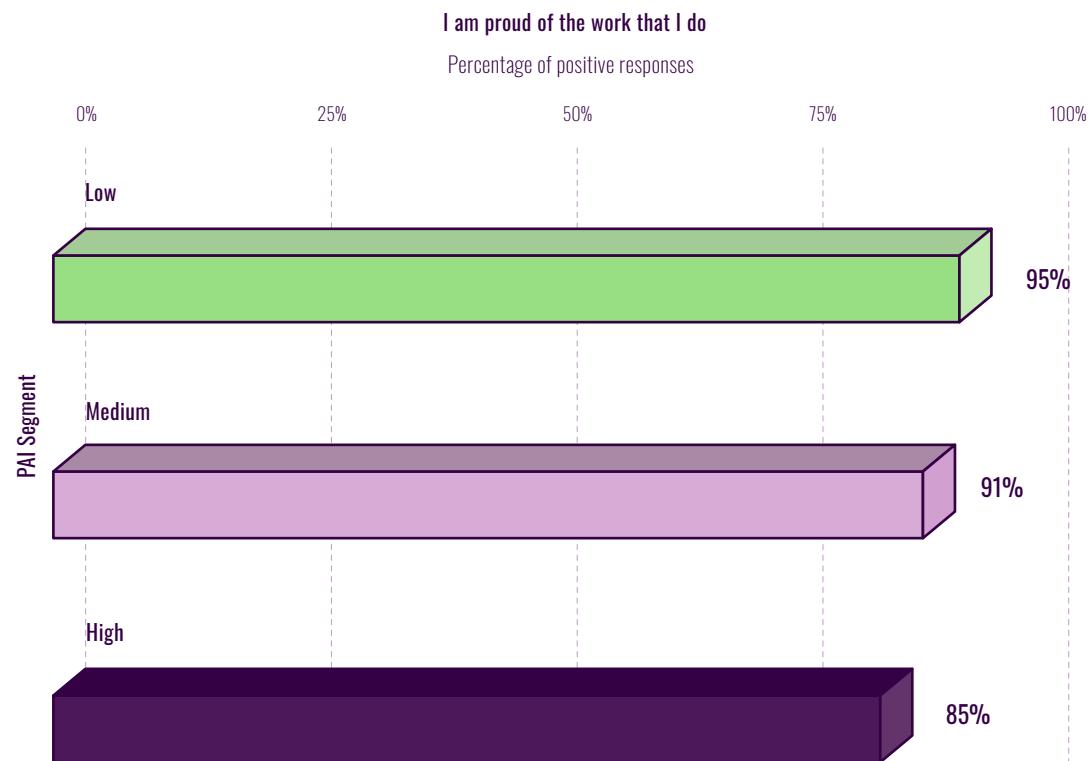
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.16 Work Motivation, by Level of Automation Potential

I perform additional tasks at work, even though I am not really obliged to

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.17 Work Commitment, by Level of Automation Potential

I am proud of the work that I do

Percentage of positive responses
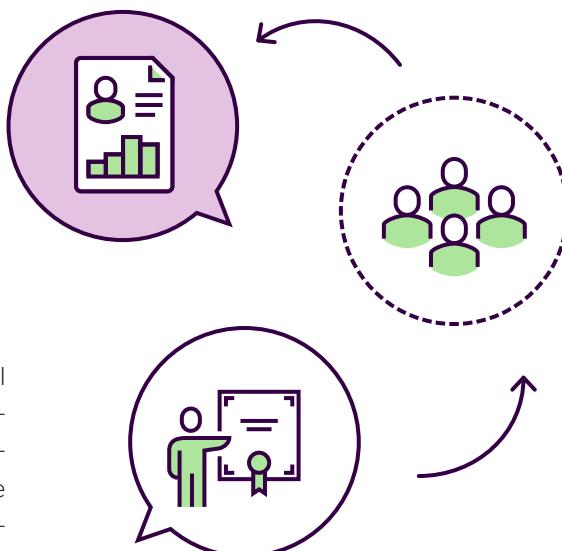
Source: Authors' elaboration based on IDB-CSP (2019).

6

TRAINING

Training is one of the main ways to help civil servants adapt to the effects of digital transformation, since it helps those whose roles are affected by this process to assume new tasks. The data from the survey carried out in Chile, complemented by other sources, show that, in general, training is rarely given, especially in the areas of technology, and that the training given is not properly geared toward digital transformation.

The survey reveals that fewer than half (46 percent) of the civil servants surveyed feel that they received adequate training when technological changes that affected their work were introduced (Figure 4.18). Although a higher proportion of civil servants reported that they had received some sort of job training (64 percent) in the previous year, only 25 percent reported having participated in training sessions related to technology or computing. These results coincide with the evidence that shows low levels of training in Chile and other countries in the region: 57 percent of Chilean civil servants report that they do not get the training needed to do their work effectively (Schuster et al., 2019), and in Colombia, 38 percent of civil servants report that their organization fails to provide training in the ICT skills they need to perform their jobs (DANE, 2020). Regionally, a survey of Latin American public managers (IDB-COPLAC, 2019) revealed that 54 percent of civil servants had attended only one job training session in the last year.
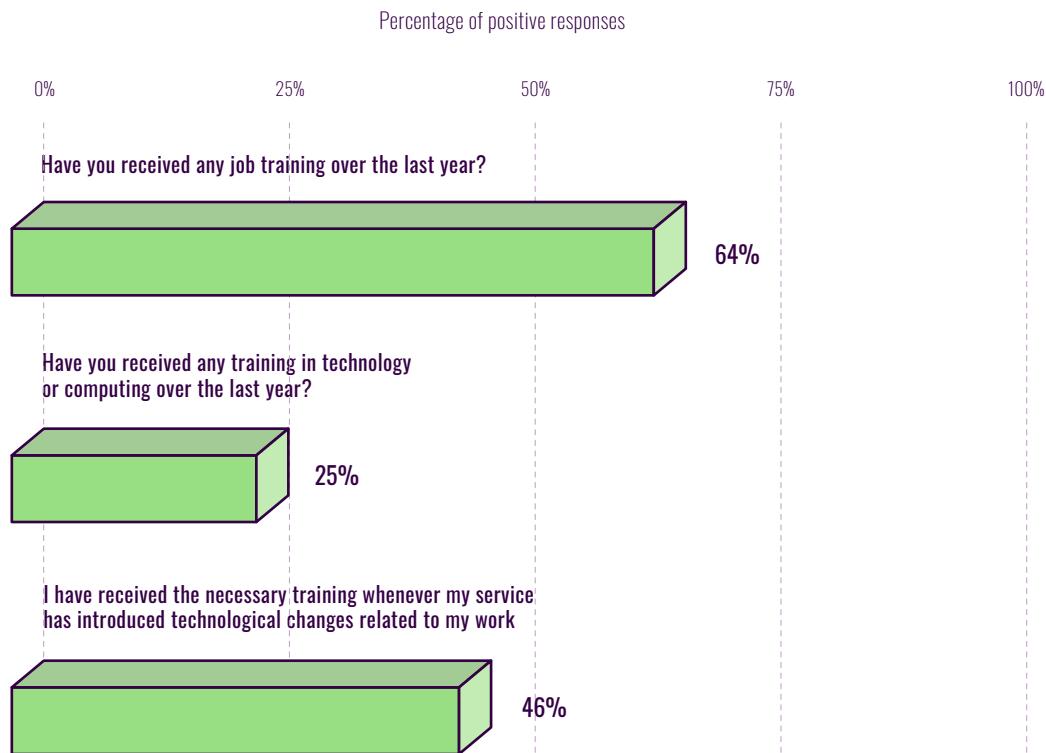
All of the training indices decrease as a job's automation potential increases. The gap between the extreme levels of API with respect to training in technology and computing (Figure 4.19) is especially pronounced. Despite being a key element for digital transformation, training seems to be much less accessible for the civil servants who need it the most: those who carry out functions with a high automation potential.[78] Complementary evidence suggests that the provision of training is not always a strategic decision: at the regional level, 62 percent of the managers who responded to the survey reported that the training sessions received do not emerge as a result of an analysis of the specific needs of the team (IDB-COPLAC, 2019). This study also shows that fewer than half of the job training sessions given (49.6 percent) were helpful in the team's activities. This result is consistent with the country civil service assessments carried out by the IDB for the period 2012 to 2019.[79] Many of which revealed a failure to detect real training needs and a disconnect between the training sessions provided and the strategic objectives established.

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78.   Similar trends are seen when contrasting the results of general training according to the PAI levels and using this same segmentation for the evaluation by civil servants of the training sessions received in contexts of technological change (see Figure s A4.3.2 and A4.3.3 in Annex 4.3).
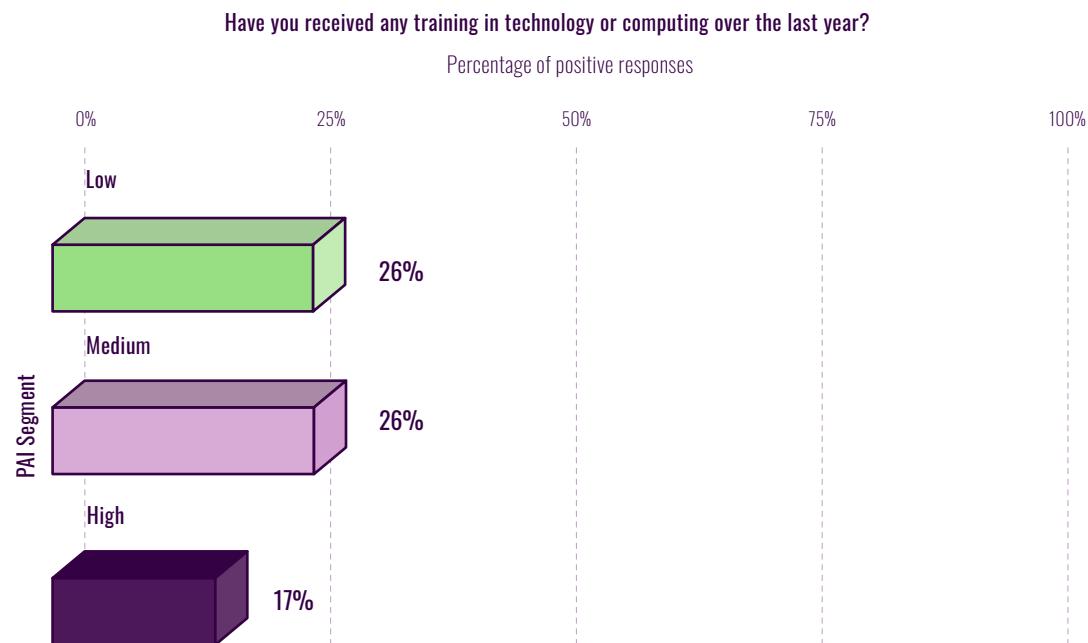
79.   All the public reports are available at: publicaciones.iadb.org.

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FIGURE 4.18 Training

Percentage of positive responses

Have you received any job training over the last year?
64%

Have you received any training in technology
or computing over the last year?
25%

I have received the necessary training whenever my service
has introduced technological changes related to my work
46%

Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE 4.19 Participation in Training in Technology, by Level of Automation Potential

Have you received any training in technology or computing over the last year?

Percentage of positive responses

Low
26%

Medium
26%

High
17%

PAI Segment

Source: Authors' elaboration based on IDB-CSP (2019).

7
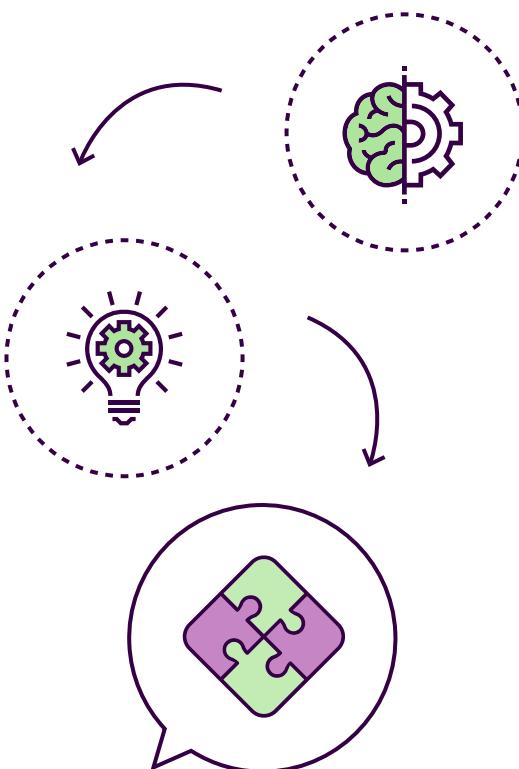
LEADERSHIP FROM SUPERVISORS

Leadership plays a fundamental role in the changes brought about by digital transformation. Communicating clearly about upcoming scenarios, addressing concerns, motivating people to participate, and driving the necessary reforms are all important leadership practices. The literature shows that leadership is an important determinant of openness to change (Devos and Buelens, 2003; Furst and Cable, Oreg, 2006; Szabala, 2007), especially if it is transformational (Boomer, Rich, and Rubin, 2005; Oreg and Berson, 2011). With these practices, leaders can guide the behavior of their subordinates, change their assumptions and attitudes, and make them aware of the organizational objectives, thereby encouraging them to pursue these collective goals (Wright and Pandey, 2011).

In general, the civil servants interviewed in Chile report a positive perception of the leadership practices of their immediate supervisors (Figure 4.20).

THE MAJORITY STATE THAT THEIR BOSS TRANSMITS MESSAGES THAT MAKE THEM FEEL PROUD TO BELONG TO THEIR INSTITUTION (58 PERCENT), ENTHUSIASTIC ABOUT ITS MISSION AND VISION (61 PERCENT),

and that their boss leads by example (64 percent). These positive results contrast with those detected in the institutional assessments of the civil service conducted by the IDB between 2012 and 2019.

How Ready Is the Civil Service for Digital Transformation?
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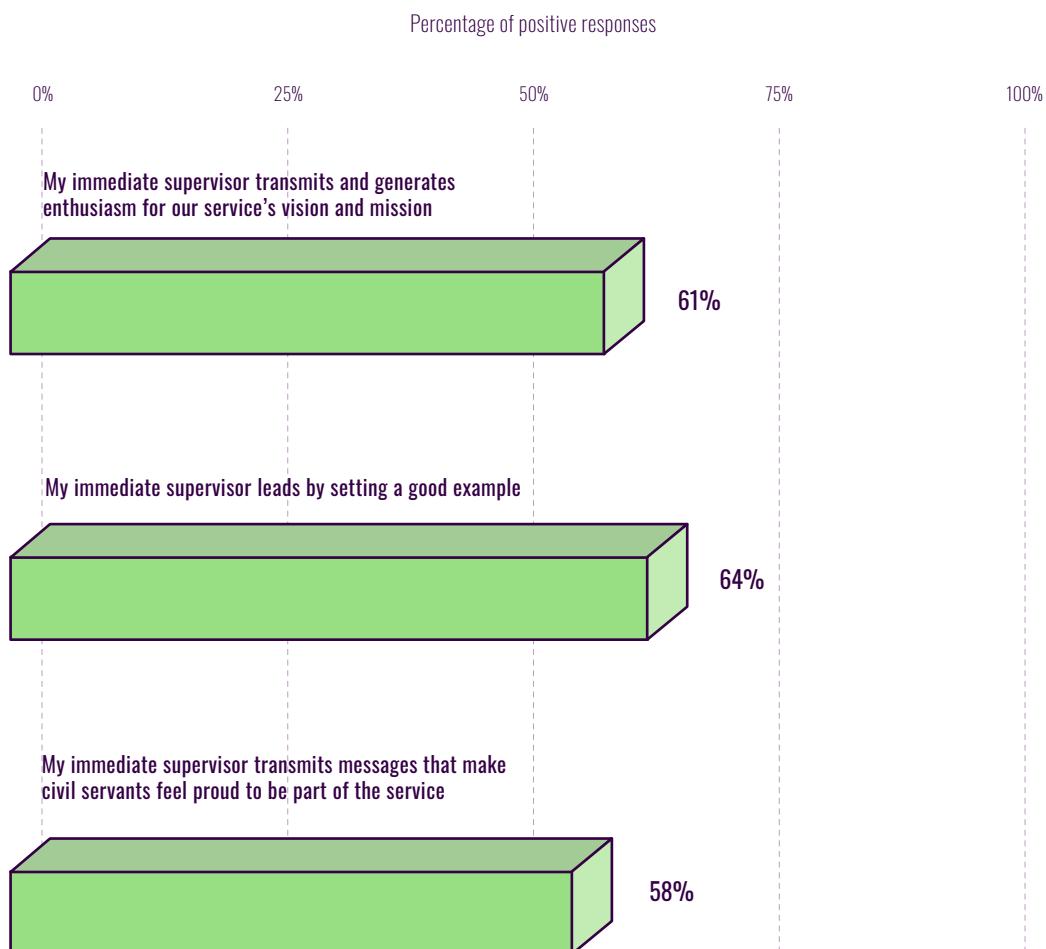
Regarding the evaluation of whether "managers take responsibility and adequately exercise their responsibilities as managers of the persons within their sphere of formal authority," the average score was 1.48 on a scale of 0 to 5. Chile's score from the 2013 assessment was 3 points out of 5.[80]

Nonetheless, there are significant variations by level of automation potential, especially with respect to practices that relate to supervisors' capacity to motivate their teams. The higher the level of the API, the lower the perception that immediate supervisors communicate messages that inspire pride among their employees (Figure 4.21) and motivate them to pursue their organization's mission and vision (Figure 4.22).[81] This underlines the need for leaders to pay special attention to their interactions with those workers whose jobs have a high automation potential in contexts of digital transformation.

FIGURE 4.20 Perceptions of the Leadership Practices of Immediate Supervisors

Percentage of positive responses

My immediate supervisor transmits and generates enthusiasm for our service's vision and mission — 61%

My immediate supervisor leads by setting a good example — 64%

My immediate supervisor transmits messages that make civil servants feel proud to be part of the service — 58%
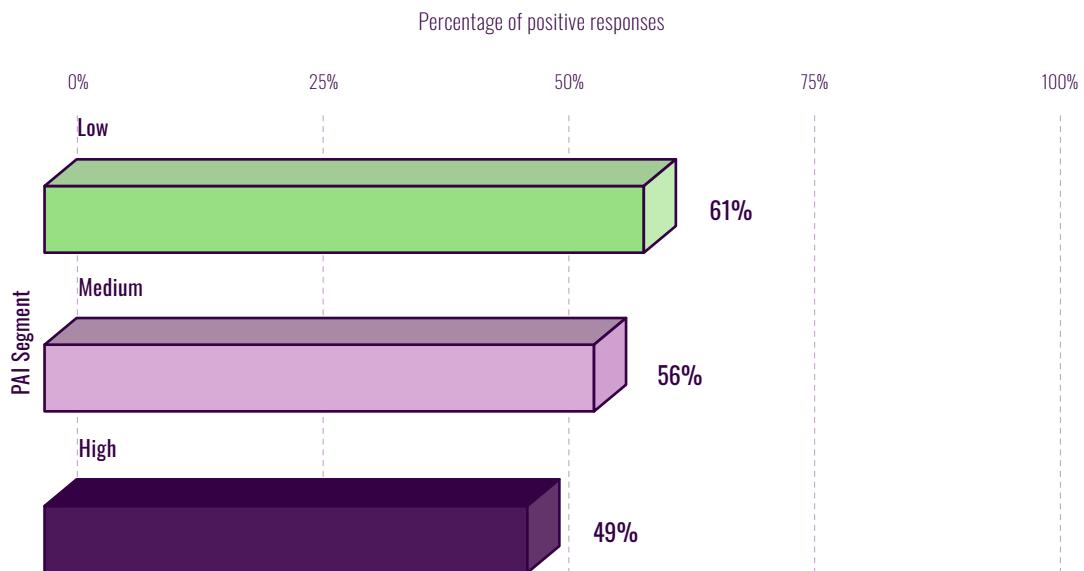
Source: Authors' elaboration based on IDB-CSP (2019).

80. Source: IDB (unpublished disaggregated data).

81. The feeling that immediate supervisors lead by setting a good example also declines as the level of automation potential increases, although the differences between the PAI segments are lower than for those of the other two leadership practices examined in the survey (see Figure A4.3.4 in Annex 4.3).

FIGURE 4.21 Perception of the Organizational Pride Inspired by Messages Transmitted by Immediate Supervisors, by Level of Automation Potential
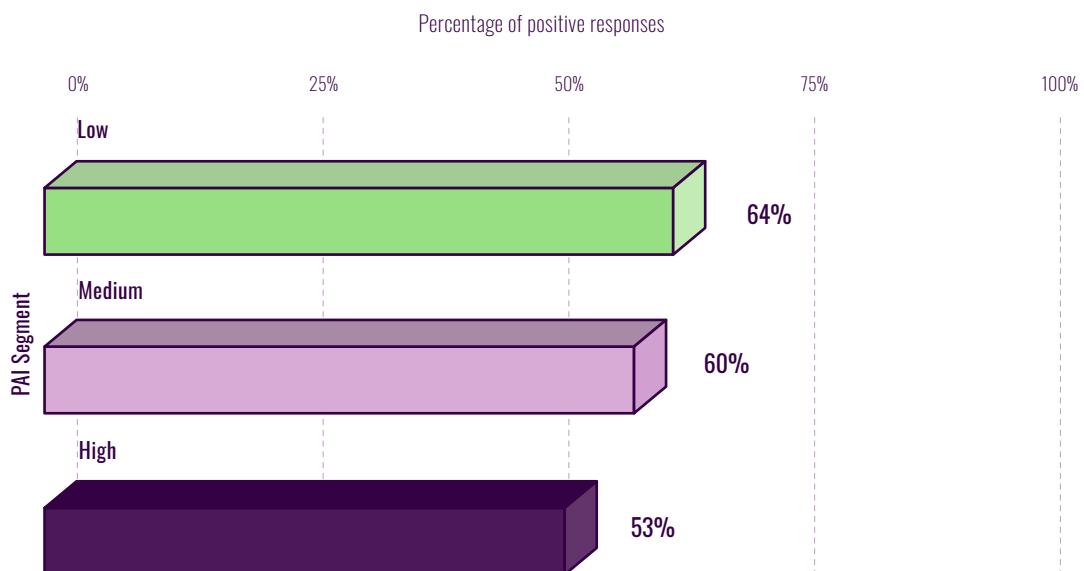
My immediate supervisor transmits messages that make civil servants feel proud to be part of the service

Percentage of positive responses

FIGURE 4.22 Perception of the Enthusiasm Transmitted by Immediate Supervisors, by Level of Automation Potential

My immediate supervisor transmits and generates enthusiasm for our service's vision and mission

Percentage of positive responses
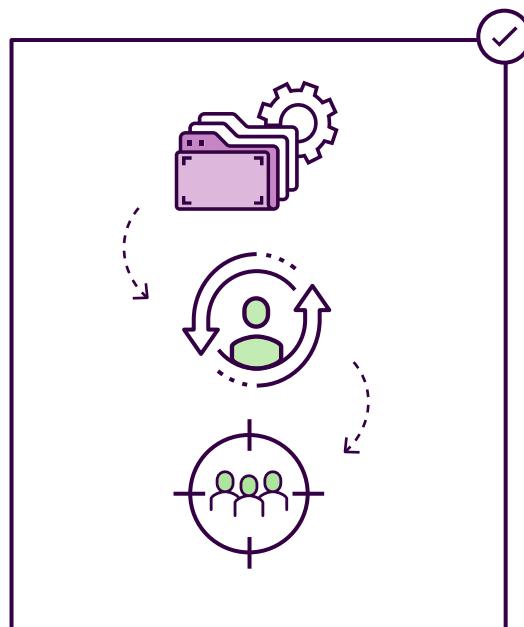
IMPLICATIONS FOR DIGITAL TRANSFORMATION AND PERSONNEL MANAGEMENT IN GOVERNMENT

This chapter presents the results of a scenario with optimistic and pessimistic aspects for the future of the digital transformation of government, especially in the Chilean case. The study reveals a combination of attitudes, competencies, and perceptions among civil servants that are very favorable for digital transformation. The large majority of respondents show little resistance to change and much willingness to perform different tasks in their institutions; they have high technological affinity and competencies; they perceive that technology will have a positive impact on their employment; and they are satisfied, committed, and motivated in the workplace. However, only a minority would be keen to move to another city (in their own agency) or to work in a different institution; fewer than half report that they enjoy (some) job stability, while fewer than 50 percent report that they have good work opportunities in the government or outside of it.

Practically all the attitudes, competencies, and perceptions examined in the study differ substantially when the automation potential of workers' jobs is considered. These gaps are a challenge for digital transformation processes in the public sector, as those civil servants whose jobs are most susceptible to automation display attitudes, competencies, and opinions less favorable to such modernization processes: lower commitment and job motivation, lower technological capacity and affinity, and less willingness to accept organizational changes for work reasons.

ADDRESSING THE ATTITUDES, COMPETENCIES, AND PERCEPTIONS OF CIVIL SERVANTS, AS WELL AS THE DIFFERENCES AMONG THEM ACCORDING TO THE AUTOMATION POTENTIAL OF THEIR JOBS, CALLS FOR EFFECTIVE AND APPROPRIATE PERSONNEL MANAGEMENT PRACTICES.

Results from the Chilean survey suggest that the leadership of immediate supervisors and training in technology for civil servants are useful initiatives for this purpose. Each of these has a positive and statistically significant relationship with people's job satisfaction, motivation, and commitment, their technological self-efficacy, and their perception of job stability. Moreover, good leadership is positively correlated with civil servants' willingness to change and a negative association with their perception of a threat to their employment from technological progress. Both relationships are statistically significant.
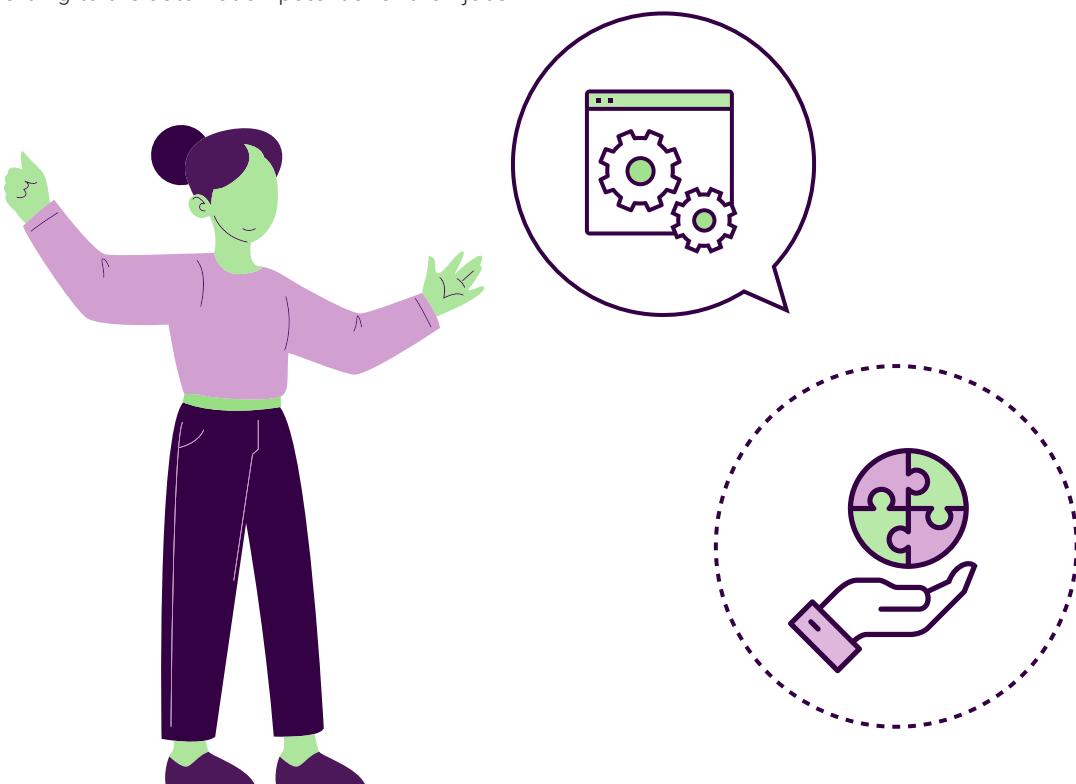
Analysis of personnel management practices also reveals a complex scenario for digital transformation in the public sector. The majority of respondents validate the leadership practices of their immediate supervisors, whereas only one in four had been trained in technology or computing during the last year and fewer than half report having received the training necessary to confront technological change at work. Moreover, both training and leadership by immediate supervisors present (once again) substantial differences when comparing groups of civil servants according to the automation potential of their jobs: those whose functions are most susceptible to automation—and therefore to disruption caused by digital transformation—are the ones who complain of the inadequate scope and effectiveness of their training in technology and a lower level of leadership from their immediate supervisors.

AN ESSENTIAL QUESTION ARISES
FROM THIS ANALYSIS:

HOW SHOULD INITIATIVES TO HELP CIVIL SERVANTS ADAPT TO THE DISRUPTIONS CAUSED BY DIGITAL TRANSFORMATION BE DESIGNED AND IMPLEMENTED?

THE FOLLOWING CHAPTER ATTEMPTS
TO ANSWER THAT QUESTION.

ANNEX 4.1
METHODOLOGY FOR BUILDING THE AUTOMATION POTENTIAL INDEX

THE API WAS CONSTRUCTED
IN FOUR STEPS:
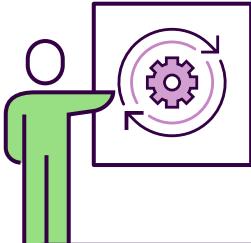
1 A review of the literature to identify the determinants of the automation potential of jobs and ways of measuring them.

2 An update and adaptation of the survey questions that measure the determinants of automation.

3 A hierarchical analysis to determine the relative weighting of the different subindices.

4 Selection and calibration of the measurement instrument.

LITERATURE REVIEW TO IDENTIFY THE DETERMINANTS OF THE AUTOMATION POTENTIAL OF JOBS AND WAYS OF MEASURING THEM

The sources examined for this stage include Brandes and Wattenhofer (2016), Frey and Osborne (2013), and Marcolin et al. (2016). Other references that influenced the general conceptualization of the API were the works of Arntz et al. (2016), the McKinsey Global Institute (2017), Muro, Maxim, and Whiton (2019), and Nedelkoska and Quintini (2018). Details of the main findings that contributed to the final construction of the API are presented below.

Brandes and Wattenhofer (2016) used linear programming techniques to delve into the automation potential results obtained by Frey and Osborne (2013). These authors found that a higher probability of automation is associated with a lower level of education required to perform the job.
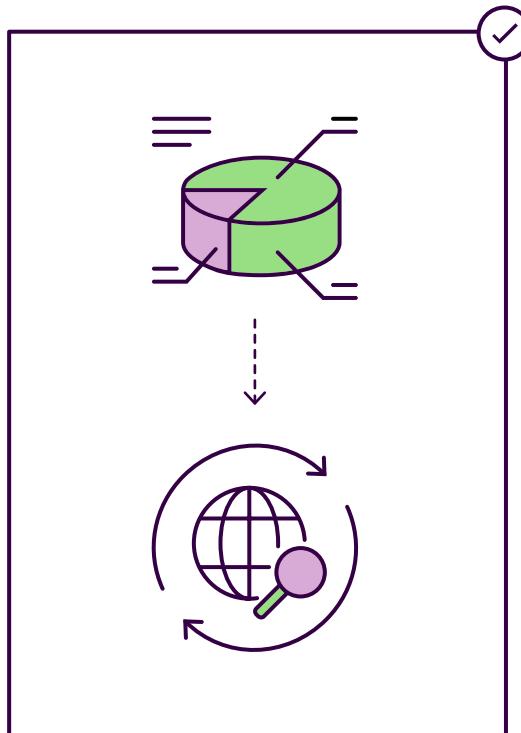
Frey and Osborne (2013) determined the automation potential by identifying bottlenecks: the characteristics of a job that, considering current technologies, would prevent it from being automated. Using an expert consensus criterion and then, through automatic learning techniques, extrapolating this criterion according to the bottlenecks that comprise each job, these authors estimated a probability of automation for a set of around 700 jobs.

These works helped define the automation potential of a job based on its bottlenecks, its intensity of routine, and the level of formal education required to carry it out.
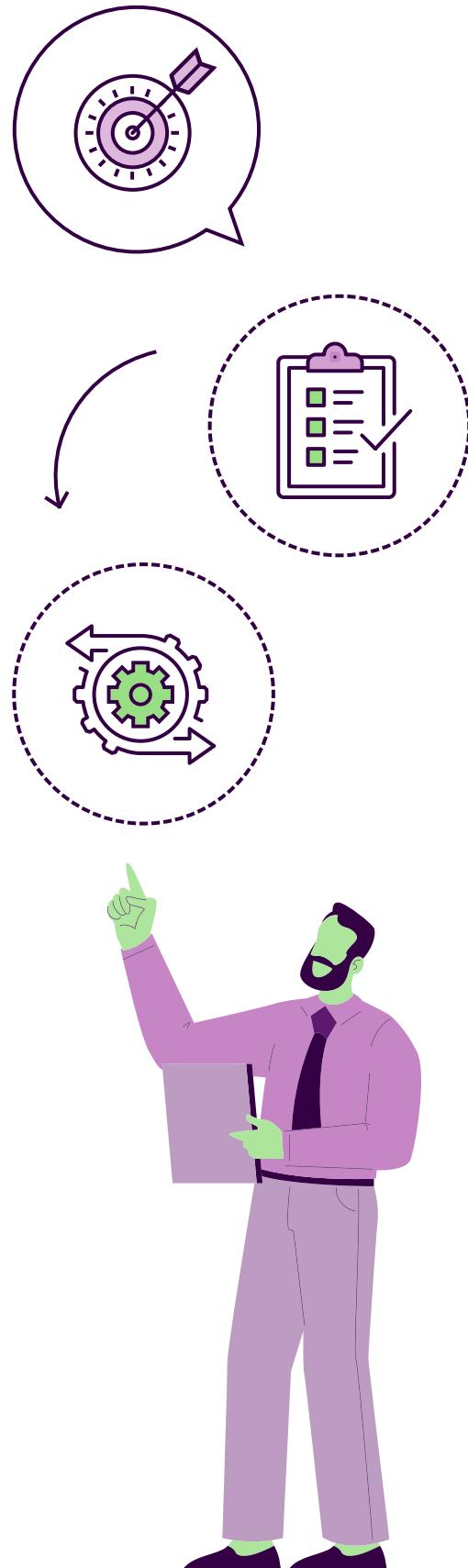
The work of Frey and Osborne (2013) also determines the intensity of a job's routine as a relevant factor for automation. The methodology of Marcolin et al. (2016) was also considered because they constructed an index of routine intensity (also known as routinization) based on the questions of the OECD PIAAC survey regarding work flexibility, autonomy, planning, and organization.

UPDATE AND ADAPT THE SURVEY QUESTIONS THAT MEASURE THE DETERMINANTS OF AUTOMATION
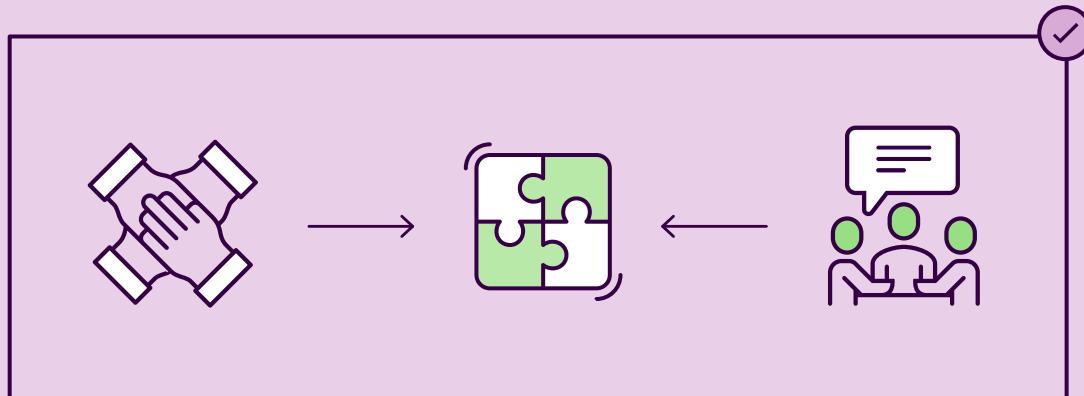
Once the essential elements for estimating the automation potential were detected, a process was undertaken to update and adapt them. The **update** consisted of evaluating the list of activities and characteristics employed by Frey and Osborne (2013) and translating them into a set of representative activities, updated to the current situation (2019) and to the work context in the Chilean government. This was done by a panel of experts convened by the Public Systems Center for Industrial Engineering of the University of Chile, in collaboration with the center's professional team. This panel consisted of five experts in digital transformation of government, with experience in document management, administrative law, and redesign of production processes, among others. Table 4.1 presents short biographies of each one.

ADAPTATION CONSISTED OF TRANSLATING AND ADJUSTING THE LANGUAGE USED TO DESCRIBE THE BOTTLENECKS, AS WELL AS THE QUESTIONS ON ROUTINIZATION AND REQUIRED LEVEL OF EDUCATION.

This process was carried out iteratively, according to the interview process, the survey guidance, and expert review of the information. Table A4.3.1 in Annex 4.3 shows the final list of bottlenecks considered in the survey.

BOX A4.1 Summary of the Biographies of the Experts Convened by the Public Systems Center of Industrial Engineering, University of Chile

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🌐 alejandrobarros   🌐 sistemaspublicos

José Inostroza
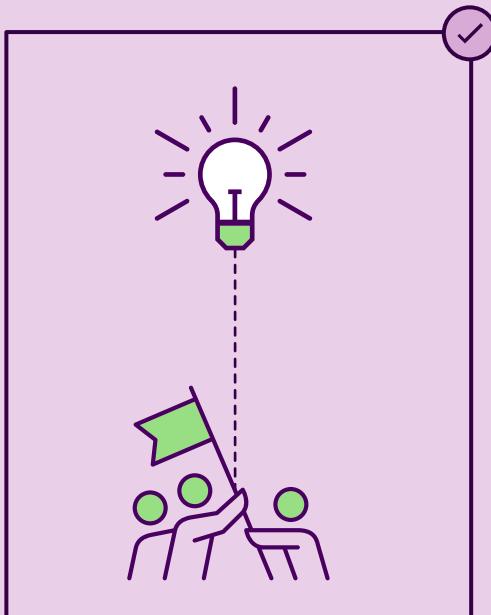
Is a lawyer with a master's degree in public management and policy from the University of Chile. He is a consultant, researcher, and associate teacher at the Public Systems Center, and he also teaches at the Alberto Hurtado and the Adolfo Ibáñez universities. He implemented and was the first director of the Public Sector Modernization Program of the Chilean Ministry of Finance (2015-2018), and he is the current ecretary for Modernization. In this position, he led the team that has promoted or contributed to many policy and legal reforms and modernization projects, such as: the Law on Digital Transformation, digital strategy, the DIPRES technological projects evaluation system, open budget, user satisfaction system, modernization of the Social Security Superintendency (Superintendencia de Seguridad Social, or SUSESO), ChileCompra, National Archive, ChileAtiende-Digital, SERNAC, Labor Directorate, INE and Health Superintendency, among others. Mr. Inostroza is the author of numerous academic publications, including book chapters, columns, and longer works.

Alejandro Barros

Holds a master's degree in sciences with a minor in computing from the University of Chile. He is an associate teacher at the University of Chile's Public Systems Center. He was the executive secretary of Chile's Digital Strategy from 2007 to 2008. He is an international consultant specialized in strategic technological planning, public technology policies, electronic government, and public procurement. As a consultant, he has worked with international organizations such as the World Bank, the United Nations Development Program (UNDP), the European Economic Community, the Economic Commission for Latin America and the Caribbean, and the Inter-American Development Bank. Mr. Barros is the author of many publications, including three books. In his role as consultant, he has worked in many countries in the LAC region and in Africa (Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, El Salvador, Ecuador, Ghana, Guatemala, Guyana, Ivory Coast Jamaica, Kenya, Mexico, Nicaragua, Panama, Paraguay, Peru, Togo, Trinidad and Tobago, and Uruguay). He teaches at various universities in Chile and is a frequent participant at both national and international seminars.

in roxanadonoso

Roxana Donoso

Graduated from the University of Chile in library science. She also holds a master's degree in digital documentation from Pompeu Fabra University (Barcelona, Spain). She is currently head of Innovation and Digital Transformation at the Financial Market Commission. She is one of Chile's foremost experts in the field of automation and digitization of content and document management systems. Among her main achievements was the initial development of web content management tools at the University of Chile in the 1990s, a field in which she was a pioneer in Chile. As head of the Information Resource Production Department. she modernized the entire legislative content management system at the National Library of Congress, a platform still seen as a benchmark in Chile in this field. Ms. Donoso is the creator of one of the most advanced document management systems in Chile. In both initiatives, she drew on her vast knowledge of how the public sector works to implement several automation processes.

🌐 derecho.uchile.cl

Rodrigo Moya

Is a lawyer and graduate of the University of Chile. He is one of the foremost experts in administrative law as it relates to technological and data protection systems, and he teaches these subjects at the University of Chile. He led one of the most important digital transformation projects in Chile at the Social Security Superintendency. The project digitized the entire complaints process (70,000 cases per year). This involved full digitization of the process and the application of artificial intelligence to assess cases and construct digital files and automatic technical reports. In 2018, the Chilean Treasury Ministry held a ceremony to celebrate this project's success.

in victoriahurtado

Victoria Hurtado

Is a lawyer. She is a graduate of the University of Chile and holds a master's degree in Public Policy from Harvard University. She is a specialist in the field of administrative procedures, legislation, and public digital document management policies. Ms. Hurtado is the author of the most comprehensive and recent theoretical and empirical research in document management in Chile. Her work produced public policy recommendations for the implementation of document management and archive management processes. This study collected use of time data from various public institutions.

PERFORM A HIERARCHICAL ANALYSIS TO DETERMINE THE RELATIVE WEIGHTING OF THE DIFFERENT SUBINDICES

Once the three elements needed for estimating the automation potential (bottlenecks, routinization, and formal education required) were identified, the weighting of each one was determined for the final construction of the index. For this purpose, an analytic hierarchy process was carried out, which was developed by Saaty (1988) and recommended in this type of context (OECD, 2013). This method seeks to extrapolate the criterion of a group of experts who examine multiple elements to determine the relative importance of various factors. Using algebraic techniques, an average of these valuations is calculated and translated into overall weightings for each element. This process was conducted in a workshop in which the experts named in Box A.41 participated. As a result, the following weighting vector was obtained: 70 percent for the bottlenecks subindex, 22 percent for the routinization subindex, and 8 percent for the formal education requirement subindex.

An analytic hierarchy process is structured such that the subjectivity of the qualitative criterion of each expert is underlying. To ensure that the results obtained did not depend on this subjectivity, a sensitivity analysis was carried out that evaluated the results after modifying the index weightings. Tests were run with the following weightings: 50 percent bottlenecks, 25 percent routinization, and 25 percent level of formal education required; and 33.33 percent bottlenecks, 33.33 percent routinization, and 33.33 percent level of formal education required. These variations modified the results of the analysis presented in the chapter in numerical terms, but all the trends observed (and therefore the conclusions that can be drawn from them) remained the same.
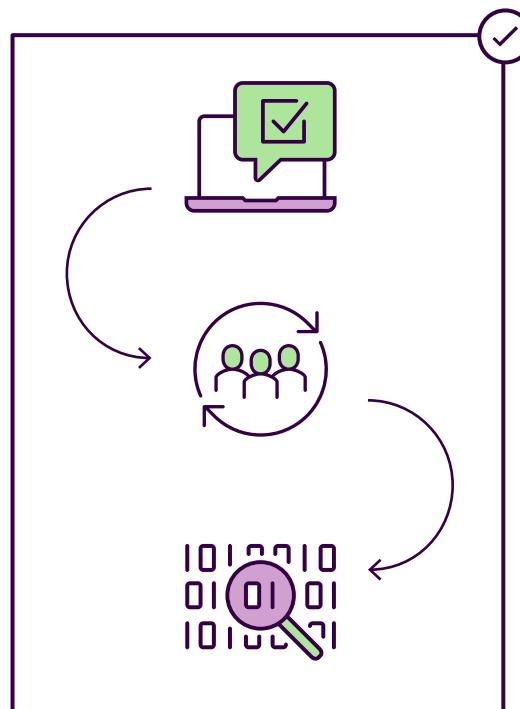
SELECT AND CALIBRATE THE MEASUREMENT INSTRUMENT

The survey questions were calibrated to ensure that their results converged with what was reported by the respondents and the expert opinions. This calibration process was done iteratively and comprised of the following stages:

1

35 cognitive interviews were held to ensure correct comprehension of the questions.

2

65 interviews were conducted to establish the employees' use of time, identifying the nature of the activities that make up their job and the frequency with which they perform them.

The experts' evaluation criteria were adjusted in a workshop to compare criteria and preliminary results.

Use of time data were collected for each individual interviewed in a systematized format designed in conjunction with the panel of experts.

The survey was applied to the subjects interviewed and their API was calculated using the proposed formula.

The panel of experts evaluated the automation potential of the job of each individual interviewed using the systematized record indicated previously.
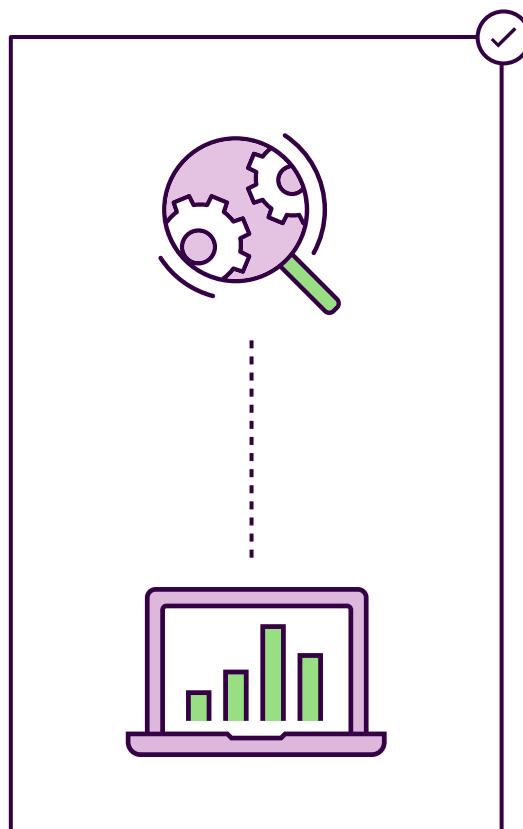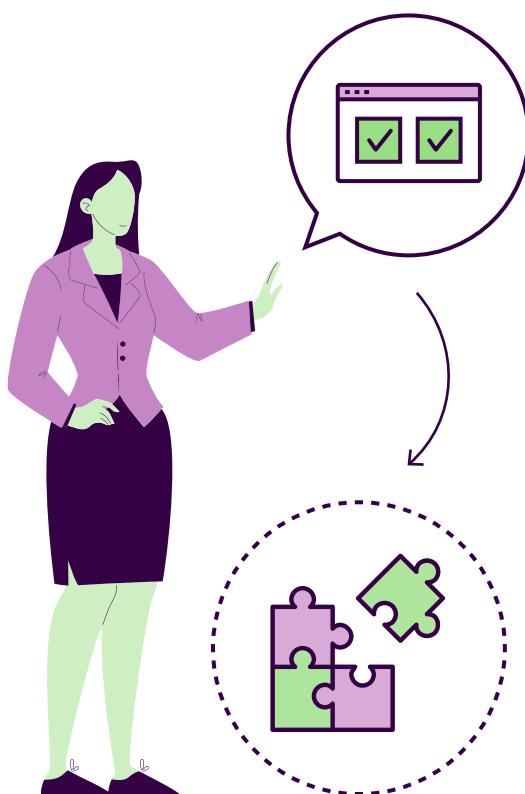
Results were compared for each job (between API calculated according to the survey and the potential evaluated by the panel of experts).

ANNEX 4.2
REGRESSIONS AND CORRELATIONS

The following section presents the results of the regressions tested on the basis of the survey data (see Table A4.2.1). It presents the dependent variables analyzed, which are the aggregate indices of the respective attitude, competency, or perception of the civil servants. The first column shows the independent variables, which correspond to the aggregate indices of the respective personnel management practices and to the automation potential index (API). All these regressions include controls by rank, type of contract (legal status), region, educational level, gender, age, years of experience in the public sector, level of income, and the institution to which the respondents belong (the results of these variables are not shown in

Table A4.2.1). Thereafter, a correlogram depicts the civil servants' attitudes, competencies, and perceptions, as well as the API of their jobs (see Figure A4.2.1).

Both the regressions and the correlations utilize aggregate indices that correspond to the simple average of all the questions included for the corresponding management practice, attitude, competency, or perception, rescaled from 0 percent to 100 percent (agree entirely = 100 percent; agree = 75 percent; neither agree nor disagree = 50 percent; disagree = 25 percent; disagree entirely = 0 percent).
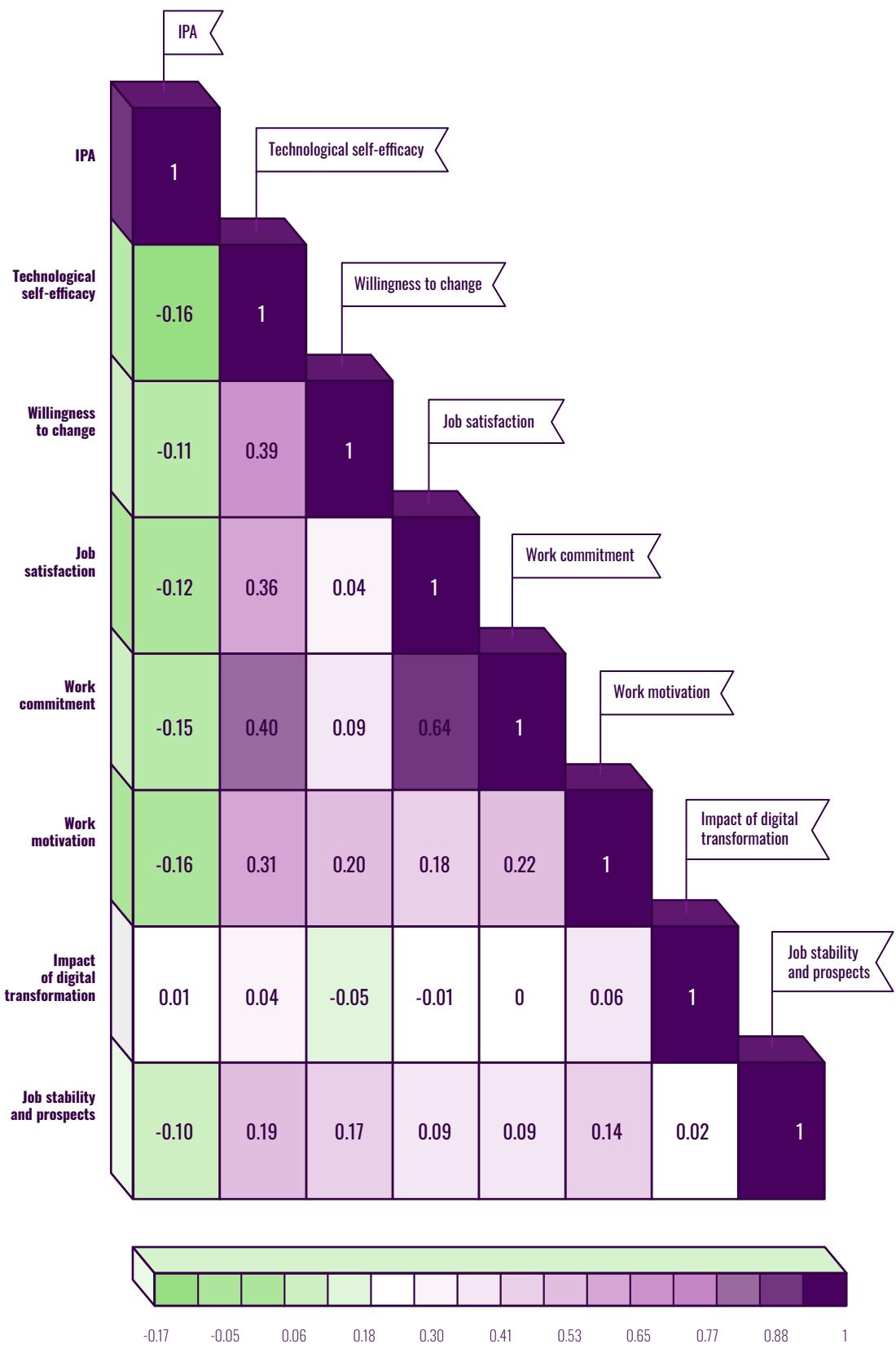
TABLE A4.2.1 Regression Results

		Aggregate Indices of Civil Servants' Attitudes, Competencies, and Perceptions						
		Technological Self-Efficacy	Willingness to Change	Job Satisfaction	Job Commitment	Job Motivation	Impact of Technology on Employment	Stability and Job Prospects
Management practices	Training	0.0412***	0.0135**	0.0450***	0.0404***	0.0201*	-0.0008(NS)	0.0395***
		(0.0055)	(0.0067)	(0.0073)	(0.0063)	(0.0108)	(0.0090)	(0.0090)
	Leadership	0.0897***	0.0003(NS)	0.2265***	0.1540***	0.0601***	-0.0247***	0.0527***
			(0.0065)	(0.0090)	(0.0079)	(0.0114)	(0.0090)	(0.0095)
Automation Potential Index (API)		-0.1094***	-0.0769***	-0.1351***	-0.1493***	-0.2288***	-0.0255(NS)	-0.0841***
		(0.0121)	(0.0121)	(0.0144)	(0.0134)	(0.0196)	(0.0179)	(0.0164)
Constant		80.98***	83.8703***	56.4506***	71.6504***	71.6318***	46.5471***	46.7846***
		(4.5311)	(3.2367)	(5.0752)	(4.9477)	(5.3231)	(4.3695)	(4.8179)
R^2 adjusted		0.118	0.131	0.190	0.137	0.038	0.081	0.040

Note: Standard errors in parentheses.

*$p<0.1$, **$p<0.05$, ***$p<0.01$, NA = Not applicable, NS = Not significant.

FIGURE A4.2.1 Matrix of Correlations between Civil Servants' Attitudes, Competencies, and Perceptions, and the API of Their Jobs

	IPA	Technological self-efficacy	Willingness to change	Job satisfaction	Work commitment	Work motivation	Impact of digital transformation	Job stability and prospects
IPA	1							
Technological self-efficacy	-0.16	1						
Willingness to change	-0.11	0.39	1					
Job satisfaction	-0.12	0.36	0.04	1				
Work commitment	-0.15	0.40	0.09	0.64	1			
Work motivation	-0.16	0.31	0.20	0.18	0.22	1		
Impact of digital transformation	0.01	0.04	-0.05	-0.01	0	0.06	1	
Job stability and prospects	-0.10	0.19	0.17	0.09	0.09	0.14	0.02	1

-0.17   -0.05   0.06   0.18   0.30   0.41   0.53   0.65   0.77   0.88   1

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ANNEX 4.3
COMPLEMENTARY MATERIAL

TABLE A4.3.1 Final List of Bottlenecks

1. Defining the long-term strategic planning of your service.

2. Interpreting laws, rules, and regulations to determine whether events or processes comply with them.

3. Determining the value, quality, or importance of goods and/or services.

4. Making strategic decisions for your service or unit that require you to analyze information and evaluate scenarios.

5. Designing, creating, or developing new concepts, models, computer programs, services, products, or artistic works.

6. Acquiring cutting-edge or technological knowledge to apply to your work.

7. Coordinating a team to develop a project or initiative.

8. Designing activities and spaces for improving the organizational culture and/or working environment.

9. Strategically assessing management or other units regarding technical or management issues.

10. Developing formal education programs and/or instructing other persons.

11. Offering medical, emotional or other personal care to users or clients.

12. Mentoring or coaching others to help them to develop their skills.

13. Developing and maintaining strategic relations for cooperation with representatives of other units or organizations.

14. Directing, guiding, and motivating work teams and supervising their performance.

15. Negotiating or resolving conflicts with people either within or outside of your service.

16. Persuading other people to change their actions or ways of thinking.

17. Recruiting, interviewing, selecting, contracting, and/or promoting people.

TABLE A4.3.2 Scale of Frequency of Activities for the Bottlenecks Subindex

Option	Never	Annually	Monthly	Weekly	Daily	Various times a day	Always
Description	Does not perform this activity	At least once a year	At least once a month	At least once a week	At least once a day	Around half of the shift, every day	Throughout the entire shift, continuously, every day
Equivalence in points	0	1	12	52	260	1,144	2,288

TABLE A4.3.3 Score Associated with Questions from the Routinization Subindex

	Not at all	Very little	To some extent	To a large extent	To a very large extent
To what extent can you choose or change the sequence of your tasks?	100%	75%	50%	25%	0%
To what extent can you choose or change the way in which your work is done?	100%	75%	50%	25%	0%
	Never	Less than once a month	Less than once a week, but at least once a month	At least once a week, but not every day	Every day
How often does your current position involve planning your work activities?	100%	75%	50%	25%	0%
How often does your current position involve organizing your use of time at work?	100%	75%	50%	25%	0%

TABLE A4.3.4 Score Associated with Educational Level Required

Educational Level Required	Score
Lower than middle school completed	100%
Middle school completed	80%
Higher-level technical qualification	60%
Professional qualification	40%
Master's degree	20%
Doctorate or post-doctorate	0%
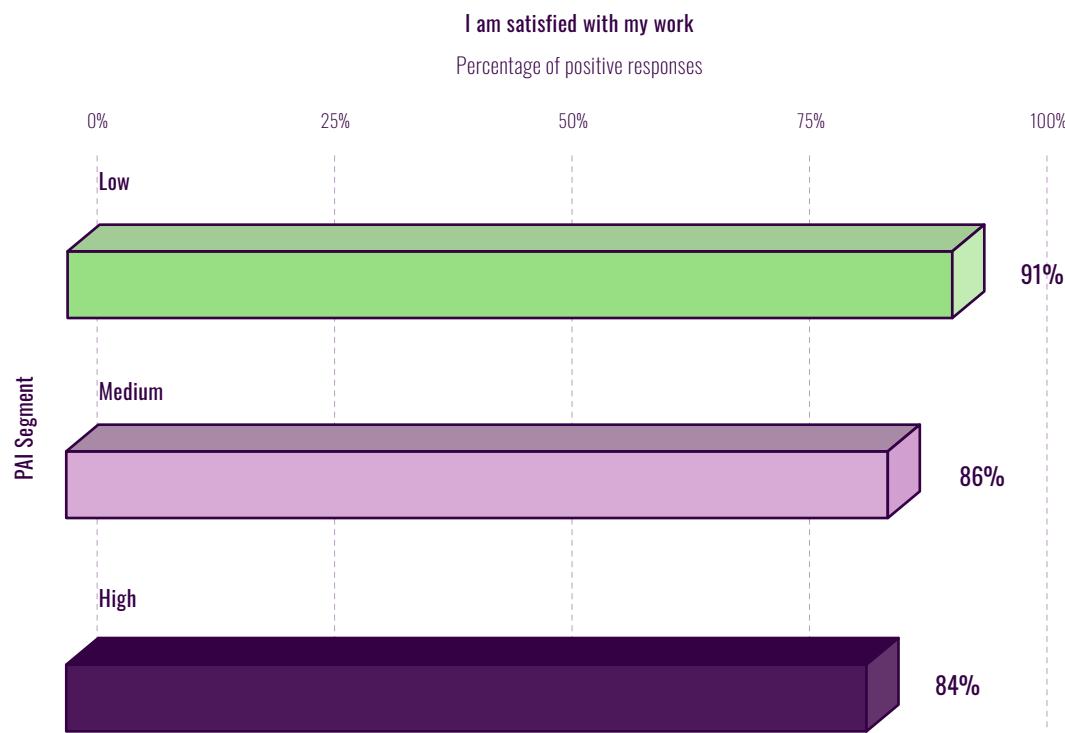
TABLE A4.3.5 Demographic Information by Sampling Framework and Observed Sample

	Sampling Framework		Observed Sample	
	Number	Percentage	Number	Percentage
Gender				
Woman	16,990	56%	5,165	55%
Man	13,497	44%	4,142	45%
Age				
29 years or under	2,399	8%	705	8%
Between 30 and 39 years	9,013	29%	2,856	31%
Between 40 and 49 years	9,944	33%	3,189	34%
Between 50 and 59 years	6,036	20%	1,803	19%
60 years or over	3,095	10%	754	8%
Educational Level				
Higher technical qualification	7,428	24%	799	9%
Professional or university qualification	5,513	18%	1,517	16%
Professional university degree	17,546	58%	6,991	75%

TABLE A4.3.6 Averages, Ranges, and Standard Deviations from the API
by Demographic and Administrative Characteristics
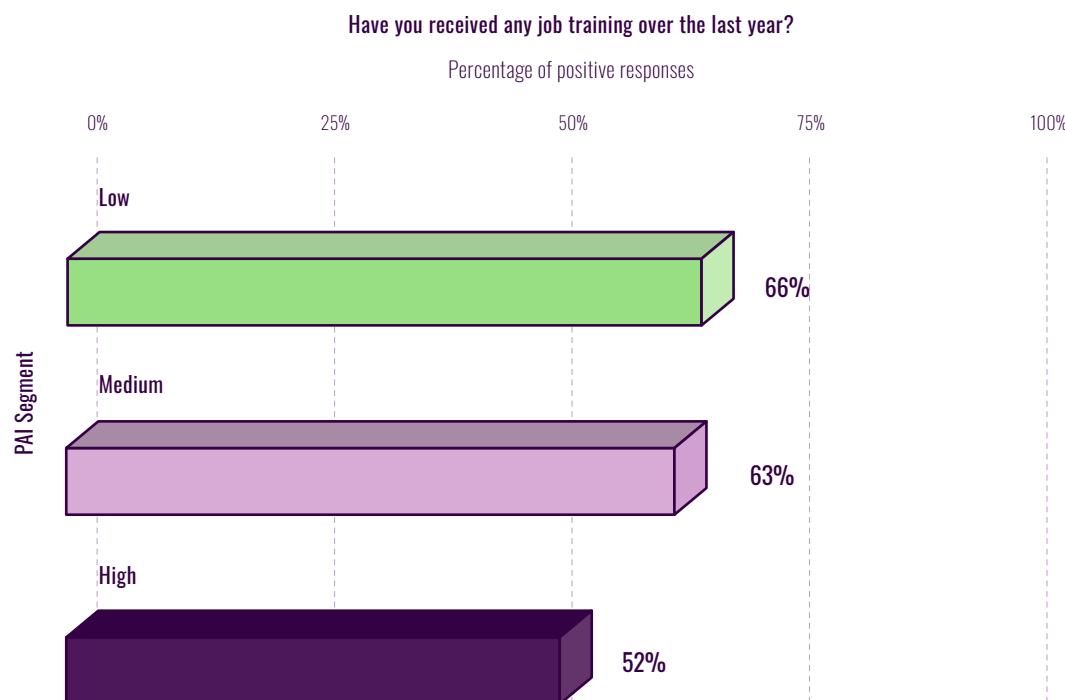
	Average	Standard Deviation	Minimum	Maximum
Sex				
Man	35.9	17.6	1.6	98.4
Woman	36.4	18.5	3.2	98.4
Age				
29 or under	35.5	16.5	3.6	98.4
30–39	34.6	16.7	3.6	98.4
40–49	36.3	18.5	3.2	98.4
50–59	37.4	19.3	4.1	97.0
60 or over	38.4	19.1	1.6	98.4
Years of Public Service				
5 years or under	35.2	16.3	3.6	98.4
Between 5 and 10 years	35.4	17.7	3.2	98.4
Between 10 and 15 years	36.0	18.2	3.6	98.4
Over 15 years	37.4	19.4	1.6	98.4
Legal Status				
Work code	37.3	18.5	9.3	84.2
Honorary	35.5	15.9	6.1	98.4
Contract	35.7	17.6	1.6	98.4
Staff	37.8	19.9	4.1	98.4
Other	35.5	18.9	9.1	88.5

FIGURE A4.3.1 Job Satisfaction, by Level of Automation Potential

I am satisfied with my work

Percentage of positive responses
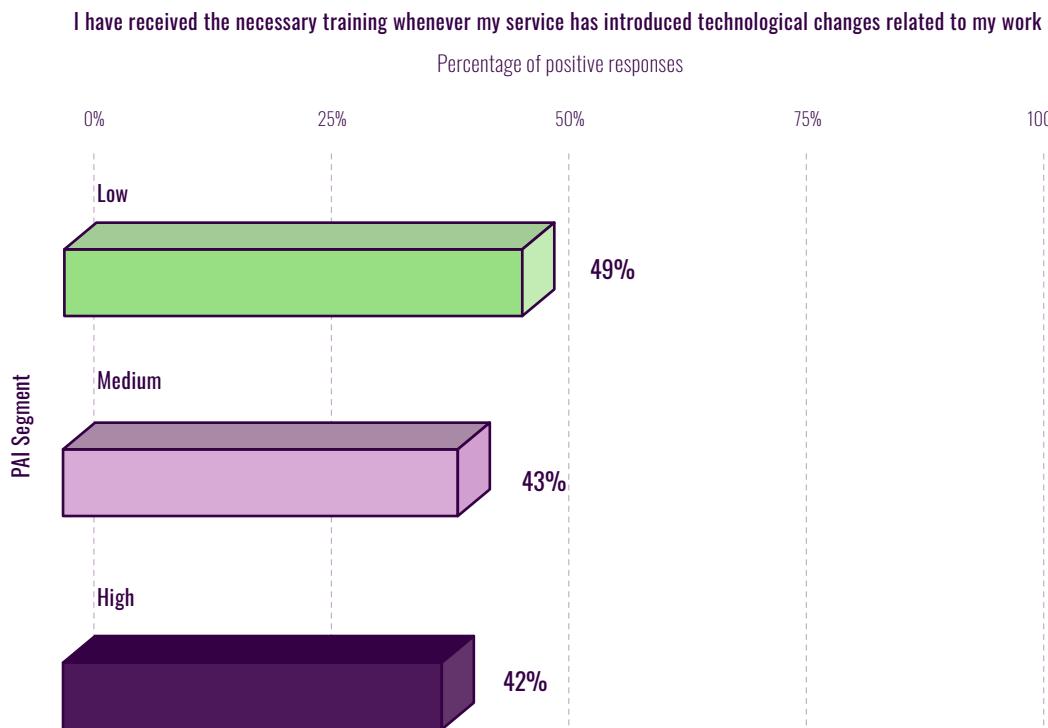
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.2 Participation in General Training, by Level of Automation Potential

Have you received any job training over the last year?

Percentage of positive responses
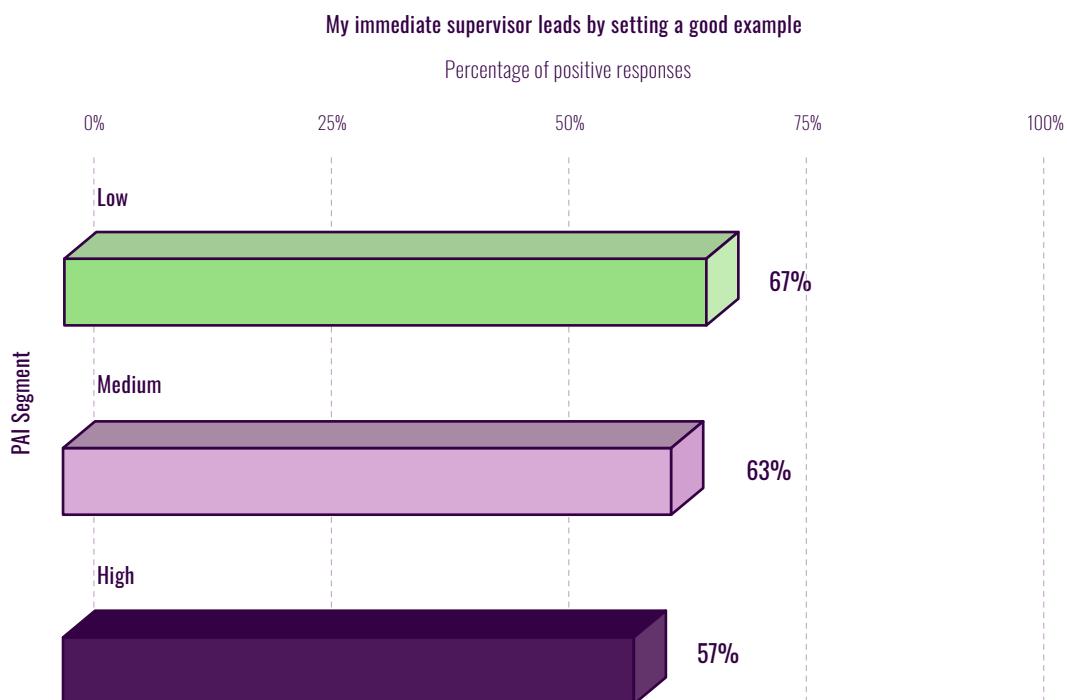
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.3 Access to Training in Contexts of Technological Change, by Level of Automation Potential

I have received the necessary training whenever my service has introduced technological changes related to my work

Percentage of positive responses
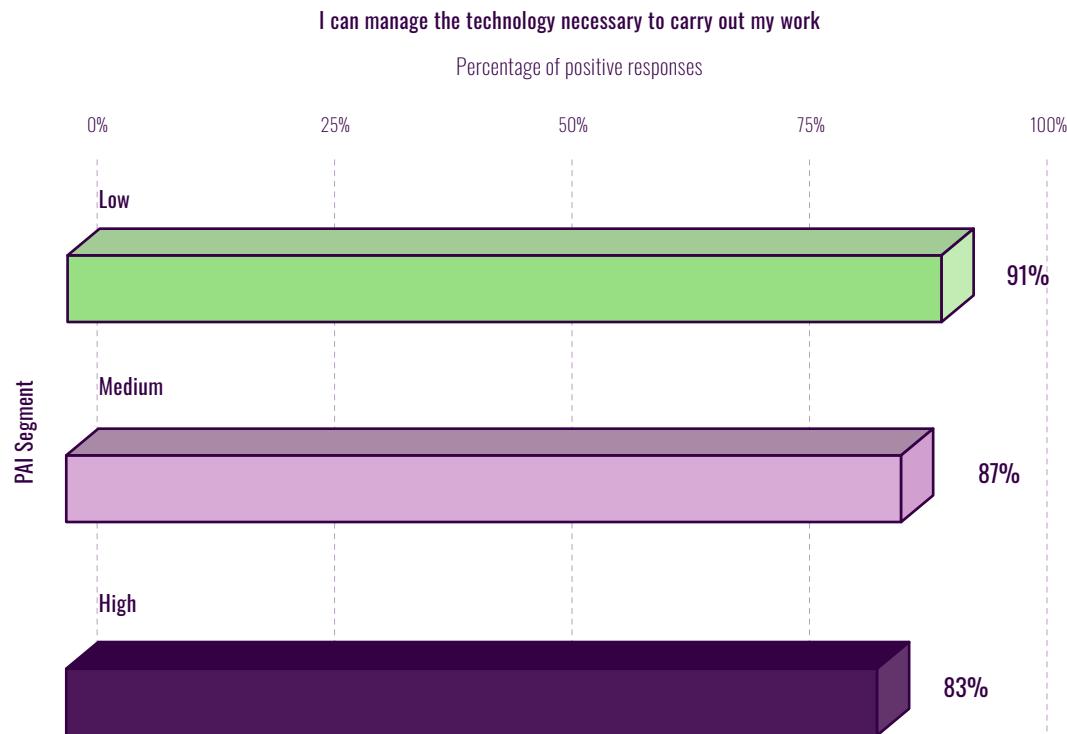
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.4 Perception of Leadership Setting a Good Example, by Level of Automation Potential

My immediate supervisor leads by setting a good example

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

How Ready Is the Civil Service for Digital Transformation?
Evidence from a Survey of Civil Servants in Chile

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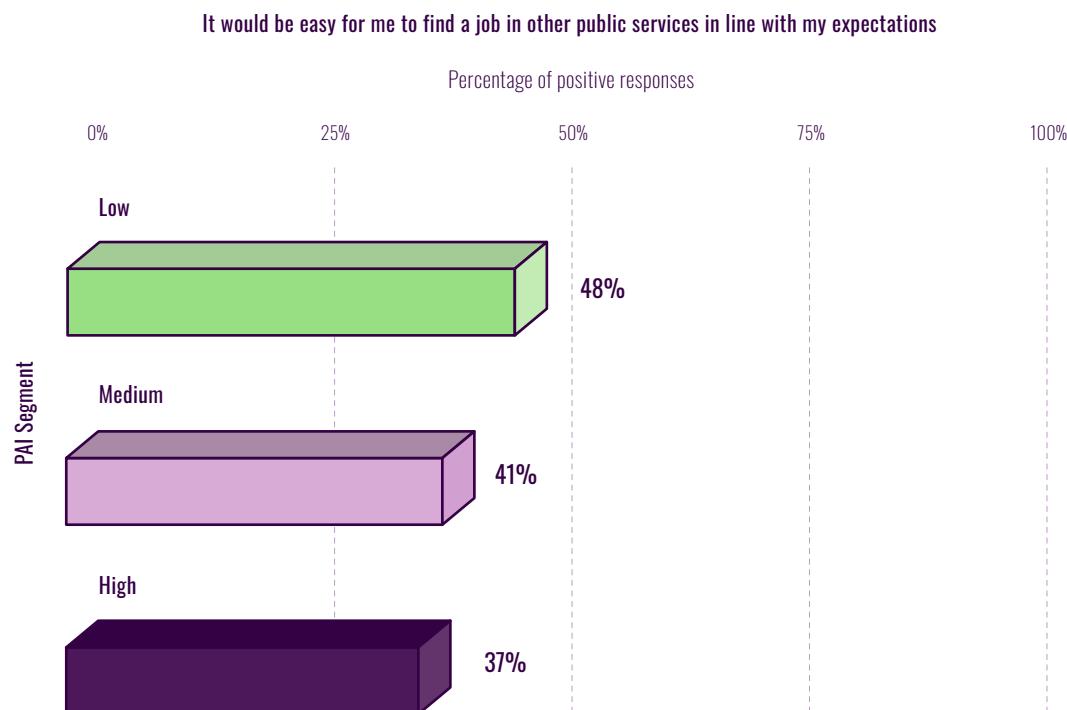
FIGURE A4.3.5 Management of Technology for Work Performance, by Level of Automation Potential

I can manage the technology necessary to carry out my work

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).
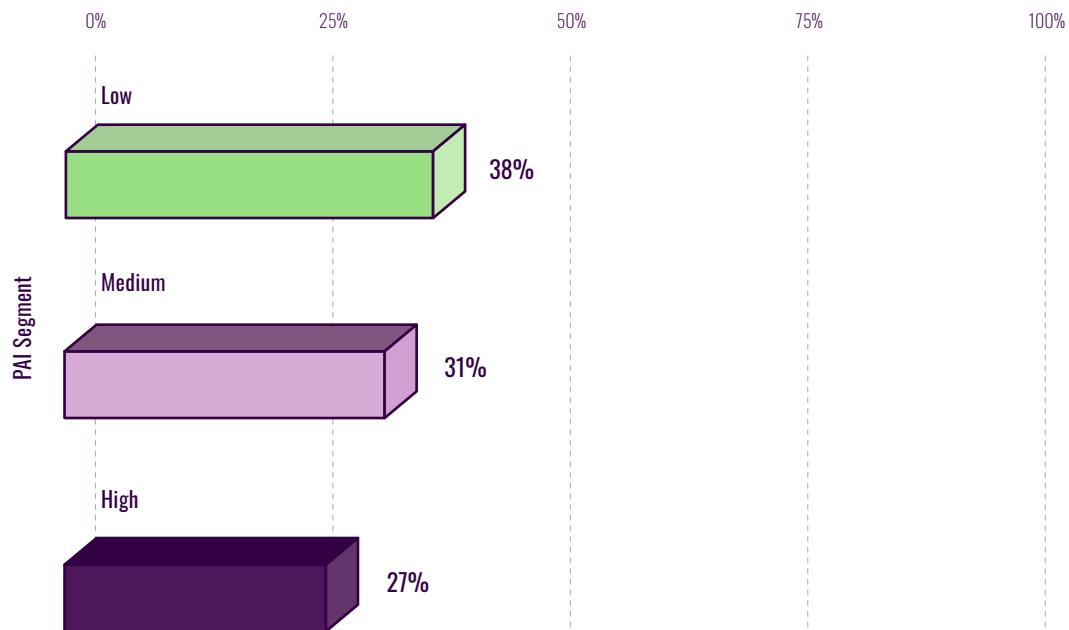
FIGURE A4.3.6 Perception of Job Opportunities in the Public Sector, by Level of Automation Potential

It would be easy for me to find a job in other public services in line with my expectations

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.7 Perception of Job Opportunities Outside of the Public Sector, by Level of Automation Potential

It would be easy for me to find a job outside of the public sector in line with my expectations
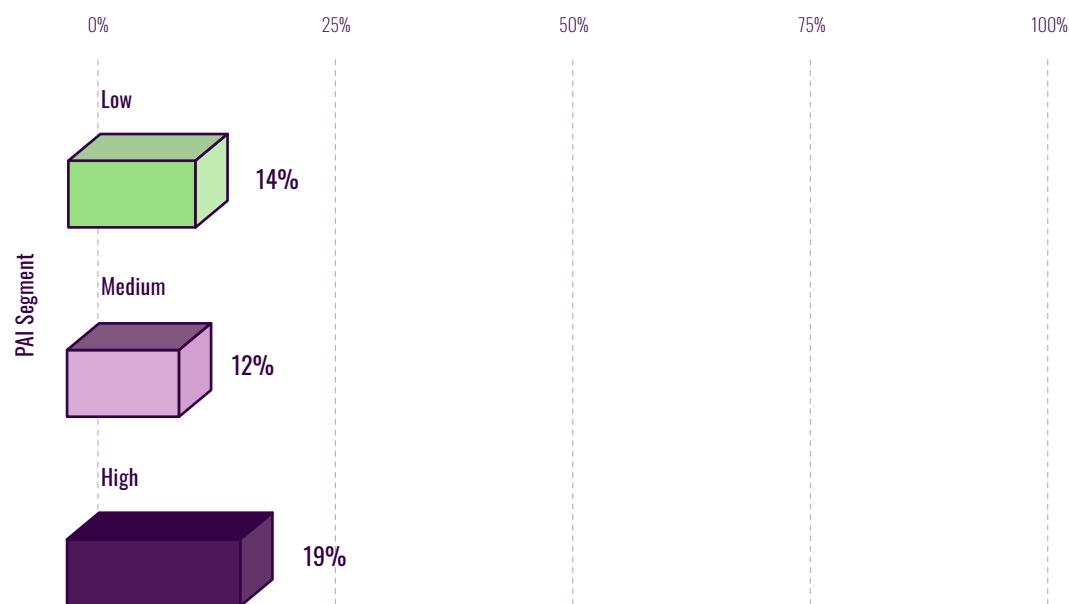
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.8 Perception that Technology May Make One's Own Job Disappear, by Level of Automation Potential
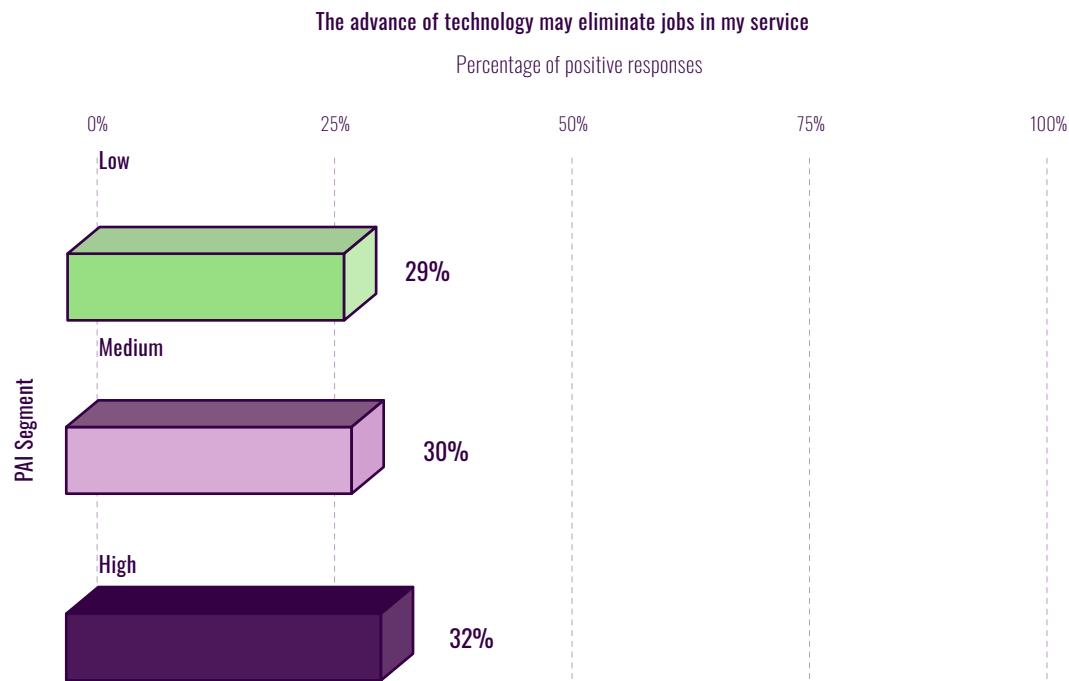
The advance of technology in my service may eliminate my own job

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

How Ready Is the Civil Service for Digital Transformation?
Evidence from a Survey of Civil Servants in Chile

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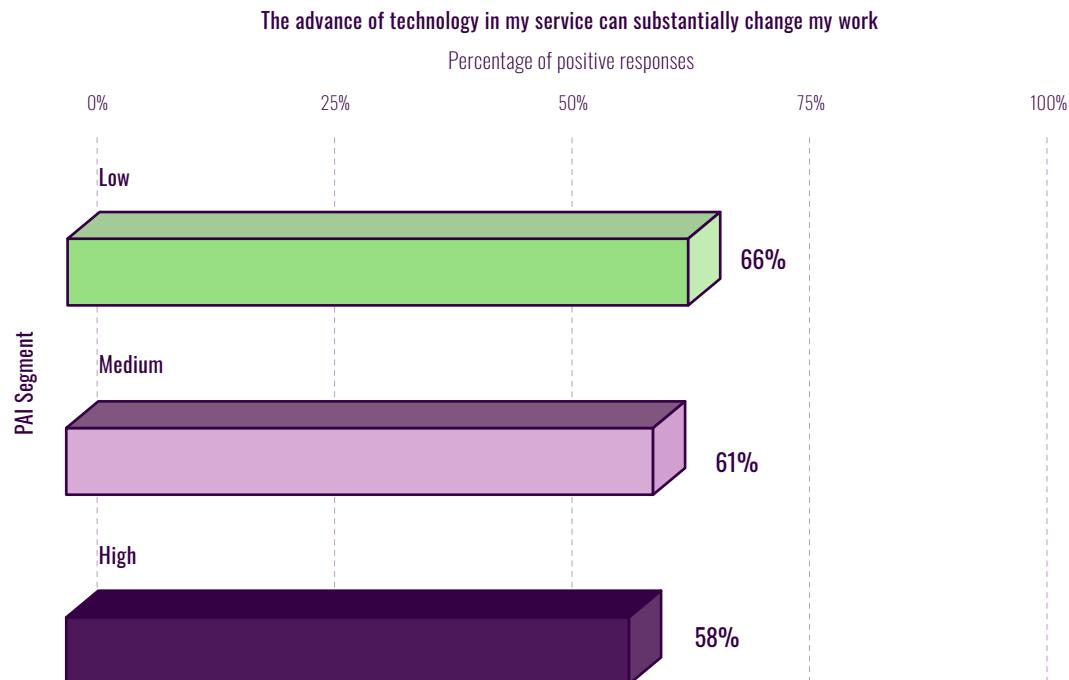
FIGURE A4.3.9 Perception that Technology May Make One's Own Job Disappear in One's Own Institution, by Level of Automation Potential

The advance of technology may eliminate jobs in my service

Percentage of positive responses
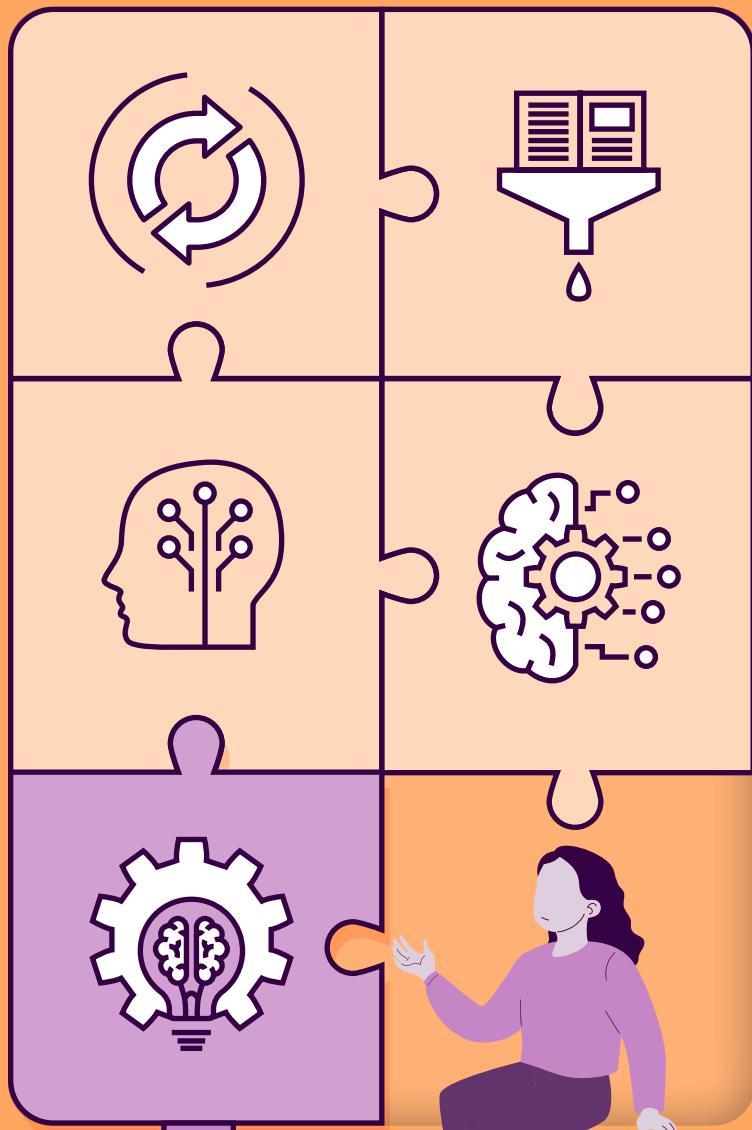
Source: Authors' elaboration based on IDB-CSP (2019).

FIGURE A4.3.10 Perception that Technology May Change One's Work, by Level of Automation Potential

The advance of technology in my service can substantially change my work

Percentage of positive responses

Source: Authors' elaboration based on IDB-CSP (2019).

5

CHAPTER

MANAGING THE **DISRUPTIONS IN EXISTING CIVIL SERVANTS'** JOBS CAUSED BY DIGITAL TRANSFORMATION

AUTHORS | Benjamin Roseth · Angela María Reyes · Mariano Lafuente

ABSTRACT

The digital transformation of government can change—in some cases radically—the nature of many public sector jobs. The most severe impacts are likely to affect the civil servants with less capacity to adapt: those with less access to training, less openness to change, or less favorable attitudes toward their supervisors. Overlooking change management and the training needs of civil servants can lead to the partial or failed implementation of technological reforms, as demonstrated by experience with integrated financial management systems (IFMISs) documented in this chapter.

Given this context, an important question arises: What should initiatives to help civil servants adapt to the disruptions in their jobs caused by digital transformation entail? There are two types of changes that digital transformation can bring about in public sector jobs: modification and elimination of roles. Following a brief justification of the importance of managing these transitions, the chapter is divided into two sections. It first addresses fundamental questions that relate to both the modification and the elimination of roles, from how to develop an assessment of which jobs may be changed by digital transformation, to the best way to plan adaptation measures, change management, and training. Then it addresses questions related to the elimination of jobs, from how to evaluate the various options of retraining workers or laying them off, to the implementation of that decision.
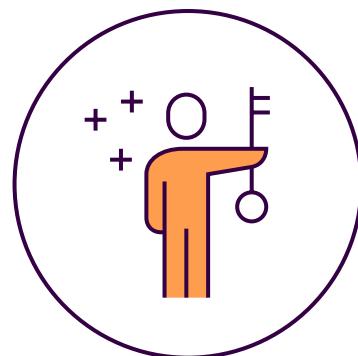
INTRODUCTION

Digital transformation can change the nature of public sector jobs. As discussed in previous chapters, the probability of success of digital transformation may be threatened unless it is accompanied by a process of adaptation for the civil servants affected. What should initiatives help civil servants adapt to the disruptions in their jobs caused by digital transformation entail?

According to the available evidence, the governments of Latin America and the Caribbean (LAC) do not seem to be sufficiently prepared to adapt their human capital to the disruptions caused by digital transformation. As explained in Chapter 1, neither the digital agendas nor the strategic plans of the civil service of most of the region's countries pay attention to the disruptive effect of digital transformation on civil servants. Most LAC countries either fail to conduct effective strategic human resource planning, or they do so only as a formality (Cortázar, Lafuente, and Sanginés, 2014).[82] Training is generally inadequate for supporting the continual renewal of skills required (see Chapter 3 for more information).

FAILURE TO ADDRESS THE DISRUPTIVE EFFECT OF DIGITAL TRANSFORMATION ON THE CIVIL SERVICE WORKFORCE CAN HAVE SERIOUS CONSEQUENCES.
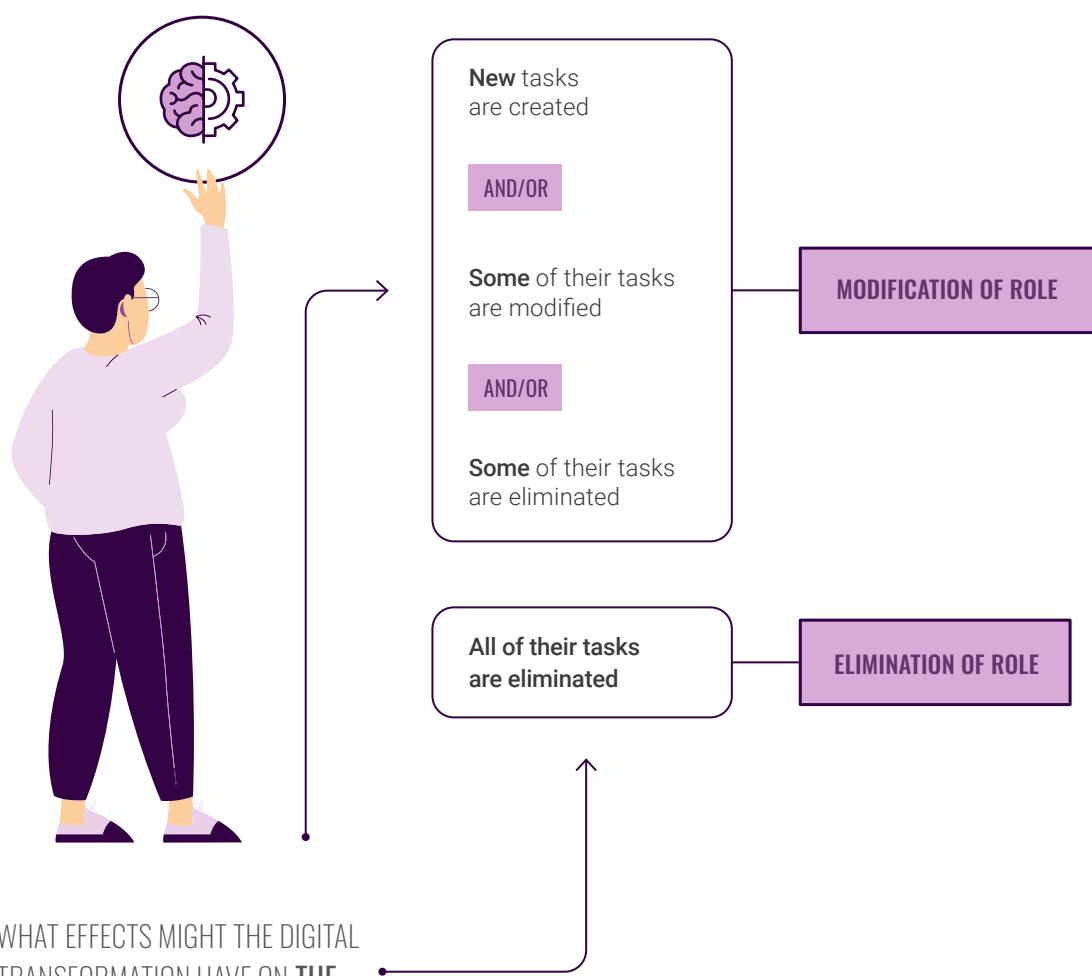
On one hand, it can lead to a lower than expected level of adoption of the new technological tools implemented, as happened with the IFMIS (discussed in Chapter 2): many of the most spectacular failures of these systems occurred because civil servants continued to perform by hand the processes that the IFMIS had automated. Failure of civil servants to adopt the new technologies can be due to various factors: technological adoption tends to be more difficult for less educated employees (Chun, 2003), those with fewer baseline technological skills (Greenwood, 1997), older workers (Borghans, 2002), those closer to retirement age (Friedberg, 2003), and even for more highly qualified employees who may feel that their investment in the skills they already have will be wasted (Violante, 2002). Furthermore, in the case of the IFMIS, the implementation of technological changes did not always go hand-in-hand with regulatory changes that enforced the use of the new system or abolished the systems used before—another factor worthy of consideration in the modern context of digital transformation.

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82. See, for example, Dumas (2017) for the most recent evidence about this phenomenon in Paraguay.

Failure to consider the implications of digital transformation for civil servants can also generate opposition, leading to project failure. This type of resistance to change is common. In a survey of more than 700 Latin American public managers, 61 percent recognized having participated in a project that faced difficulties during implementation due to the opposition of civil servants whose jobs were under threat (IDB-COPLAC, 2019). Similarly, 67 percent were of the opinion that resistance to change by civil servants represents a "problematic" or "very problematic" obstacle to the implementation of reforms that, as in the case of digital transformation, can eliminate and at the same time create new tasks and roles within an organization.[83] This also occurred with the IFMISs, in that institutional

FIGURE 5.1 Possible Effects of Digital Transformation on the Roles of Existing Civil Servants

Source: Authors' elaboration based on IDB (2020).
Note: When selecting any of these options, the corresponding employment regulations must be applied.
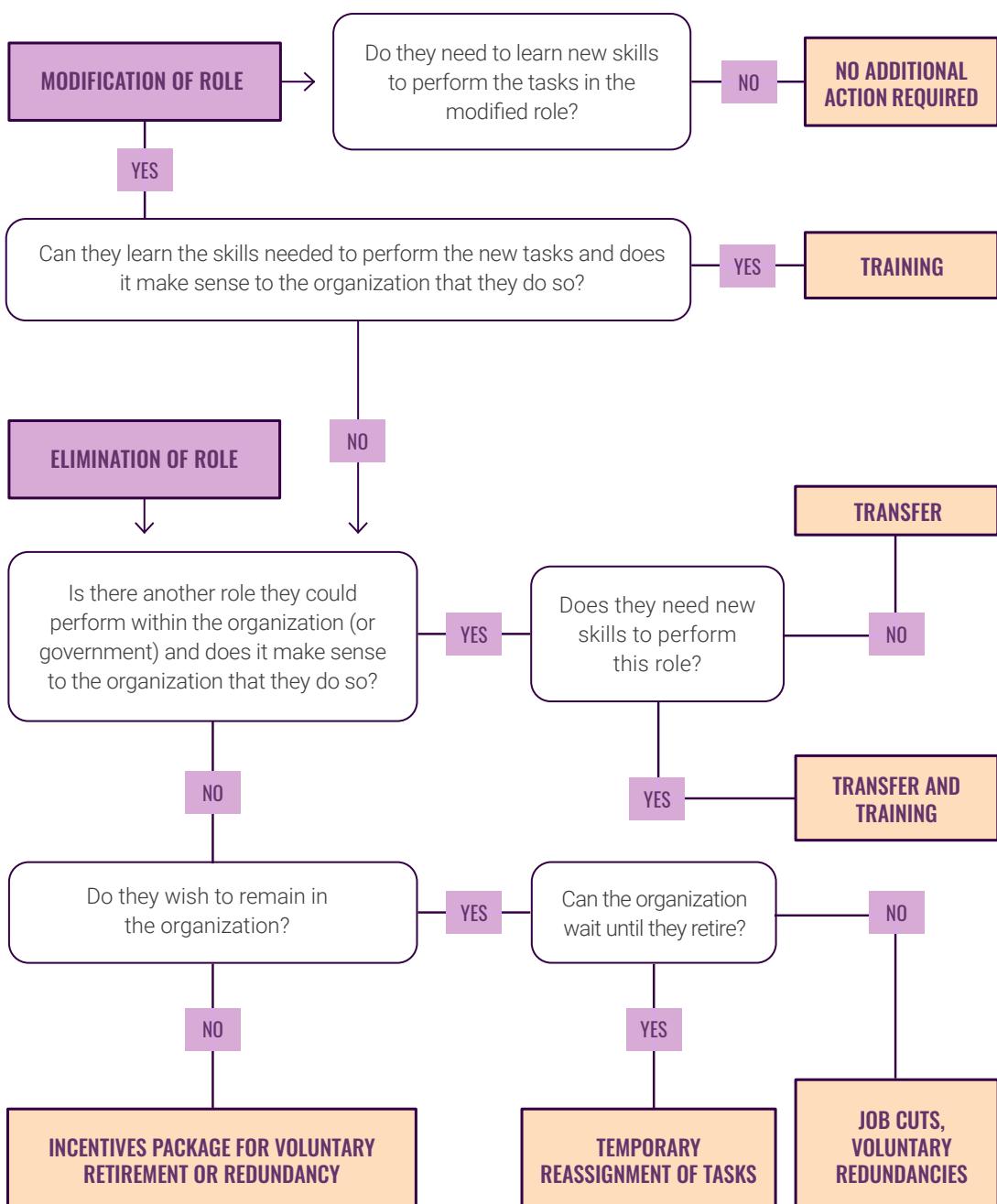
83. The complete question was: "Imagine that you are leading a substantial internal reform in your organization. This change will affect the functions carried out by members of your team, including the elimination of certain tasks and the introduction of some new ones, or the elimination of certain positions and the creation of new positions. Rate how problematic the following barriers were for implementation of this reform." Response options: highly problematic, problematic, somewhat problematic, hardly problematic, or unproblematic.

and organizational resistance was the second most important factor explaining the failures of this type of system throughout the world, second only to the scarcity of the appropriate talent (Dener et al., 2011).

This chapter aims to guide the management of the job disruptions that digital transformation creates for existing civil servants. It will explain how to encourage adoption of new technologies by civil servants, how to facilitate transition to their new tasks and roles, how to manage the elimination of jobs, and how to mitigate resistance to change.

In general, digital transformation generates two types of disruptions to the roles of civil servants: **modification** and **elimination**. Figure 5.1 illustrates possible pathways open to an employee who experiences one of these changes.

This chapter draws evidence from multiple sources.

FIRST, IT ANALYZES THE EXPERIENCE OF VARIOUS PUBLIC INSTITUTIONS THAT HAVE TACKLED CHALLENGES ASSOCIATED WITH HUMAN CAPITAL WITHIN THE CONTEXT OF DIGITAL TRANSFORMATION.

Since the implications of this process are a relatively new reality for governments, the chapter presents an initial approach to the theme through cases gathered from around the world that satisfy the following criteria:

- They include a digital transformation that changed the way in which the organization fulfills its mission.

- They incorporate actions to facilitate civil servants' adaptation to change.

- They provide evidence that those actions, and the digital transformation in itself, were effective.

In some cases, these experiences were complemented with cases from private firms, accounting for the differences between the two sectors. Annex 5.1 presents the description of all the cases studied.

The chapter summarizes the results of a survey of more than 700 managers at the regional level and surveys of civil servants in Chile and Colombia. It also analyzes a series of practices implemented in countries that are seen as digital leaders and cites secondary literature in the corresponding specialized themes (e.g., technology adoption, change management, and leadership).

ESSENTIAL ACTIONS FOR TACKLING JOB DISRUPTIONS: DIAGNOSTICS, PLANNING, CHANGE MANAGEMENT, AND TRAINING

THE DISRUPTIONS THAT DIGITAL TRANSFORMATION BRINGS TO THE WORK OF CIVIL SERVANTS REQUIRE THAT PROACTIVE AND DETAILED ATTENTION SHOULD ADDRESS THE FOLLOWING: ADOPTION OF NEW TOOLS, SUPPORTING THE PROFESSIONAL DEVELOPMENT OF CIVIL SERVANTS, AND MITIGATING POSSIBLE RESISTANCE TO CHANGES THAT COULD IMPROVE THE INSTITUTION'S EFFECTIVENESS, EFFICIENCY, AND PUBLIC STANDING.

The previous chapter showed that, although only 6 percent of the Chilean civil servants surveyed held jobs with a high automation potential, 46 percent perform functions with a medium potential. The cases analyzed also revealed that many roles can change substantially due to digital transformation, and that the percent of roles eliminated entirely is generally low.

THE MODIFICATION OF A ROLE CAN OCCUR IN DIFFERENT WAYS:

When routine transactions are automated, some of the tasks that the employee used to perform disappear (e.g., the need to process documents for a transaction is eliminated following the introduction of an interoperability platform, or an IFMIS obviates the need for manual data entry).

Introducing new technologies changes the way the civil servant performs a task (e.g., opening a new virtual services center to serve the public).

The creation of new tasks within an existing role, which implies that civil servants have to perform a task they did not previously perform (e.g., analyzing data from digital transactions).
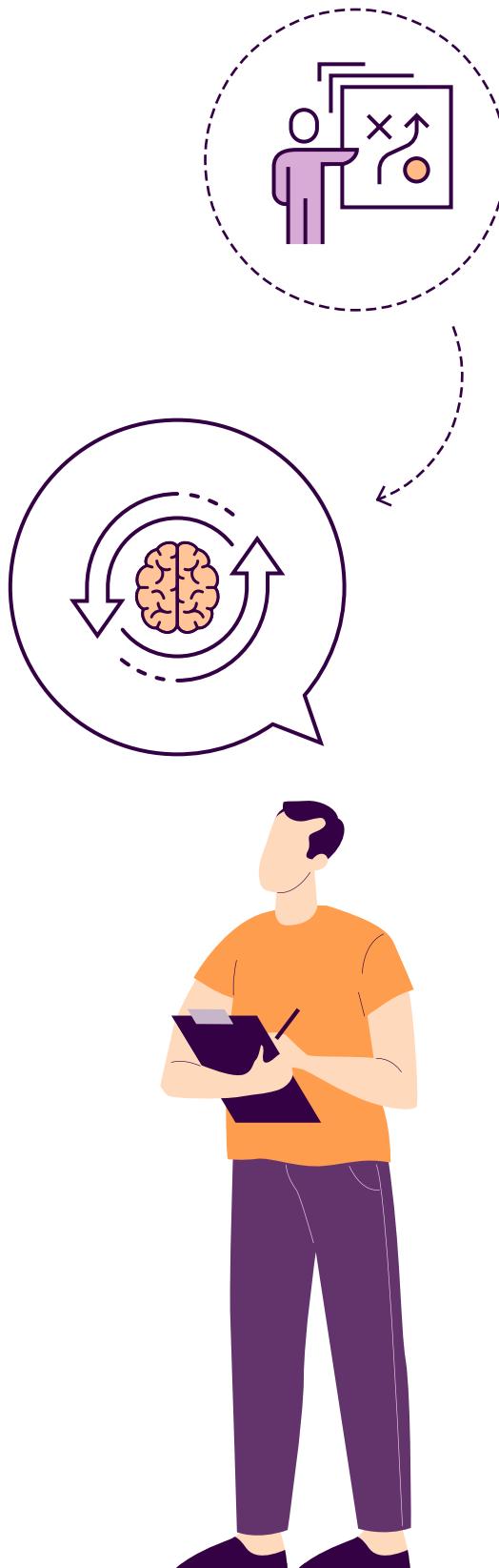
The cases studied present various examples of job modifications. In 2018, the Attorney General's Office of Buenos Aires, Argentina, implemented Prometea, an artificial intelligence tool that automated 57 percent of the tasks previously carried out by the institution's 60 prosecutors (Estevez et al., 2020). The main impact of Prometea was faster management of the most common cases, which enabled prosecutors to devote more time to more complex tasks and other duties without the need for additional training.

Another example is the Inland Revenue Authority of Singapore (IRAS), which implemented a robotic process automation (RPA) solution to carry out more than 70 tasks and implemented social network analysis (SNA) to detect and prevent fraud.

THE RPA RESOLVED 96 PERCENT OF REQUESTS FOR TAX EXTENSIONS, WHILE THE SNA REDUCED BY 14 PERCENT THE NUMBER OF HOURS OF WORK NEEDED TO DETECT FRAUDULENT CASES.

IRAS civil servants had to train extensively in the use of these new tools, learn to carry out data analysis, and perform other tasks that increased the value added of the new processes (LSE, 2019).[84]

The following three types of actions were implemented in the cases analyzed to manage the disruptions (both job modification and job elimination) that digital transformation brings for civil servants: (i) diagnostics and planning, (ii) change management, and (iii) training.

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84.   Annex 5.2 presents the case of how digital transformation is changing the role of regulator, one of the basic roles of government.

1

DIAGNOSTICS
AND PLANNING:
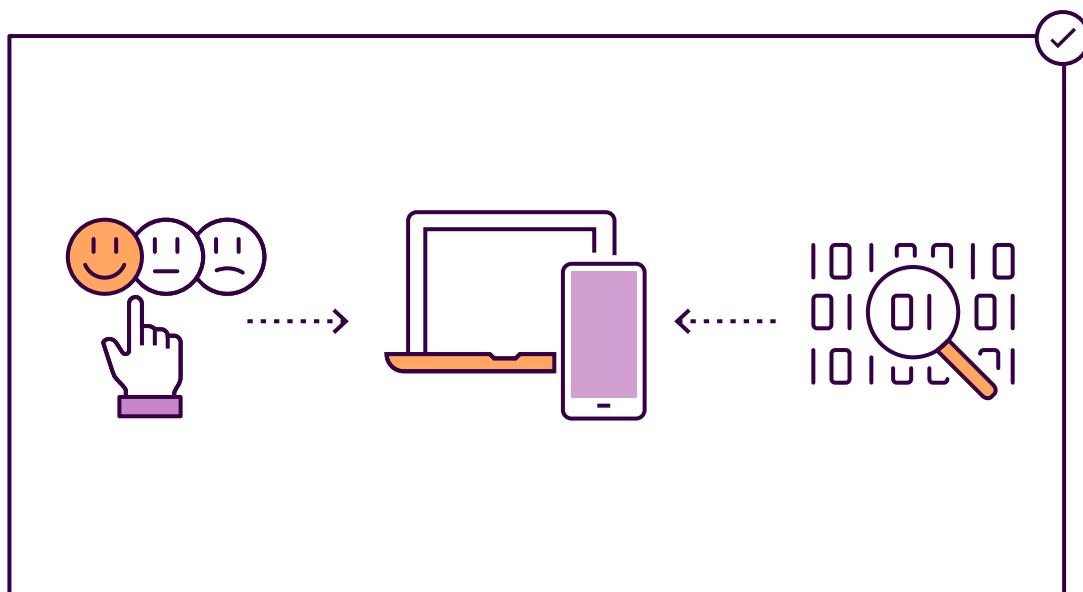
UNDERSTANDING THE
DISRUPTIONS THAT DIGITAL
TRANSFORMATION BRINGS TO
HUMAN CAPITAL AND PLANNING
TO ADDRESS THEM

Which positions are going to change as a result of the digital transformation of a public institution, in what way, and who currently occupies them? These are the first questions that all the examples analyzed addressed in one way or another once planning got underway to favor the adaptation by civil servants to digital transformation.

Institutions must conduct assessments and planning exercises to identify in detail both the impacts of digital transformation on each civil servant and the possible individualized pathways to follow, especially with respect to the difficult decision of whether to retrain or release employees whose tasks have been eliminated. The cross-government plans (generally developed by civil service or digital government authorities or by ministries of finance) can also help respond to the common challenges that arise from many institution-level digital transformations, often pertaining to the willingness and capacity of civil servants to adopt new technologies.
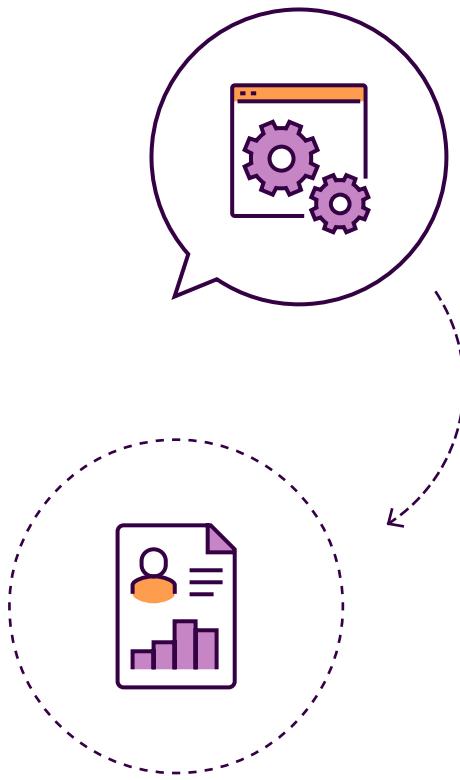
Assessment and planning are also crucial for organically bringing about possible savings in payroll expenses. By finding out which jobs will no longer be necessary following digital transformation and who occupies them, it is possible to identify opportunities for eliminating those positions by attrition. This occurs, for example, in cases where redundant positions are held by civil servants close to retirement age, temporary workers, and civil servants or contractors who have another job opportunity within the institution. This enables avoiding the common mistake of recruitment inertia.

An example of a public institution that tackled digital transformation, and that began by developing a plan for its human resources, is Her Majesty's Courts and Tribunals System (HMCTS) in the United Kingdom. In 2016, HMCTS implemented a digital reform that led to the elimination of between 5,000 and 6,000 jobs (approximately a third of the staff) and the transfer of 5,000 civil servants to new centralized points of service that had been created and that were going to change the way in which justice services were provided by opting for the use of digital tools.

A Personnel and Cultural Transformation (PACT) plan outlined the need to foster worker adaptation. This tool, implemented at the beginning of the transformation, included four areas of action: (i) design of the future organization; (ii) development of future job descriptions; (iii) design of policies and methods to support talent recruitment and retention, detection of redundancies, and relocations; and (iv) assessment of the new skills and competencies needed (LSE, 2019).

Similarly, in 2017, the New Zealand Inland Revenue Service initiated a business transformation program that included significant digitization that would modify up to 75 percent of its jobs. The entity incorporated into its transformation plan a redesign of staff management practices that focused on diversity and adaptability of the civil servants' skills and attitudes. The organization changed its job descriptions from a traditional approach, based on tasks to be performed, to a new one in which the role is described according to the skills needed to carry out the work and the expected results. Toward the end of 2019, approximately 4,000 civil servants had transitioned to the new skills-based profiles. Efforts were centered on active learning, task adaptability, and flexibility of the human resources to be deployed in different positions based on the demands of the organization (LSE, 2019).

SEVERAL LEADING COUNTRIES IN THIS **AREA HAVE INCLUDED A SPECIFIC HUMAN RESOURCE PLAN** WITHIN THEIR NATIONAL DIGITAL TRANSFORMATION STRATEGIES.[85]

The Spanish government designed a training plan for all its agencies according to the cross-cutting digital services used throughout the public administration (electronic signature, interoperability, payments platform, etc.). The objective of this plan, which was led by the General Secretariat for Digital Administration (Secretaría de Administración Digital, or SGAD), is to encourage the adoption of these tools by their possible users in the civil service, throughout all levels of government (SGAD, 2019; Merchán, 2019).

85.   For example, Estonia, Israel, New Zealand, Singapore, and the United Kingdom.

Singapore has also incorporated an instrument to support civil servants and provide them with the skills needed for innovation into its digital government strategy (Smart Nation Digital Government Group, 2018). The strategy establishes that the government must have a "digitally confident" workforce, with the capabilities needed to operate digital tools in the workplace. For this purpose, it promotes training for its civil servants in basic digital skills and sets a goal of having trained 100 percent of government officials by the year 2023. Likewise, the strategy establishes that, for the same year, the government will have trained 20,000 technicians in data analysis. To support these new capabilities, the government promoted a mindset whereby civil servants are encouraged to experiment with new ideas and ways of working in their day-to-day tasks.

Similarly, Canada included in its federal data strategy for the public service a line of work related with human resource management for digital transformation (Government of Canada, 2018). It starts from the premise that the government can better serve its citizens if it does so digitally and based on data. It therefore recognizes that civil servants must be able to adequately compile, interpret, use, and process data. To achieve this, it establishes actions to promote the skills needed for digital transformation in any public institution, divided into four large groups:
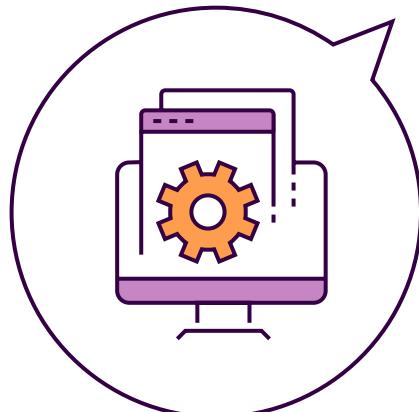
Evaluate the civil servants' current level of digital skills.

Develop pilot programs and launch a digital academy to develop the digital skills of existing civil servants.

Ensure that the government establishes competitive and innovative hiring processes.

Renew all human resource practices throughout the government (including recruitment, talent management, training, performance management, and job classification) to support data analysis and the creation of a digital community.

IN URUGUAY, THE AGENCY FOR THE DEVELOPMENT OF ELECTRONIC GOVERNMENT AND KNOWLEDGE AND INFORMATION SOCIETY (AGENCIA DE GOBIERNO ELECTRÓNICO Y SOCIEDAD DE LA INFORMACIÓN Y DEL CONOCIMIENTO, OR AGESIC) HAS ESTABLISHED AN ORGANIZATIONAL TRANSFORMATION MODEL THAT IS A HYBRID BETWEEN A VERTICAL AND A CROSS-CUTTING APPROACH.
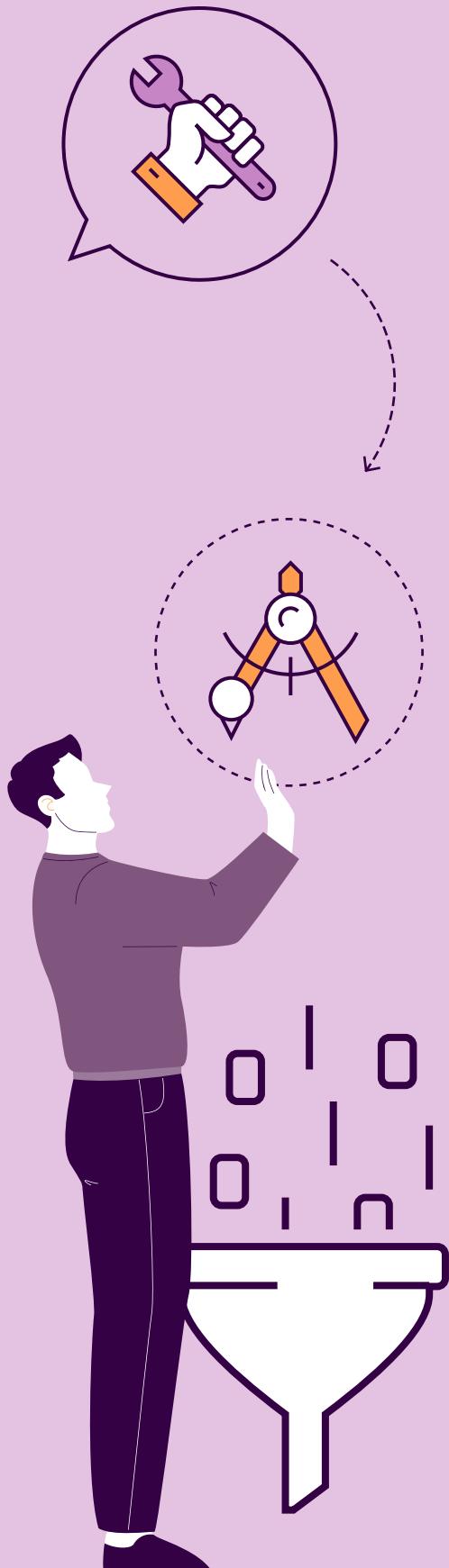
It consists of a personalized plan drawn up jointly by AGESIC and the different institutions involved that addresses digital reform by tending to the specific needs of that entity with regard to awareness-raising, training, and other change management measures. This personalized plan is aligned with the national digital strategy.

BOX 5.1 How Do Private Sector Organizations Plan the Adaptation of Human Capital to Digital Transformation?

In 2013, following a study of the future of the telecommunications market, new customer demands and impending technological changes, the U.S. telecommunications company AT&T concluded that its business model needed to change from a telephone company to a data company. Consequently, it calculated that approximately 100,000 jobs (more than a third of the total workforce) would be obsolete by 2020. Its leaders decided to address this drastic change by banking on existing personnel and embarking on one of the largest workforce retraining initiatives seen in recent business history, which it dubbed Workforce 2020 (Pressman, 2017).

AT&T designed a road map to transform its human resources. It was based on identifying the skills that would be needed in the future and preparing its employees for the new tasks deriving from the change of business model, which would enable the firm to address the new demands with the available workforce. The firm identified the skills gaps and designed the roles of the future. It consolidated 250 existing profiles and reduced them to 80 to simplify and standardize the job structure and thereby facilitate internal transfers and the development of skills that would serve multiple positions. Furthermore, to motivate employees to train, it established a new way of measuring employee performance that focused on each person's contribution to the goals of the organization. In this way, it demonstrated that the employees with the right skills were the ones who contributed most to company growth (Donovan and Benko, 2016).

Volkswagen, the German automobile company, is another example of how to plan staff adaptation to digital transformation. For each project valued at more than 1 million euros (a low threshold, considering that the firm recorded sales of over 230 billion euros in 2018), project leaders must specify in the plan how that project will affect the number and the profiles of the workers required, identify the training needed, and set aside part of the budget to retrain the workers affected.

2

CHANGE MANAGEMENT:
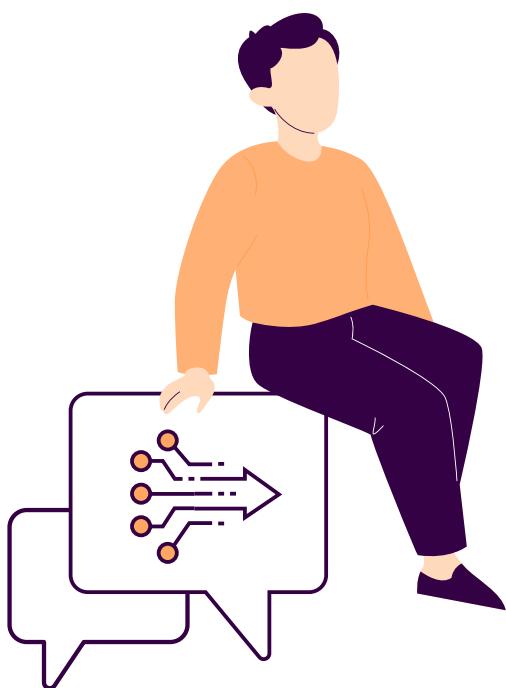
ADVANCING DIGITAL TRANSFORMATION WITH THE SUPPORT OF THE ENTIRE INSTITUTION

STRONG, VISIBLE, AND PARTICIPATORY LEADERSHIP

Implementing digital transformation and the changes that it brings to the work of civil servants can be hampered by employee resistance to the reforms or to the adoption of the new technological tools. The organizations studied have taken different actions to facilitate the implementation of digital transformation, encourage the adoption of new tools, and promote cultural change. Four of these actions—establishing strong, visible and participatory leadership; encouraging active participation and open communication; encouraging learning; and engaging in dialogue with unions—are analyzed below.

One of the keys to exploiting the potential of digital transformation to the maximum and guaranteeing the success of the changes for human resources is that all efforts must enjoy the direct and visible support of the institutional leaders. Senior managers must become the ambassadors of the transformation and give it their full attention to ensure that everyone adopts the strategies, systems, and modifications. Furthermore, managers must clearly convey how the changes will affect civil servants to manage expectations and create the environment for a smooth transition. Digital transformation is similar to other substantial organizational transformations for which the importance of leadership has been well documented (Boomer, Rich, and Rubin, 2005; Devos et al., 2003; Furst and Cable, 2008; Moynihan, Pandey, and Wright, 2012; Oreg, 2006; Oreg and Berson, 2011; Szabala, 2007).

Several of the experiences analyzed illustrate the role played by institutional leaders in human capital adaptation processes. In the case of the Superintendency of Social Security (Superintendencia de Seguridad Social, or SUSESO) of Chile, which implemented an electronic records system (among other technological and institutional changes) in 2018, senior management played an active role in promoting digital transformation and in responding to the concerns of civil servants, whose average age was 50. They announced at the beginning of the reform that nobody was going to lose their job, and they held a series of breakfast meetings with workers to discuss the modifications and hear their concerns.

At Argentina's State Property Management Agency (Agencia de Administración de Bienes del Estado, or AABE), senior management expressed support for the implementation of the electronic records system, a process that got underway in 2016 as part of a national electronic document management initiative. This greatly helped institutional adoption of the tool and aided the transition of personnel to their new roles by indicating that the change was supported from above. The managers of the different areas of the institution also supported the changes and were crucial for facilitating adaptation by the workers.
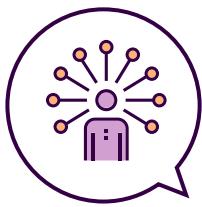
The leaders of the IRAS in Singapore played an active role in announcing the change to their civil servants through communication sessions, workshops, and general meetings. Those initiatives reached 80 percent of the institution's workforce and were fundamental in channeling questions and concerns. Furthermore, the leaders also attended training workshops on technical topics, such as data analysis, and on soft skills, such as leadership and teamwork, to lead by example.

SEVERAL COUNTRIES HAVE ALSO **CREATED DIGITAL LEADERSHIP PROGRAMS TO TRAIN CHANGE AGENTS IN KEY POSITIONS OF THE PUBLIC ADMINISTRATION** AND TO PREPARE THEIR OWN MANAGERS FOR THE COMING CHANGES TO THEIR WORK.

Israel has launched an initiative called the Digital Leaders Program, which attempts to create change agents in the government, beginning with professionals from the budget and the legal areas, two key functions in carrying out any significant institutional reform. It seeks to raise civil servants' awareness of the relevance of digital projects and their implications. It also promotes agile, iterative, and citizen-centered work methods, as well as spaces for civil servants of different agencies and levels of government to exchange ideas. The program consists of in-person training twice a month over ten months, and concludes with an educational trip to pioneering universities to learn about digital transformation directly from the experts. By 2019, four groups of 30–40 leaders had been trained (Digital Israel, 2019).

Canada, the United Kingdom, and Uruguay also offer training for digital leadership. Canada has an executive program for leaders, which trains groups of managers in design thinking,[86] digital technologies, and data through a five-day bootcamp in which they also learn how to take those skills back to their organizations. In the United Kingdom, the school of the Government Digital Service, the GDS Academy, holds intensive three-day courses in digital skills, leadership, and team management for those responsible for digital services. In Spain, the SGAD offers specific training of between three months and a year for new managers. In Uruguay, AGESIC provides courses for leaders, middle managers, and technical staff from public institutions, which focus on providing the socio-emotional skills needed for digital transformation, technical knowledge of existing technologies, their possible uses and applications, and their potential to help advance the organization's mission.

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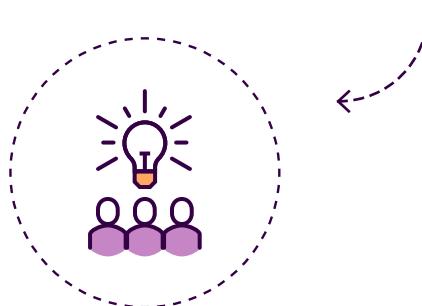
86. According to the Interaction Design Foundation, design thinking is defined as an "iterative, non-linear process that teams carry out in order to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. It consists of five phases: empathize, define, ideate, prototype and test. It is most useful for tackling unknown problems or those without a concrete definition" (Teo Yu Siang and Interaction Design Foundation, 2018).

ACTIVE PARTICIPATION
AND OPEN COMMUNICATION

Active participation by civil servants and open communication are two essential elements for managing any process of organizational change (McKay et al., 2013; O'Brien, 2002; Rogiest et al., 2015; Scott-Ladd and Chan, 2004, among others). These strategies can be particularly important for digital transformation given the uncertainty it can create. The cases analyzed illustrate ways to put them into practice.

Several institutions took the approach of identifying the people who were more—or less—willing to embrace change and to work with them individually. In Chile, the change management process at SUSESO, which got underway at the same time as the digital reform and lasted for two years, classified all civil servants into the following categories according to their willingness to embrace reforms: leaders, allies, indifferent, resistant, and critics. They focused their efforts on the two extremes of the spectrum. The leaders, who were identified by their operational connection with the changes, their capacity to influence, and their positive attitude, formed work groups to test the different tools during the design phase and to participate in the first training sessions. They were also expected to promote the reforms among their colleagues. Those who were initially indifferent (21 of the 112 civil servants who would be users of the new electronic records system) and the critics (28) were included in the first phase of the tests to address their concerns and reassure them as soon as possible. At the beginning of 2020, it was noticeable that the change management efforts had been successful, since 100 percent of the potential users of the electronic records system were effectively using it.

Several other cases used the strategy of creating change agents. The IRAS of Singapore established a change management strategy in which around 20 percent of the civil servants became change agents on behalf of the digital transformation. These workers attended discussion sessions and informal focus groups in which they shared their experiences about training and their adaptation to the new roles. In Argentina, managers at the State Property Management Agency selected the youngest civil servants affected by the transformation to guide the older civil servants.

APART FROM THE TASK OF PERSUASION, INVOLVING CIVIL SERVANTS DIRECTLY IN THE DESIGN OF THE NEW TOOLS CAN HELP TO DEMYSTIFY THEM, REDUCE OPPOSITION TO THEIR INTRODUCTION, AND INCREASE THEIR USE, AS WELL AS IMPROVING THE TOOL AS SUCH.

This is what the Singapore IRAS did when it allocated around US$1 million per year to an innovation seed fund to enable civil servants to develop prototypes and experiments (GovTech, 2018). One result of this investment was the creation of an online chat service proposed by the workers. Following an experimental phase, the service was implemented and boosted productivity in customer service by 30 percent (PSD, 2018). In Chile, the SUSESO adopted a similar mechanism by involving a group of civil servants, identified as being predisposed to change and with capacity to influence, to participate in the operational testing of the electronic records system. In this way, not only were their suggestions incorporated, but they were also able to transfer their knowledge of the new system to their colleagues.

Innovation laboratories are another instrument that can prove useful in organizing civil servant participation in the design of new technological tools. These spaces, very common in LAC, are generally multidisciplinary, neutral, and without hierarchies, which means that they invite the open participation of the workers involved (Acevedo and Dassen, 2016). In the case of the reform of New Zealand's passport office, which embarked on service digitization and internal process automation in 2012, key civil servants, private sector partners, non-governmental organizations, business leaders, and citizens were invited to join the innovation laboratory. The civil servants involved in the project were able to participate freely in developing the new tool and receive training from the digital experts involved.

With regard to communications, HMCTS in the United Kingdom, through its Personnel and Cultural Transformation (PACT) program, created a blog in which it published all the information about the process of change and addressed the most common concerns, enabling all of its civil servants to have access to up-to-date and valid information regarding the transformation. The PACT also implemented the One Conversation initiative, which included open meetings in which the staff could ask questions of their managers about what the reform meant and implied for them (HMCTS, 2018).

INCENTIVES FOR LEARNING

Learning a new function or switching a career requires effort. Abundant literature documents the reasons why an employee might not want to retrain, due to both individual and organizational factors (see the meta-analysis of Colquitt, Lepine, and Noe, 2000). A key reason is that a worker may not clearly see the benefit of embarking on an intensive training course. In this context, establishing a system of incentives for learning can be useful. If the training takes place outside of working hours, the incentives should motivate people to dedicate their free time to it; if training happens during working hours, incentives may have to be established to ensure that managers permit and promote it, since training will reduce the time available for day-to-day tasks.

One option for encouraging learning is related to performance evaluations and/or possibilities for professional growth. This changes the cost–benefit calculation for the employee who is considering training, since it makes learning one of their job responsibilities. New Zealand's Inland Revenue Service, which initiated a business transformation program centered on the digitization of services in 2017, modified its performance evaluations to include soft skills that reflected the nature of the digital transformation (such as inter-institutional collaboration, team work, and leadership, among others) and technical skills, such as data analysis and digital capacities. In the private sector, the AT&T's Workforce 2020 program elevated the importance of learning by linking it to the performance evaluations of more than 280,000 employees. Furthermore, the company redesigned its entire evaluation system to simplify the indicators that

measured performance and align them with the market value of the jobs. To this end, it also increased the economic incentives for those employees with sought-after skills, such as cybersecurity, computer science, and data analysis (Donovan and Benko, 2016).

Linking incentives to performance evaluations is only a viable option if these evaluations are functional. Most LAC countries and several OECD countries face important challenges in this regard (IDB-OECD, 2020). The civil service assessments carried out by the IDB (2014–2019) revealed a series of challenges, such as the lack of performance standards, the use of evaluations that are more theoretical than practical, and a lack of alignment with performance management systems at the institutional level, among others.
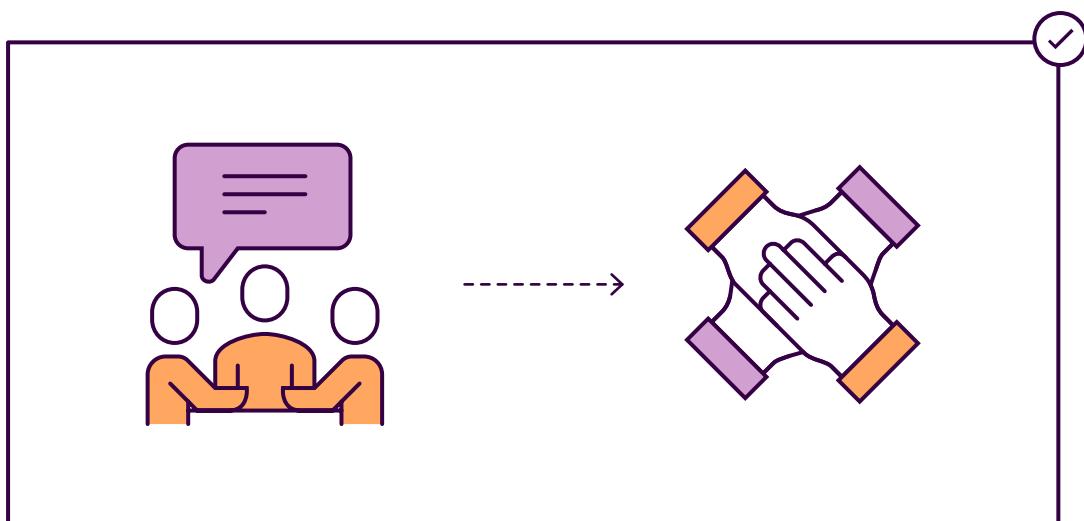
Another option consists of using monetary incentives to encourage learning. In Singapore, a government program called Skills Future offers all citizens a subsidy of approximately US$370 to use for training and guarantees that all employees will be entitled to ten days off per year for training purposes. Furthermore, as detailed in Annex 5.3, many organizations provide grants and financial support to their workers to help them pursue university degrees in fields related to digital transformation.

DIALOGUE WITH UNIONS

Unions[87] play an important role in defending workers' rights. They also exert significant political muscle in many public institutions in LAC. It is therefore fundamental to include them in institutional change processes, ideally starting at the design stage.

Several of the cases analyzed show examples of union participation. In the United Kingdom, a monthly forum was held at HMCTS with the unions to discuss the impact on staff of key aspects of the digital reform, as well as efforts to mitigate any negative effects on the workforce (Argar, 2018). In Chile, while SUSESO did not develop a formal initiative with the civil servants' association (which represents around 90 percent of its civil servants), it made an effort to include civil servants who participated actively on the board of this association in change management activities.

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87.   In certain countries, known as civil servants' associations.

3

CAPACITY BUILDING:
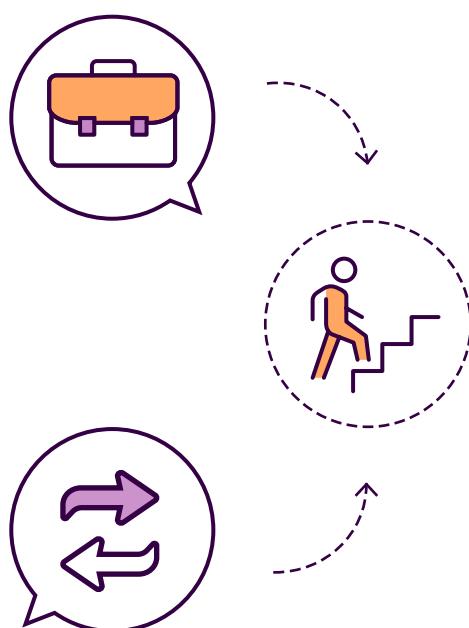
ADDRESS THE SKILLS GAPS CAUSED BY DIGITAL TRANSFORMATION

One of the main effects of digital transformation for civil servants is the need to acquire new skills, because either their tasks were modified or they were eliminated and the worker is transferred to a different position (as shown in Figure 5.1 in the Introduction to this chapter). Failure to acquire the new skills needed may lead to low levels of uptake or outright failure of the new systems, and/or poor performance in the new position. As documented in the previous chapter, training systems in LAC face important challenges in terms of relevance, quality, adequacy, and coverage. This section describes briefly the types of training employed in the cases studied and provides a synthesis of best practices for training (Box 5.2). Annex 5.3 explains the approaches in greater detail.

FORMAL TRAINING

In the cases analyzed, formal training was the main solution implemented to provide civil servants with the skills needed to carry out their jobs following changes derived from digital transformation. However, it was not the only one. The range of training options is wide, with different formats, duration, content, and objectives. Given such heterogeneity, most of the organizations studied offer multiple options to maximize the chances of finding a formula that enabled employees to learn new skills in the necessary time frame. Regardless of the format, the training provided in the examples analyzed had several common elements. First, they offer both technical and socio-emotional skills. Second, training is not dictated from above; rather, it addresses the needs of each employee and specifically to the skills gap. Third, many programs are based on the premise that learning is a continuous process and are designed to help this to happen.

FINALLY, MOST OF THEM SEEK TO RECONCILE LEARNING WITH WORK, ATTEMPTING TO PROVIDE SOLUTIONS THAT ALLOW EMPLOYEES TO TRAIN WITHOUT HAVING TO LEAVE THE WORKPLACE.

COMMUNITIES
OF PRACTICE

Communities of practice are spaces where people with similar interests get together to exchange ideas and information, develop skills in an informal setting and in courses promoted by the community, and work to advance knowledge in a given area. They are especially useful when the knowledge they seek to promote is new, as often occurs with digital transformation, permitting discussion and diffusion of innovative themes. The Internal Revenue Authority of Singapore used this methodology to train 20 percent of its workforce in different areas following the implementation of Robotic Process Automation (RPA). One of the communities focused on developing advanced RPA skills, and 40 percent of the members of that community of practice received a certificate in RPA after participating in a rigorous two-week technical course. It is worth highlighting that 80 percent of those who received the certificate came from a non-ICT professional background (LSE, 2019). The AGESIC of Uruguay and the United Kingdom's GDS have both sponsored communities of practice to encourage knowledge in different topics around digital transformation.

INNOVATION
LABORATORIES

Innovation laboratories are spaces for co-creating new digital tools and training in emerging skills. An example is the Argentine government's Public Policy Design Academy (Academia de Diseño de Políticas Públicas del Laboratorio de Gobierno de Argentina), whose objective was to teach civil servants to innovate and create a culture of continuous learning throughout government. It taught civil servants skills ranging from citizen-centered design to evidence-based policymaking. To attract students, it used an incentive method in which civil servants earned points for each class that they attended. These points could be exchanged for promotions and salary increases as part of the civil service results evaluation system (in line with that described in the section on incentives for learning). By mid-2019, more than 15,000 civil servants had attended the courses (Apolitical, 2018).

BOX 5.2 Success Factors in Training

Capacity building is a key tool for keeping workforce skills relevant in times of digital transformation and for facilitating job transitions. The literature, derived mainly from the private sector, identifies a series of principles that can increase the effectiveness of training.

FOR ALL TRAINING:

Align training with the needs of both the individual and the organization (Montesino, 2002; Olsen, 1998; Rossett, 1997).

Plan and begin early. Employees tend to feel more motivated, and therefore more receptive to training, if the institutions inform them beforehand about the coming changes with sufficient time (Hyman, 2018).

Encourage support for peer-to-peer learning. Interaction between colleagues can facilitate learning through feedback, encouragement, help with occasional problems, or the provision of additional information (Facteau et al., 1995; Gilpin-Jackson and Bushe, 2007; Hatala and Fleming, 2007).

Show support from leadership. If managers support the training, the employees are allowed to attend, or the managers themselves participate, then the level of learning tends to improve (Birdi et al., 1997; Brinkerhoff and Montesino, 1995; Broad and Newstrom, 1992; Burke and Baldwin, 1999).

Apply what was learned immediately. Whatever is being learned, the student must take time and effort to practice, since a new skill needs continuous practice before it can be fully developed (Busso et al., 2017). At the same time, it is important to receive feedback and support to be able to improve during the learning process, since learning and practicing without the opportunity for feedback is of little use (Burke and Hutchins, 2008; Colquitt et al., 2000; Kontoghiorghes, 2001; Lim and Morris, 2006; Rouiller and Goldstein, 1993; Tracey et al., 1995). Once the new skill has been acquired, it is essential to keep using it frequently. Investment in human capital tends to depreciate with the passage of time if the skills are not used (Valerio et al., 2018).

Protect learning from interruptions. Capacity building is more effective when learning takes place in an environment free from interruptions. This is especially important when it comes to learning highly technical disciplines (Li, 2016). The same applies in cases of on-the-job training.

Monitor the training. Mechanisms such as performance evaluation, peer meetings, consultations with supervisors, and technical support can help students to better consolidate the material learned (Robinson and Robinson, 1989).

Maximize willingness. The more motivated the employee by the subject matter or the opportunity in question, the better they will assimilate the training material (Busso et al., 2017).

FOR TRAINING SPECIFICALLY IN CONTEXTS OF RESKILLING, THE FOLLOWING IS RECOMMENDED:

Minimize the learning needed. The more similar the new role to the current role, the easier it will be for the employee to retain what has been taught during training (Busso et al., 2017).

Make sure that the depth of the transition and the investment in capacity building are coherent. Large-scale job transitions require substantial investments in capacity building. Superficial training for complex transitions runs the risk of not fully equipping the employee and, therefore, not being effective (Hyman, 2018).

HOW TO IMPLEMENT JOB TRANSITIONS WHEN ROLES ARE ELIMINATED

Although the hope is that most roles affected by digital transformation will transform through the incorporation of new technologies or ways of working, some will inevitably be eliminated. The survey carried out in the Chilean public sector concluded that 6 percent of jobs have a high automation potential. The same findings emerged in the cases studied. For example, around 10 percent of jobs at Argentina's AABE became outdated following the implementation of an electronic records system in 2016. That technology caused the same rate of obsolescence at the SUSESO in Chile. In both the Chilean survey and in the case studies, the roles most susceptible to elimination following digital transformation were those that involved the management of physical documents (e.g., reception desks).

When a role disappears, the civil servant may have one of four options: (i) retraining for another task in the same institution; (ii) doing the same job in another area or institution where that function is still performed; (iii) changing roles temporarily while waiting for a definitive job transition;

or (iv) terminating the employment relationship. Although the second option was uncommon in the cases analyzed, the third is less optimal insofar as temporary tasks have less strategic value for the organization.

THEREFORE, THE DISCUSSION THAT FOLLOWS FOCUSES ON THE TWO MOST COMMON ALTERNATIVES THAT SEEK TO MAXIMIZE THE MOTIVATION OF THE CIVIL SERVANT, THE EFFICIENCY OF PUBLIC RESOURCES, AND ORGANIZATIONAL PERFORMANCE: RETRAINING OR TERMINATING THE EMPLOYMENT RELATIONSHIP.
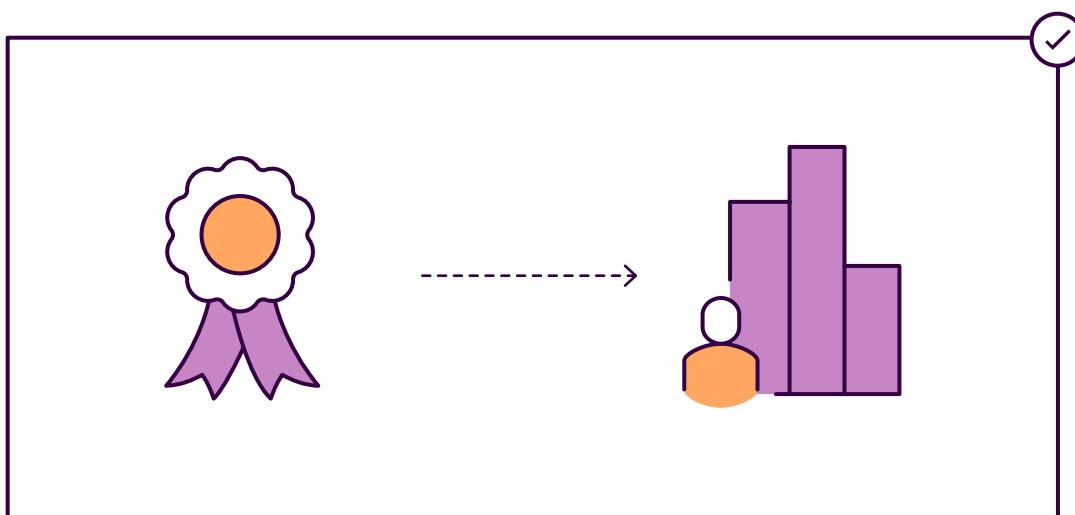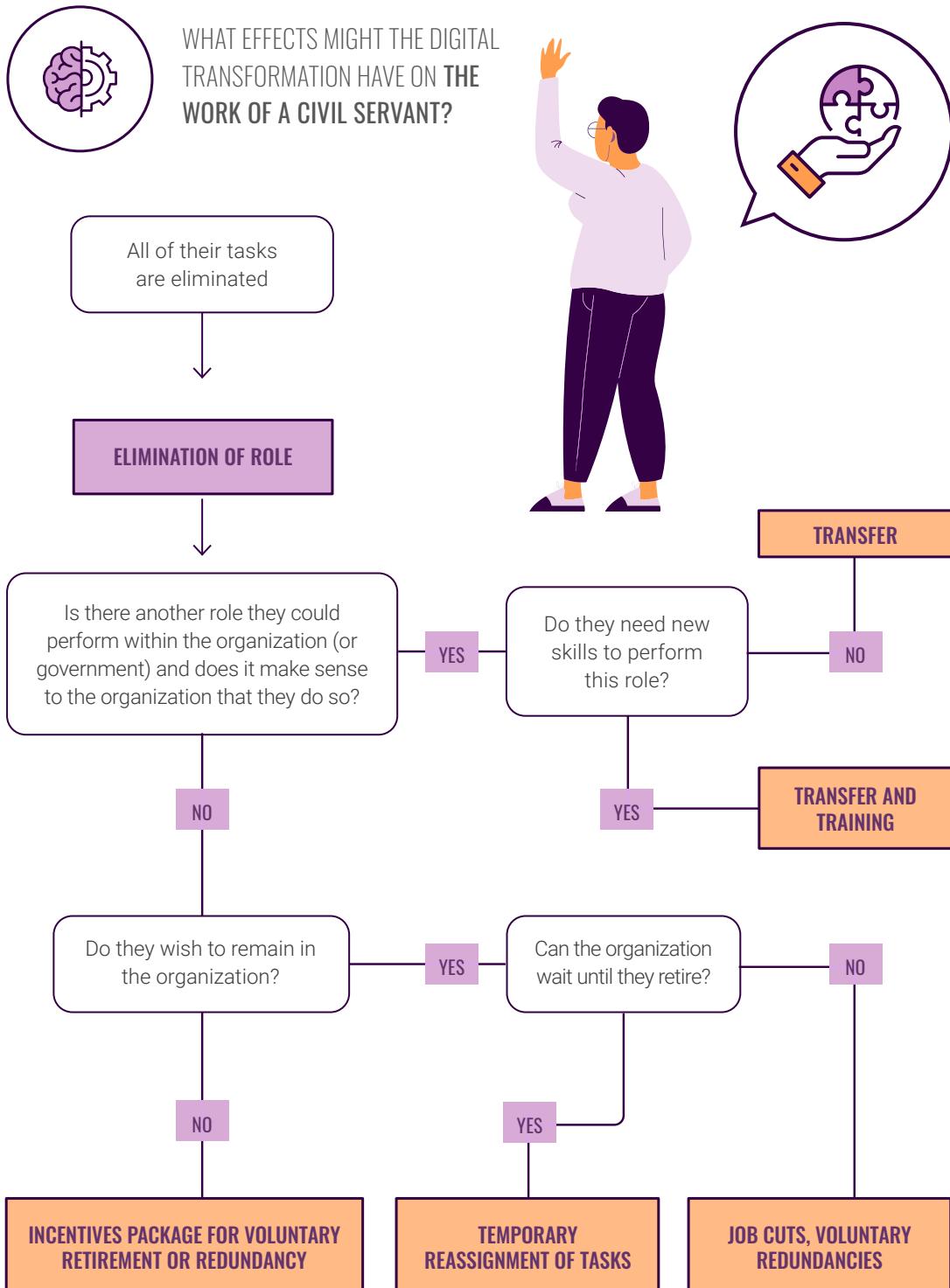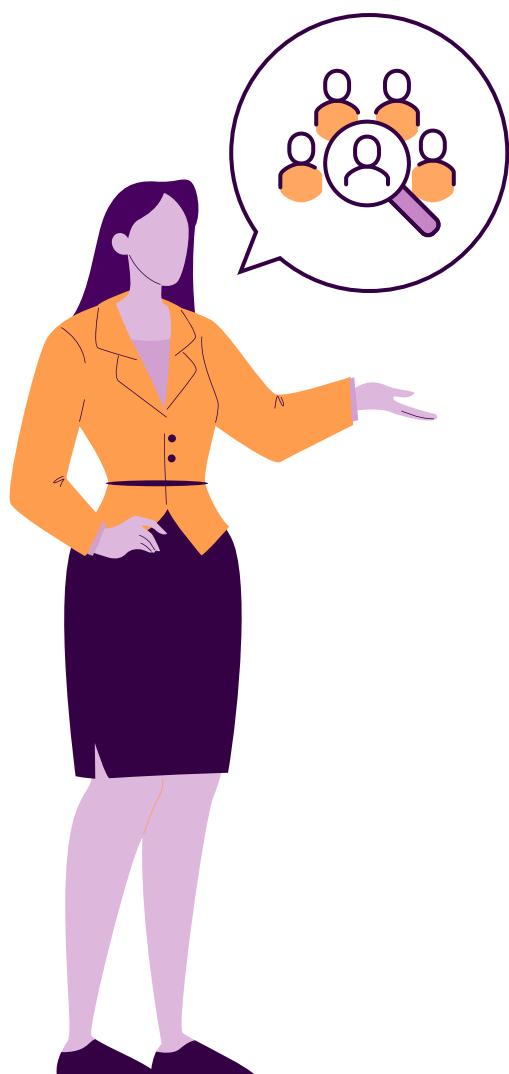
FIGURE 5.2 Possible Pathways for Civil Servants When Tasks Have Been Declared Redundant

WHAT EFFECTS MIGHT THE DIGITAL TRANSFORMATION HAVE ON **THE WORK OF A CIVIL SERVANT?**

All of their tasks are eliminated

ELIMINATION OF ROLE

Is there another role they could perform within the organization (or government) and does it make sense to the organization that they do so?

YES → Do they need new skills to perform this role?

NO → **TRANSFER**

YES → **TRANSFER AND TRAINING**

NO → Do they wish to remain in the organization?

YES → Can the organization wait until they retire?

NO → **JOB CUTS, VOLUNTARY REDUNDANCIES**

YES → **TEMPORARY REASSIGNMENT OF TASKS**

NO → **INCENTIVES PACKAGE FOR VOLUNTARY RETIREMENT OR REDUNDANCY**

Source: Authors' elaboration, IDB (2020).

Note: When selecting any of these options, the corresponding employment regulations must be applied.

1

WHEN IS RETRAINING BEST AND WHEN IS REDUNDANCY PREFERABLE?

The experiences analyzed show that the decision of how to manage the disappearance of tasks can be evaluated both at the institutional and the individual level. At the institutional level, the main motive behind the digital transformation (whether to reduce costs, improve services or both) and its socio-political context, are cross-cutting elements such as the organizational climate and the aggregate of individual situations. In general, the greater the urge to improve services, the more importance is given to retraining (seeking to strengthen service delivery through the work of civil servants whose time has been freed up). At the individual level, multiple factors are considered. First, an analysis is made of whether there is a new role that the civil servant might possibly perform and whether the legal framework allows such a change to be made. Then, management compares the full costs and benefits of the reskilling and redundancy options. The costs of retraining and the benefits in terms of productivity of those who already know the organization are estimated. Then, the costs of making a civil servant redundant are estimated, along with the costs of recruitment and paying a salary to a professional from outside that would require less training, and the benefits in terms of increased productivity that this option might bring (including the possible learning curve to be faced). It is important to highlight that costs are not only financial, but also include bureaucratic effort and the effect on the morale of the civil servants.[88] For effective decision making, each of these considerations must be rooted in the context of each institution.

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88.   Other factors may also impact this decision, such as, the importance of knowledge of the organization and/or internal networks.

FINANCIAL COSTS

Both retraining and redundancy followed by hiring new staff have financial costs.

THE COST OF RETRAINING DEPENDS ON THE EXTENT OF THE CHANGE OF ROLE BEING SOUGHT. IN SOME CASES, THIS COST CAN BE CLOSE TO ZERO, AS OCCURRED, FOR EXAMPLE, IN AABE IN ARGENTINA, WHICH RELOCATED 35 EMPLOYEES (10 PERCENT OF THE WORKFORCE) **WHOSE TASKS HAD DISAPPEARED FOLLOWING IMPLEMENTATION OF THE ELECTRONIC RECORDS SYSTEM IN 2016.**

The transfers took place in three months, and the workers received professional guidance from more experienced civil servants. This was the only training expense. Such a low cost was possible due to the relatively slight change in the tasks: for example, many of the people who had previously received and sorted paper files at the institution's mail reception desk (a task that no longer existed following implementation of the electronic records system) went on to advise citizens on how to carry out Agency procedures.

More significant changes to roles can lead to higher retraining costs. An example of this was seen in the private sector at AT&T, an American telecommunications company. In 2013, AT&T began its transition from telephone company to data company and accepted that it had to re-skill more than 100,000 employees whose roles were going to become obsolete. To achieve this transition and prepare its employees for a new business, it invested US$1,250 per employee per year, equivalent to approximately 3 percent of the annual average salary (Aspen Institute, 2018 and Zip Recruiter).[89] Accenture, a professional services firm from the United States faced with growing automation in its business, made a similar decision to prioritize the retraining of its employees. Accenture spends approximately US$2,130, or 2.5 percent of the average annual salary, on capacity building[90] (The Wall Street Journal, 2019; Weber, 2019).

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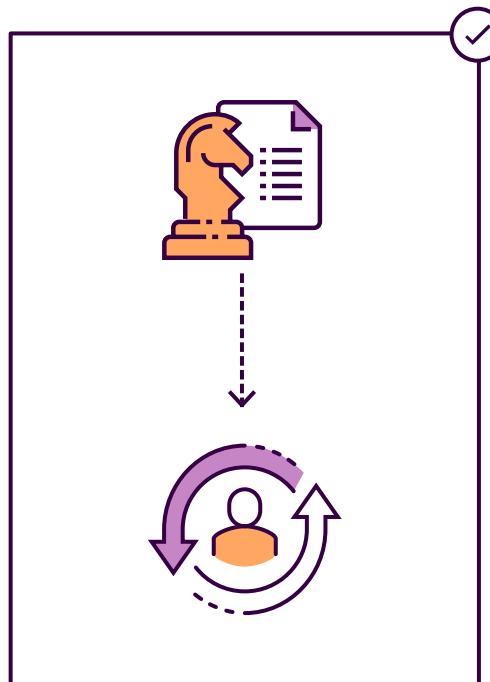
89. Assuming an average salary of US$37,312 (Zip Recruiter).

90. Assuming an average salary of US$88.000 (Pay Scale).

Since the decision to retrain employees whose roles have become redundant respond to two questions, "how to manage the elimination of the employee's role" as well as "where do I find the new talent that I need," the costs incurred by opting to hire in the market must also be considered. These costs can be substantial, due to the diseconomies of scale that almost inevitably exist in recruitment and selection processes. This consideration was part of AT&T's calculation. They found that the cost of replacing an employee begins at 21 percent of their annual salary, and that that percentage rises in step with increases in the salary level (Caminiti, 2018). Boushey and Glynn (2012), from the Center for American Progress, corroborate this estimate by finding that the average cost of replacing an employee was 21 percent of their annual salary. Other studies estimate that the costs are higher, ranging from 50 to 200 percent (Bersin, 2013). In Chile, the costs of recruiting a senior manager for the government range between 23 and 36 percent of their average annual salary.[91] The components of that cost are the final salary, hiring temporary staff, advertising vacancies, identifying candidates, conducting interviews and tests, providing onboarding courses, and others (Boushey and Glynn, 2012). Hiring a new employee does not necessarily exempt the employer from the need to train (and, therefore, from incurring associated expenses): skills gaps may remain at the beginning, or may arise with the passage of time.

A redundancy is not always accompanied by new recruitment. Sometimes, automation is implemented to improve the services provided, but also with the expectation of achieving fiscal savings. However, laying off an employee can be expensive. This has been the experience in the LAC public sector. In Chile, for example, the severance packages offered in the context of a voluntary retirement program in progress toward the end of 2019 ranged between US$16,500 and US$44,000 (equivalent to 6 to 10 months' salary).[92] In the Nicaraguan health sector in 2014–15, the packages cost on average US$10,400 (equivalent to two years' salary). In Paraguay, a program that got under way toward the end of 2017 offered the equivalent of three years' salary for people with 25 years of service. In Jamaica, the average package in a voluntary retirement program implemented in 2018 was approximately US$23,400, equivalent to nearly three years of average salary for eligible civil servants (Directorate-General of the Civil Service of Chile, 2012).[93] And in Uruguay, the 2020 budget law includes a voluntary redundancy scheme that offers six months remuneration plus one month for each year of continuous service, up to a maximum of the equivalent of 12 months' salary.

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91. Assumptions: costs of recruitment, CLP 23,160 thousand for a manager at Level 1 and CLP 11,699 thousand for Level 2. Average monthly salary: CLP 5.4 thousand for a manager at Level 2, and CLP 4.15 thousand for a manager at Level 2 (Directorate General of the Civil Service).

92. US$16,500 for auxiliary and administrative staff and those with less than 20 years of experience; US$44,000 for professionals and managers with more than 20 years of experience. Program ongoing in 2019. Source: internal IDB documents.

93. The three cases cited are of voluntary retirement, in which the employee retires and begins to collect a pension.
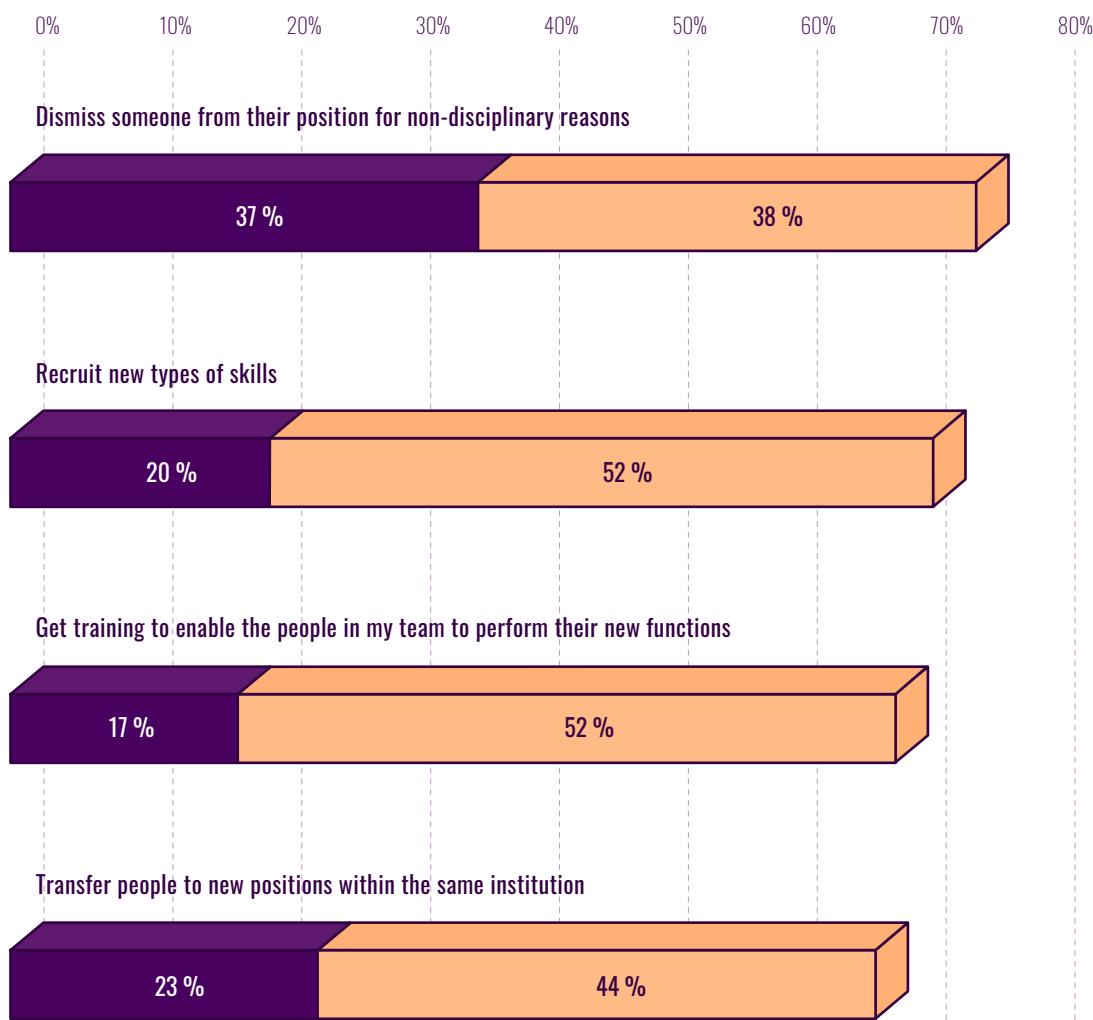
ADMINISTRATIVE EFFORT

All of the options for adapting human talent to digital transformation present challenges. More than 65 percent of the LAC managers surveyed reported that dismissing and recruiting, training, and transferring civil servants is either difficult or very difficult (see Figure 5.3). This is a key finding because, though retraining and transfers may seem difficult, redundancy and new recruitment are not necessarily easier alternatives. This is consistent with a finding of an IDB-OECD study (2020) which revealed that, for most of the LAC countries analyzed, recruitment takes on average more than six months and sometimes more than a year.

FIGURE 5.3 Perceived Difficulty of Redundancy, Recruitment, Training, and Transfers

0%   10%   20%   30%   40%   50%   60%   70%   80%

Dismiss someone from their position for non-disciplinary reasons

| 37 % | 38 % |

Recruit new types of skills

| 20 % | 52 % |

Get training to enable the people in my team to perform their new functions

| 17 % | 52 % |

Transfer people to new positions within the same institution

| 23 % | 44 % |

⬣ Very difficult ⬡ Difficult

Source: Authors' elaboration based on IDB-COPLAC (2019).

MORALE OF CIVIL SERVANTS

points vis-à-vis the previous year (United Kingdom Parliament, 2019).

Following their own evaluation of these factors, most of the organizations studied opted to prioritize job retraining. The following section explains how they matched displaced workers with their new roles and how they tackled termination in cases where it became necessary.
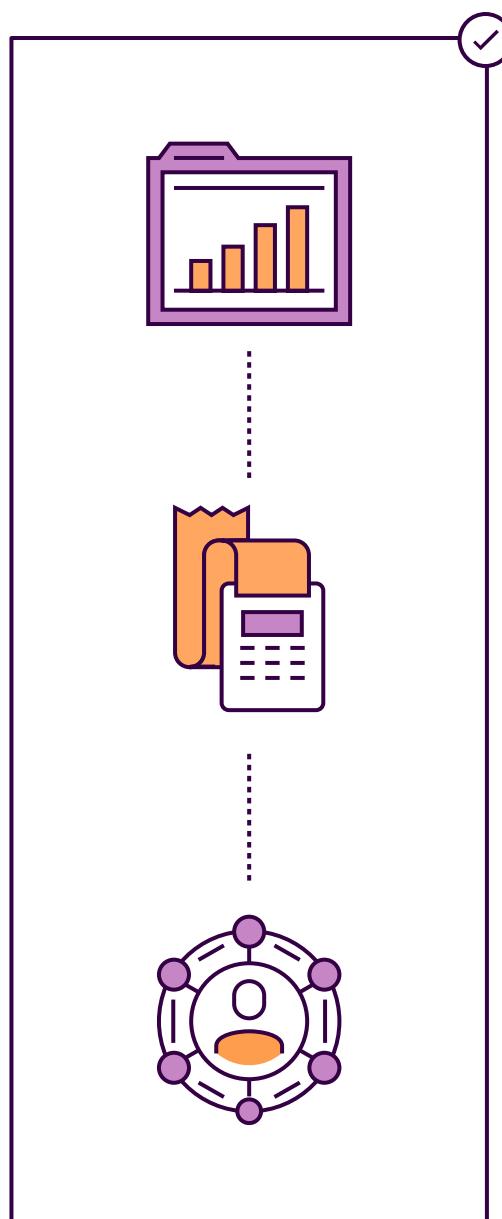
Evidence from the academic literature suggests that changes to work caused by automation and training can have a positive impact on employee morale, while redundancies can have a negative impact. The automation of repetitive and manual tasks has the potential of making the work more interesting, which boosts staff motivation (Esteve and Schuster, 2019). Similarly, employees generally appreciate participating in training and show their appreciation through greater loyalty to their employers (Georgellis and Lange, 2007; Valerio et al., 2018). Furthermore, job insecurity (of the kind that can lead to redundancies, rather than retraining, among civil servants whose tasks are declared redundant) tends to be associated with more negative attitudes toward work, worse physical and mental health, underachievement, less emotional attachment to the employer, and less trust in the organization (Bujangy Sani, 2020; Lee and Corbett, 2006; Maertz et al., 2010; Sverke et al., 2002). Similarly, firms for which social capital is more important for productivity tend to favor retraining over hiring new employees (Capelli, 2004). In the case of HMCTS in the United Kingdom, which led to the redundancy of approximately a third of the workforce, effects of this type were observed: toward the end of the reform in 2018, the civil servant motivation index had fallen by four percentage points with respect to the previous year, with the largest decline in the component referring to leadership and change management, which dropped by eight percentage

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94. This point is also discussed in the previous chapter, which showed that people with occupations with a greater potential for automation tend to be less satisfied.

2

HOW TO IMPLEMENT JOB TRANSITIONS FOR AFFECTED CIVIL SERVANTS

TRANSFERS TO OTHER POSITIONS

Analysis of the cases revealed different ways of managing workforce decisions when transferring workers to a new role. Each way requires different degrees of individual input and effort by managers. Box 5.3 presents some emerging practices from the private sector that are heavily reliant on technology.

Managerial Decision

Sometimes, senior management of an institution makes unilateral decisions on job transitions. In Chile, the relocation of approximately 30 SUSESO civil servants whose roles would disappear as a result of the introduction of the electronic filing system was carried out during the planning phase. The first decision made was that nobody would be let go. For each role affected, a corresponding transition was determined: all estafetas (messengers responsible for delivering paper files from office to office) became scanning clerks, responsible for digitizing the organization's stock of paper files. Unit secretaries became case analysts, while employees at the filing offices (dealing with document reception and dispatch) would become either scanning clerks or basic case analysts. SUSESO hired the firm that implemented the electronic records system to train the new scanning clerks, who received the corresponding qualification. In this case, not having consulted the civil servants beforehand did not cause negative reactions, as they accepted their new functions.

The experience with the digital reform of HMRC in the United Kingdom, initiated in 2015, was similar. Digitization drastically reduced the number of requests for information sent by mail. Consequently, the entity closed six of the seven offices that had managed this correspondence, thereby eliminating more than 600 roles. However, none of these people were made redundant, and some of them were even promoted. Since they no longer had to process physical mail, the workers switched tasks to resolve complex problems over the telephone. They received training for this, which justified their promotions to a higher pay grade.

Personalized Advice

In this model, the civil servants affected by the transformation receive assistance through support networks comprised of managers or human resources officers, who give them personalized support to assess their own skills gaps, determine which positions they might apply for, and analyze the job transition options. Argentina's State Property Management Agency used this model to manage transitions for the people whose tasks were automated following implementation of the electronic records system (10 percent of the total of the workforce, mainly with roles assigned to document reception, distribution, and dispatch). Like Chile's SUSESO, the AABE decided not to let any employees go and to find jobs within the organization for all those affected. Each area head worked individually with every civil servant affected to accompany them throughout the job retraining process. The area head consulted with the civil servant about what they wanted to do, providing options to move within the institution. Once workers had identified their preferred pathway, the area head coordinated with other area managers to facilitate the change to the new position. Civil servants were empowered in their own process of change and given support by managers of the institution to reinvent themselves in their new role. Civil servants were assigned to other positions to provide citizen support and advice, prioritize incoming files, or digitize paper-based files (Aranguren, 2019).

Competitive Exams

Matching employees with their new positions through competitive exams can reduce the resistance to change when clear and objective criteria are used to assign civil servants to their new roles. In the United Kingdom, Her Majesty's Courts and Tribunals System held competitive exams for its employees to determine which ones were best suited to take the positions created in the specialized Service Centers. These tests measured individual characteristics of leadership, behavior, and skills to create the personal profiles used to select employees for the new roles (HMCTS, 2019). Those with the highest grades—the first two-thirds on the list—could aspire to a conversion of their job, while the third with the lowest notes would not have this option.

**BOX 5.3 What Strategies Do Private
Sector Firms Pursue to Facilitate Job
Transitions for Their Employees?**

SOME FIRMS TAKE ADVANTAGE OF
TECHNOLOGY **TO FACILITATE JOB
TRANSITIONS FOR EMPLOYEES**
WHOSE ROLES DISAPPEAR DURING
THE DIGITAL TRANSFORMATION.

They use information systems and self-assessment tools that permit employees to see what vacancies are available, what skills they need to get them, and assess their own current skills. AT&T has a system called Career Profiles, which evaluates the current skills, experience, and credentials of each individual. It then generates a profile that the employee can contrast with the vacancies to determine which new skills must be acquired to become eligible for those positions (Donovan and Benko, 2016). Accenture developed Job Buddy, a program that informs employees of the percentage of their tasks at risk of automation, evaluates their stock of current skills, and determines the most efficient pathway to train for the vacancies considering the adjacent skills (those most similar to the skills that each employee already has) (Accenture). For its part, J.P. Morgan uses Skills Passport, a tool that evaluates current skills and provides suggestions for personalized learning in accordance with the requirements of potential new roles (JPMorgan Chase, 2019).[95]

Two aspects should be considered when applying this type of tool to the public sector. First, these systems are relatively new and there is still no evidence of their effectiveness in matching. Furthermore, the scale of the insti-

tutions that used these systems is much larger (in terms of number of employees) than a single government institution would be. Tools of this magnitude may be too expensive for a single public institution, although it may make sense if used at the government level.

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95. See: https://talentorganizationblog.accenture.com/financialservices/top-soft-skills-and-why-ex-needs-to-be-a-priority-in-hr-tech.
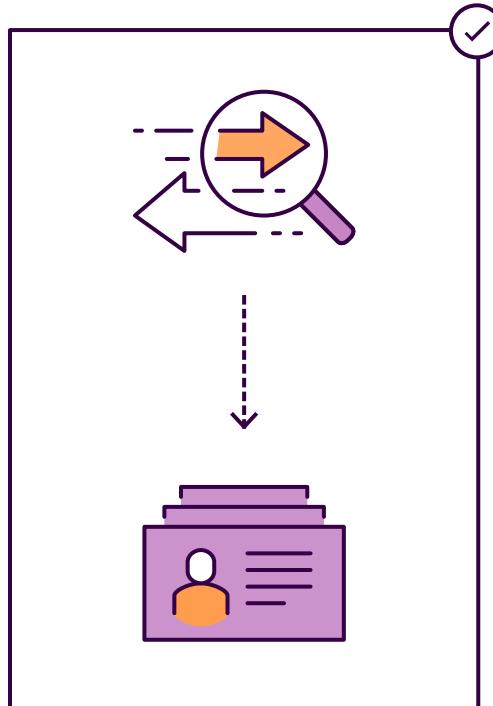
Leaving the Organization

On occasion, the exit of a civil servant whose tasks are eliminated due to digital transformation is relatively simple: for example, when a fixed contract is ending or the employee is close to retirement age. In those cases, the only essential step is to anticipate the obsolescence of the position to make sure the position is not filled through recruitment inertia. Other situations are more complex and require finding a new role for the employee whose functions disappeared. Managing the exit of civil servants is doubtlessly one of the most delicate aspects of workforce management in the context of public sector institutional reform. This situation is considered a last resort; it implies redundancy costs, it leads to the loss of institutional knowledge, it affects employee morale. Also, legal restrictions and possible legal decisions that could obliterate any potential fiscal savings must be taken into account. Redundancy must therefore be the end of a long pathway of possibilities, as illustrated in Figure 5.1.

Civil servants can exit the organization in four main ways: (i) through a voluntary redundancy agreement before retirement age (accompanied by a package of incentives); (ii) by retiring, if they are eligible to do so; (iii) through a voluntary retirement program or early retirement with a severance package; or (iv) through the elimination of the position through a redundancies program. The option chosen varies according to the interest of the civil servant, the existing legal framework, and the needs of the organization.
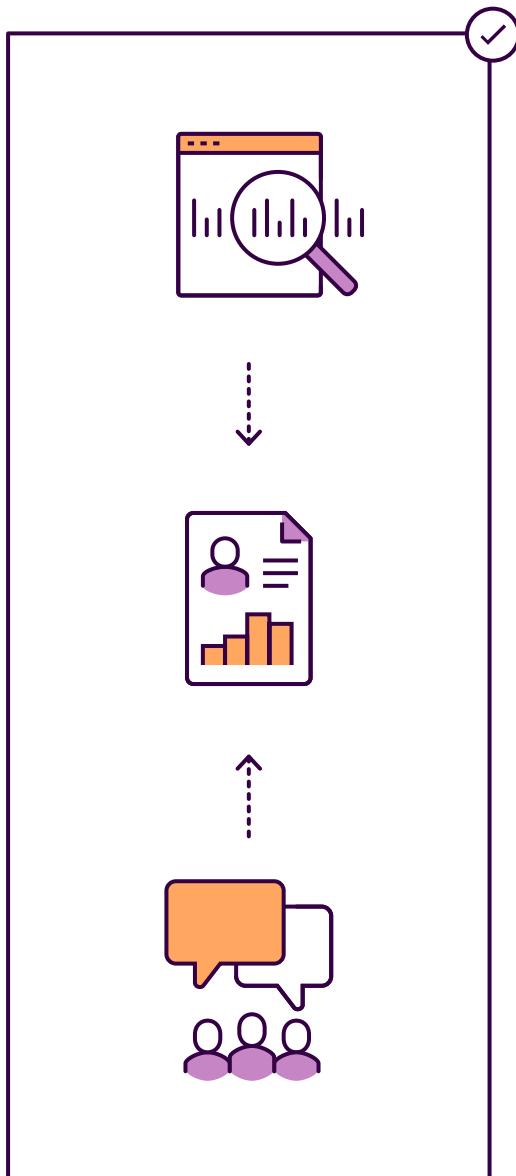
Not all civil servants whose tasks are eliminated due to the transformation wish to remain. It is possible that the new tasks they must perform or the training that they must undergo does not suit their interests. This was the case in AT&T, where the management communicated what employee expectations would be in the future of the organization—which for many implied a significant investment in terms of time and effort in retraining.

For those civil servants who cannot be relocated but wish to remain, it is worth analyzing whether it is possible keep the position until they reach retirement age. This situation is common in numerous public sector reforms, given that ambitious reforms are often long-term efforts. The digital transformation plan for New Zealand's Inland Revenue Service, for example, runs for six years (2015–21), while the plan for Singapore's Internal Revenue Authority will run for seven (2016–23).

One approach that can facilitate the exit of civil servants in these situations is the use of voluntary retirement programs (for those who are in a position to retire) or voluntary redundancy (where a severance package is paid to persons not eligible to retire at that point). Various LAC governments have experience with this type of program.

When all the previous alternatives have been exhausted, it is possible that some civil servants remain who do not wish to leave but cannot be relocated. The applicable instrument in this situation is the elimination of positions via a redundancy program. These programs compensate employees whose roles are eliminated and therefore face redundancy.

private professional consultation services. The consultants helped the employees with their job searches, writing their resumes, and identifying possible vacancies within the Ministry of Justice or other government departments.

In most cases, redundancy programs apply only to permanent civil servants. Because of the increasing use of different types of fixed-term contracts in the region, this can mean that the obligation to compensate an employee for leaving the service may be lower.[96] At the regional level, the percentage of civil service contractors accounts for 24 percent of the total, with wide variations between countries (ranging from 0 percent in El Salvador, to 57 percent in Chile, to 92 percent in the Dominican Republic) (IDB-OECD, 2020).[97]

Redundancy programs typically consists of five components:[98] (i) creating a legal framework that defines the participation criteria, formulas for compensation, and rules regarding returning to the public service; (ii) identifying the offices or institutions that will need a program of this type; (iii) estimating the probable size of the program (especially when there is uncertainty around who will participate, as with voluntary or early retirement programs) and guaranteeing the fiscal resources to finance it; (iv) empowering an entity to supervise the program; and (v) establishing a service that helps workers who are laid off to seek other work (this is particularly important in redundancy programs). Throughout the process, fluid communication with the unions and the civil servants is crucial. Unions, apart from being the guarantors of workers' rights, can be important advocates for voluntary programs and, therefore, key for their success.

This was the case of the HMCTS in the United Kingdom, which let a third of its employees go when it was not possible to relocate staff. Various complementary measures facilitated the forced exit of certain employees. One was to hire

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96. However, this is not always the case. In Chile, a Supreme Court ruling in 2018 recognized the employment relationship as indefinite for contracted workers with more than two years of service (Contreras Jara, 2018)..

97. The fact that it is easier to lay off employees who are on fixed-term contracts is not necessarily a justification for favoring that kind of employment model above that of the civil service. Chapter 3 details various disadvantages of over-dependence on contractors, such as less loyalty to the organization, less commitment to the mission, greater loss of institutional memory, and less incentive to train, among others.

98. For more information about the management of programs of this type, see Boyne (2010) and IFC (2005).
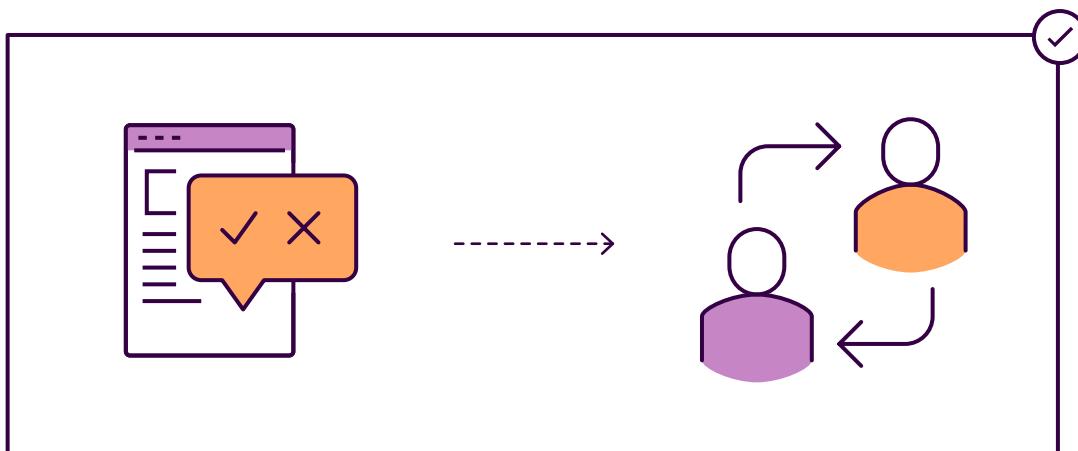
In voluntary redundancy programs, there is a danger of adverse selection, that is, the possibility that the highest-performing civil servants are the ones who accept the packages. This occurs because they are generally the ones with the best job opportunities outside of the public sector (Rama, 1997). This risk is seen especially when programs are open to any civil servant who meets the criteria (for example, age or years of service). One way to mitigate this risk is to offer redundancy programs that are targeted to specific jobs or, in the case of open programs, include the requirement that the civil servant's eligibility for the program must be approved by an authority (in a way that is compatible with the legal framework in each country).

Experience at the global level suggests that financial packages are generally a better investment of resources than the training provided by a government agency or services to help employees seek new work, which are occasionally offered as part of redundancy programs. This is because such services tend to be of poor quality, which limits their usefulness in helping a dismissed employee to find a new job outside of the public sector (Campa, 1996; Middleton, Ziderman, and Van Adams, 1993).

Although LAC countries are prepared at the regulatory level to implement programs to eliminate jobs through redundancy, few do so in practice. In 10 of the 12 countries surveyed recently, the legal framework permits civil service redundancies in the context of job restructuring (OECD-IDB, 2020). In some countries, there are certain restrictions. For example, Brazil and Uruguay do not permit dismissals due to restructuring, and Argentina only does so if the function is eliminated from the organizational structure and if the affected employee rejects relocation.
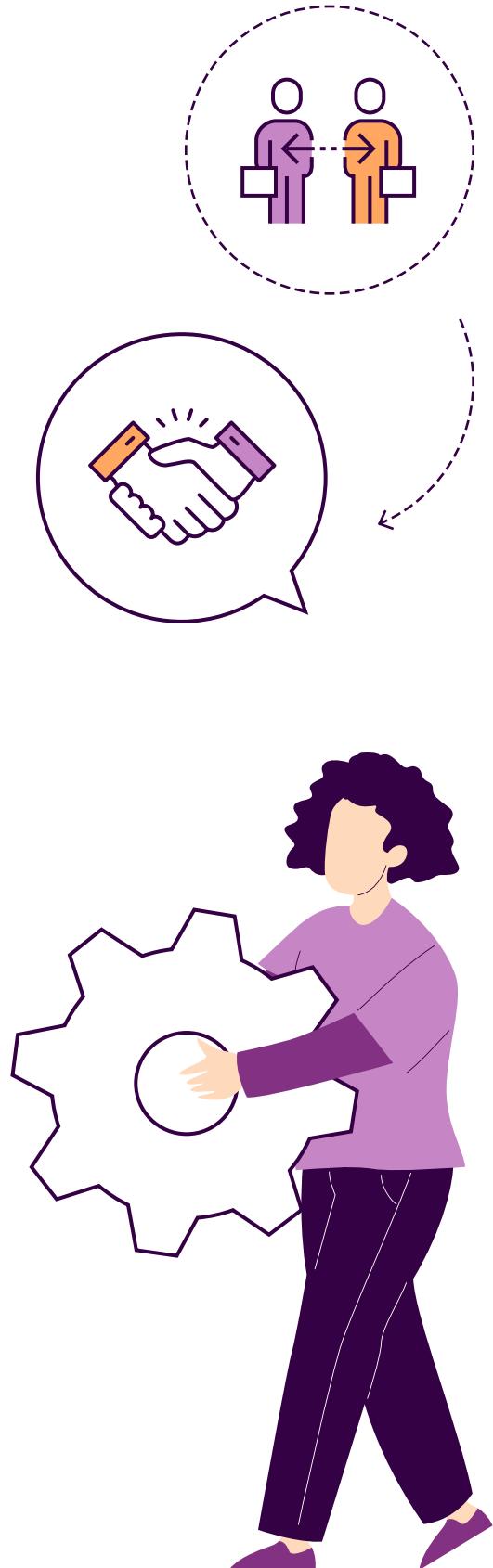
Despite the existence of a legal framework, however, few countries implement programs to eliminate positions through redundancies. Only four countries reported doing so regularly (Chile, the Dominican Republic, Guatemala, and Mexico), one reported doing so from time to time (Costa Rica), and four do so only rarely (Colombia, El Salvador, Jamaica, and Peru) (Survey OECD-IDB, 2020).

The option of offering voluntary redundancy or early retirement packages is more common in LAC (OECD-IDB, 2020). Nine of the countries analyzed have implemented programs of this type (early retirement in Argentina, Chile, El Salvador, and Jamaica and voluntary redundancy in Colombia, Costa Rica, Guatemala, and Mexico). Among the countries studied, only Brazil, Peru, and Uruguay have not used this type of program.

Having analyzed past experiences with IFMISs, the challenges associated with attracting digital talent, the assessment of the degree of civil servant preparedness for the disruptions that digital transformation causes, and the available options for adapting the human capital to such disruptions, a central question still remains:

WHAT SHOULD LAC GOVERNMENTS DO TO PREPARE FOR THE HUMAN CAPITAL CHALLENGES CREATED BY DIGITAL TRANSFORMATION? THE FOLLOWING CHAPTER ADDRESSES THESE ISSUES.

ANNEX 5.1
CASE STUDIES

PUBLIC SECTOR INSTITUTIONS

Argentina: State Property Management Agency (AABE). As part of a government digital transformation project that comprised the entire central government, the AABE introduced an electronic records system in 2016. The system simplified or eliminated many processes that had been previously done on paper for communications, administrative procedures, and resolutions, among others. This change affected the tasks of approximately 30 people, or 10 percent of the total agency workforce. The AABE decided against making anyone redundant and to find a job transition for the affected employees within the organization: they were assigned to positions providing customer service and advice, prioritizing incoming files received, or scanning paper files.

Argentina: Attorney General's Office of the Autonomous City of Buenos Aires. In 2018, the Attorney General's Office implemented Prometea, an artificial intelligence tool that automated a large part of the work of the 60 prosecutors. As this did not involve any change in the workforce, the main impact has been faster management of typical cases, freeing up time to devote to more complex cases, and the opportunity to take on new tasks, such as studying international best practices.

Chile: Superintendency of Social Security (SUSESO). Toward the end of 2018, SUSESO began implementation of a digital transformation process, which was designed starting in 2015. The core of the project was the installation of an electronic records system to make the management of complaints regarding medical certificates and labor insurance more efficient. Previously, the complaints process was done on paper. At the beginning there were 50,000 cases handled each year, which rose to 100,000 after the reform. The electronic filing system rendered the work of the estafetas (persons responsible for carrying paper files from one office to another) completely unnecessary and significantly reduced the functions of the filing office (responsible for managing document reception and dispatch for the institution). Likewise, the role of the secretaries was greatly reduced (except for those who were executive assistants), and they went on to perform a more analytical function. Overall, this cross-cutting process meant completely redesigning around 10 percent of the institution's jobs and changing some others. SUSESO managed this transformation with a package of measures that included a firm commitment not to dismiss a single civil servant, a investment of more than two years in a rigorous change management process, and retraining for all employees whose roles had been eliminated.

New Zealand: Passport Office. New Zealand has offered an online passport renewal service since 2012. This implied two simultaneous changes that had opposite effects on the workload: 150 processes were automated and manpower needs were significantly reduced and, at the same time, the government reduced (albeit temporarily) the validity of the passport from ten years to five, which increased the workload. The measures that were taken included a combination of fixed-term contracts, job relocations within the Department of Internal Affairs, and an expansion in service provision to manage the changes.

New Zealand: Inland Revenue Service (IR). The IR started a business transformation program in 2017 that represents a decisive move toward digitization and will affect up to 75 percent of its jobs. These changes have been mainly managed through attrition, transfers, and the creation of a new skills framework adapted to the new needs of the institution.

United Kingdom: Her Majesty's Revenue and Customs (HMRC). The digitization of services set in motion in 2015 substantially reduced the quantity of physical mail received by the HMRC. This led to the closure of six of the seven offices that used to manage such correspondence (which consisted mainly of manual data entry or the preparation of written responses to queries) and the elimination of approximately 600 jobs. Staff redundancies were avoided completely through a combination of promotions to positions aimed more at customer service and transfers.

United Kingdom: Her Majesty's Courts and Tribunal Service (HMCTS). In 2016, HCMTS embarked on an ambitious program to digitize justice services with the aim of boosting management efficiency and cutting costs (which had fallen in 2018 by 29 percent compared to 2010). This transformation includes the closure of 120 of its 460 courts, the relocation of approximately 30 percent of its personnel to service centers, and an eventual 31 percent reduction of the workforce by 2023 through attrition and voluntary retirement. The program implemented a series of measures to manage the selection of the staff to be transferred from the courts to the service centers and to strengthen the new digital and customer care skills that the work in these centers requires.

Internal Revenue Authority of Singapore (IRAS). Starting in 2016, IRAS implemented robotic process automation and social network analysis initiatives throughout the institution to increase its efficiency and its capacity to detect fraud. These measures have been accompanied by substantial investment in various mechanisms to promote new skills for all the institution's functions.

PRIVATE FIRMS

Accenture (United States). In 2015, when faced with a decision either to lay off a large segment of employees due to growing automation of the work, or to promote a shift toward higher value-added services, the executives opted for the latter alternative. They created a tool (Job Buddy) to estimate the risk of automation of each task, identify possible new jobs, measure skills gaps, and suggest courses. They invested US$1 billion per year in capacity building and personalized advice (representing 60 percent of what was saved by automation), and the company has retrained 300,000 of its 470,000 employees since 2015.

AT&T (United States). Following an assessment conducted in 2013, the company's leaders realized that half of its employees lacked the skills needed to make the company competitive in an industry that was increasingly centered on data rather than on telephone services. They embarked on Workforce 2020, an ambitious plan to retrain more than 100,000 employees by 2020. The plan, backed by investment of more than US$1 billion, comprised a wide range of initiatives including individual analysis of skills, training, and career management. Workforce 2020 offered complementary online digital training programs called nanodegrees to train employees, through a partnership with Udacity, the educational organization. In 2016, more than 1,000 AT&T employees had obtained a nanodegree. The company offered, furthermore, a multitude of online courses in diverse themes to ensure that employees have all the tools needed to bridge their knowledge gaps. In 2018, AT&T employees had completed more than 2.7 million courses, and the company had granted more than 110,000 virtual diplomas to the 57,000 employees who completed all the courses in a particular topic, such as cybersecurity or project management.
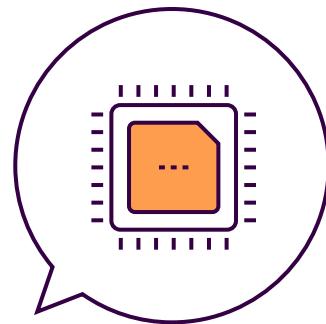
J.P. Morgan (United States). As part of an annual investment of US$250 million in staff retraining, the firm created the Skills Passport. The tool, similar to Accenture's Job Buddy, helps to carry out self-assessment of skills, offers suggestions for courses based on current responsibilities, and facilitates a comparison of the skills required for a potential future job with the skills of the employee.

Volkswagen (Germany). In an effort to maintain its position as the best-selling car manufacturer in the world (per unit), which includes robotics, 3D printing, and artificial intelligence initiatives, among others, Volkswagen invests in bringing its employees' skills up to date. It does so through a collective corporate governance model with substantial employee participation. This model has meant that considerations of employee skills form an integral part of modernization efforts, at both the general level of the firm and at the level of each project.

ANNEX 5.2
OLD WORK, NEW SKILLS: THE CASE OF REGULATORS

Digital transformation is changing jobs in some of the most basic functions of the state. Regulation is one of them. This case shows that such transformation can be driven by changes in the economy and in society: rapid disruptions in technologies, social interactions, and business models mean that regulation—and, therefore, regulators—must also evolve to meet their obligation to safeguard the health, safety, and security of citizens, as well the environment, while avoiding becoming a bottleneck for innovation.

Throughout the regulated sectors, such as finance and transport, digital innovation has increased exponentially in recent years, creating significant challenges for regulators. First, the speed of the change conflicts with the long and laborious traditional processes of planning, designing, and reviewing regulations. Second, digital platforms and the convergent nature of technology raise questions about regulatory jurisdiction. This creates the need to ensure effective intersectoral coordination and to expand understanding of the areas that fall within the regulator's purview. Third, internet and new technologies have a global reach and present challenges to regulators, whose functions are geographically delimited to regions or countries. Finally, digital transformation is accompanied by new risks, fault lines, and areas of concern associated with access to and inappropriate use of data, privacy, political and social manipulation, security, discrimination, and biases.
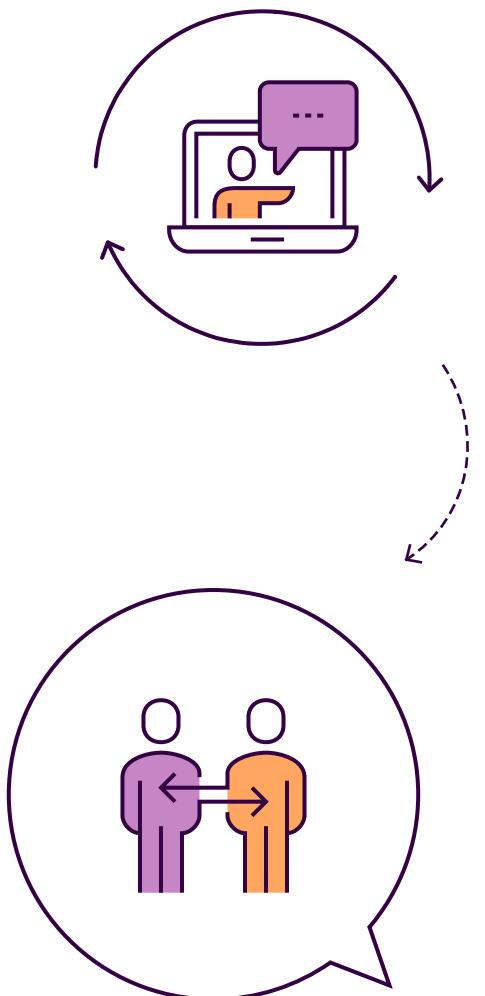
At the same time, digital transformation creates opportunities for supporting the work of the regulator. Perhaps the biggest opportunity arises from the availability of data to understand and manage risks, evaluate impacts, and identify and appropriately manage consequences that were unforeseen in the regulations. Many regulators, particularly in the financial sector, have developed data analysis capacities and innovative tools to detect and investigate illicit behavior and other warning signs. Among others, the U.S. Securities and Exchange Commission (SEC) has developed the knowledge necessary to fully exploit this explosion of data. The Center for Risk and Quantitative Analytics of the Division of Compliance has, in only two years, brought analytics to bear on more than 100 cases against 200 entities and invididuals involving a range of accusations, including insider information, speculative funds, municipal issuers, and complex financial instruments, among others (White, 2016).

The speed and agility of technological change also allow for regulatory experimentation and innovation. One type of experimentation is so-called regulatory sandboxes, that is, a controlled testing ground for new business models that have yet to be covered by the current regulation. These permit innovative business models to temporarily operate products and services under rules that set certain limits, for example regarding the number of users or the period in which the product or service can be offered under supervision of the regulator (Herrera and Vadillo, 2018).
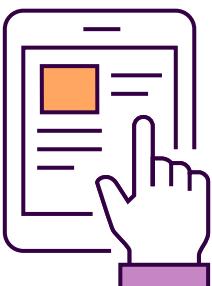
Having multidisciplinary teams that combine highly specialized technologists and data scientists with personnel with broad experience and knowledge of the sector and the internal capacity to manage change and emerging risks is necessary if the supervision of rapidly changing technologies is to be effective (Basel Committee on Banking Supervision, 2018; Herrera and Vadillo, 2018). Regulators are also exploiting technological innovation. Developments such as regulation using data coded into computer language and automated reporting and monitoring have vast potential to simultaneously boost compliance and drastically reduce the regulatory burden faced by firms.

These changes in the challenges faced by regulators and in their toolboxes translate into new skills that regulatory agencies must incorporate. The work of regulators has become more demanding, since legal review, sector knowledge, risk management, and skills related to planning, compliance, and evaluation continue to be needed. The demand for data analysis, programming languages, mathematics, and statistics has increased, as has the call for soft skills such as adaptability and teamwork.

IN A CONTEXT OF ACCELERATING CHANGE AND AN INCREASE IN MULTIDISCIPLINARY INTERACTIONS, EFFECTIVE COMMUNICATION AND COLLABORATION ARE ALSO REQUIRED.
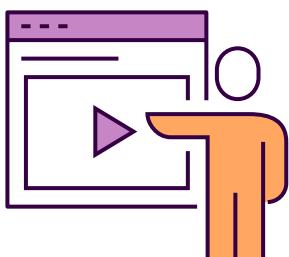
ANNEX 5.3
APPROACHES TO EMPLOYEE TRAINING

Online Courses. Most of the organizations studied offer online courses to their employees, possibly due to their practical nature. They can cover a variety of topics (enabling workers to find those most suited to their needs), there are no limits on the number of students, and they can be reused. Many of them exploit learning methodologies to guarantee that they are responsive, relevant, and meet the needs of each employee.[99]
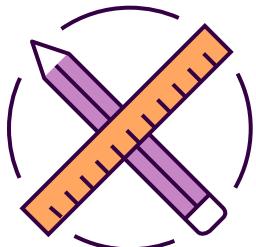
In Singapore, the Internal Revenue Authority offers its employees online courses through mobile devices, which consist of mini-modules covering the skills needed for the organization's digital transformation. More than 80 percent of the organization's workforce has taken advantage of these courses.

Hybrid Approach. Other organizations take a hybrid approach to training their employees. Her Majesty's Courts and Tribunals System, in the United Kingdom, is a good example. To the train the civil servants selected to work in the service centers using digital skills, leadership, customer service, and new software management skills, the organization required these employees to attend an intensive two-week session in the classroom, followed by six weeks of on-the-job training where, under the supervision of mentors, they learn to answer calls and requests, resolve cases, and other day-to-day functions. Accenture has trained more than 300,000 civil servants through a combination of online training in classrooms, online courses, and mobile access to learning tools (Weber, 2019). Singapore's Internal Revenue Authority offered online courses and promoted attendance at bootcamps (short in-person and intensive courses on a specific topic).

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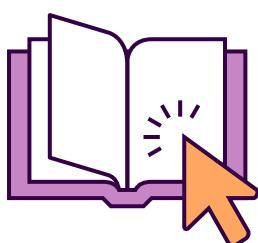
99. The empirical evidence shows that online courses can achieve their pedagogical aims comparably to in-person courses. A study by the Massachusetts Institute of Technology (Pritchard et al., 2014) measured the learning achievements of university students from a course in advanced physics, which some students took online and some took in person. The result was that there was no difference between the levels of learning of the two groups of students. Similarly, a meta-analysis of 96 studies of more than 19,000 students revealed that learning from online or in-person classes is the same, since the teaching methodology is exactly the same (Sitzmann et al., 2006). However, online courses are only effective if they are completed (Sitzmann and Weinhard, 2018). A study of 9 million students revealed that between 70 and 95 percent of those registered with Massive Open Online Courses (MOOC) fail to complete the courses (Greene et al., 2015; Korn and Levitz, 2013). Therefore, the characteristics of the students themselves can influence the probability of completing the courses. When a MOOC leads to obtaining a certificate that can be used for employment purposes, the proportion of students completing the courses is higher (Greene et al., 2015). In spite of this, individuals who complete the courses report that they derive high rates of satisfaction and usefulness from them. A survey of 52,000 MOOC users who had completed a course revealed that 72 percent reported having observed benefits in their professional careers (Zhengao et al., 2015).

These camps were attended by 100 percent of the organization's employees, who sought to increase their awareness and competencies in basic digital skills and service design concepts.

Formal Education Grant Programs. Although organizations make use of digital media with greater frequency, some continue to resort to traditional education to provide their civil servants with comprehensive and good-quality training. Several public institutions analyzed offer their civil servants the option of obtaining university degrees ranging from specializations to a master's degree in business administration (MBA). One example is Colombia's Ministry of Information and Communications Technology, whose ICT careers program offers grants for civil servants who wish to study a program in related topics. These grants can cover up to 100 percent of the cost of the studies (Ministry of Information and Communication Technologies, Colombia).

On occasion, governments implement cross-cutting plans to promote the acquisition of sought-after skills. These programs can also narrow the skills gaps that must be addressed to facilitate job transitions. Several of the countries analyzed have central capacity-building strategies that seek to provide digital skills to civil servants from different levels. The following are examples of different forms of digital training that are promoted from the central level, which seek to lay the foundations of digital knowledge for all civil servants.
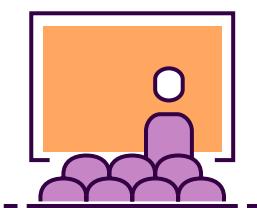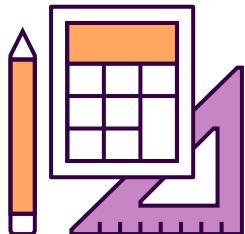
Digital Training in Public Training Academies. One common way of promoting digital skills is the use of public training academies, in association with the countries' digital government entities. The government of Singapore has a Civil Service College, which offers training in digital skills for all hierarchical levels of the government and with different degrees of depth, beginning with basic digital skills (such as internet use) and going on to applications in artificial intelligence, automated robotics processes, and data analysis, among 400 digital courses offered in 17 areas. This institution offers in-person and online courses to any civil servant who wishes to take them. The United Kingdom's GDS Academy offers a variety of courses, with introductory sessions for non-specialists, specialized courses for people in digital roles, and training for leaders responsible for digital services. It is open to civil servants from both the central and municipal governments. It had already trained around 10,000 civil servants by 2020. It provides both online and in-person courses, and has four permanent training centers, as well as mobile training centers throughout the country.
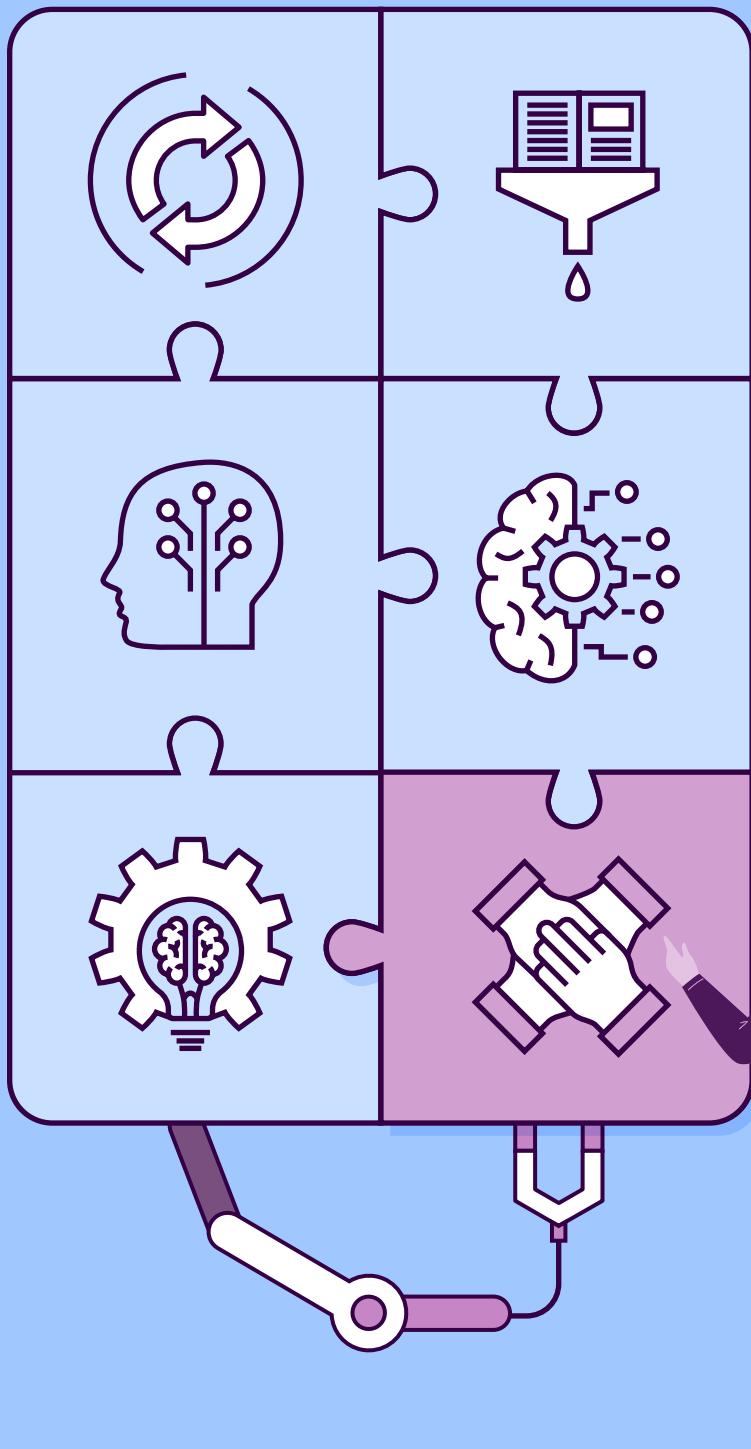
Based on the United Kingdom's experience, Canada created its Digital Academy, which falls under the Canada School of Public Service (CSPS) and offers a digital skills curriculum for all civil servants. It divides the courses into three major levels: (i) digital basics, aimed at all civil servants; (ii) digital premium, catering to specialists whose tasks focus on data, artificial intelligence, machine learning, and others; and

(iii) digital leaders, a program for leaders responsible for promoting digital transformation. Chile also has an incipient initiative, Academia Digital, oriented to training civil servants in technologies through online courses in a variety of digital topics, ranging from emerging technologies to the new digital economy. In Spain, SGAD provides training in digital skills to all civil servants through the National Institute for Public Administration. Furthermore, it has developed a series of massive open online courses and other online courses for this purpose, and provides training in electronic administration and the basic digital tools that all civil servants must possess.

Capacity Building Adapted to Each Public Entity. Uruguay's AGESIC has developed a digital talent initiative that seeks to promote digital skills among civil servants, targeting specialists, technicians/operatives, managers, and the team of civil servants in general. As part of its organizational transformation model, AGESIC analyzes, alongside each institution, the skills their teams will need to successfully negotiate the processes of digital transformation. Based on this assessment, it formulates the training and capacity-building strategy. It narrows the skills gap through training provided directly by AGESIC, through training programs at the civil service's National School for Public Administration, or by outsourcing courses on specific topics to private course providers, as each case demands.

Training the Trainers. One of the strategies for training public employees in basic services offered by SGAD in Spain is the train-the-trainer program, which seeks to train staff from each entity who will then impart their knowledge of the use of shared services to other civil servants in their own institutions. This strategy has been key in scaling up training in entities at all levels of government. It has multiplied the number of people receiving training, which would not have been possible if the training had been provided exclusively by SGAD. This program has extended training in digital skills throughout the country and is a crucial element of the Spanish government's digital transformation plan. The civil service in Chile launched its Líderes Digitales (Digital Leaders) program, which seeks to bridge the digital gap in different age groups among goverment employees by training civil servants under age 30 as mentors, who will then help promote digital trends within their own services.

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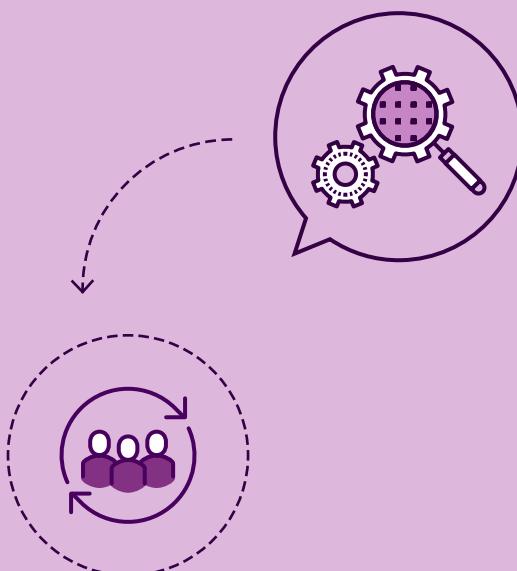
CHAPTER

RECOMMENDATIONS FOR **ADDRESSING THE HUMAN CAPITAL CHALLENGES POSED** BY GOVERNMENT DIGITAL TRANSFORMATION

AUTHORS | Miguel Porrúa · Mariano Lafuente · Edgardo Mosqueira · Benjamin Roseth

ABSTRACT

Chapter 1 of this book explains why human capital is a central element of digital transformation. Chapter 2, which is based on an historical analysis of the implementation of IFMISs, reveals the challenges of failing to include considerations of human capital in digital transformation processes. Chapter 3 details the challenges that the region faces in finding the specialized digital talent needed to drive the digital transformation and presents solutions that have been implemented in leading digital countries. Chapter 4, which is based on a survey of Chilean civil servants, explores how most civil servants welcome modernization, although attitudes tend to be less approving among those whose jobs are most likely to be automated. Chapter 5 analyzes possible adaptations for employees whose roles will be modified or eliminated following a digital transformation.

THIS CHAPTER PRESENTS **FOUR RECOMMENDATIONS TO GUIDE GOVERNMENTS IN ADDRESSING THE HUMAN CAPITAL CHALLENGES ASSOCIATED WITH DIGITAL TRANSFORMATION:**

Strengthen the mechanisms for attracting and retaining specialized digital talent.

Invest in extensive digital capacity building.

Create mechanisms for addressing disruptions digital transformation can cause for existing civil servants.

Ensure that those responsible for digital transformation, human talent management, and budget management work together in planning and implementing the process.

Given the increased urgency for digital transformation caused by the COVID-19 pandemic, this chapter examines several actions that can be rapidly implemented, as well as others that require reforms over the medium term.
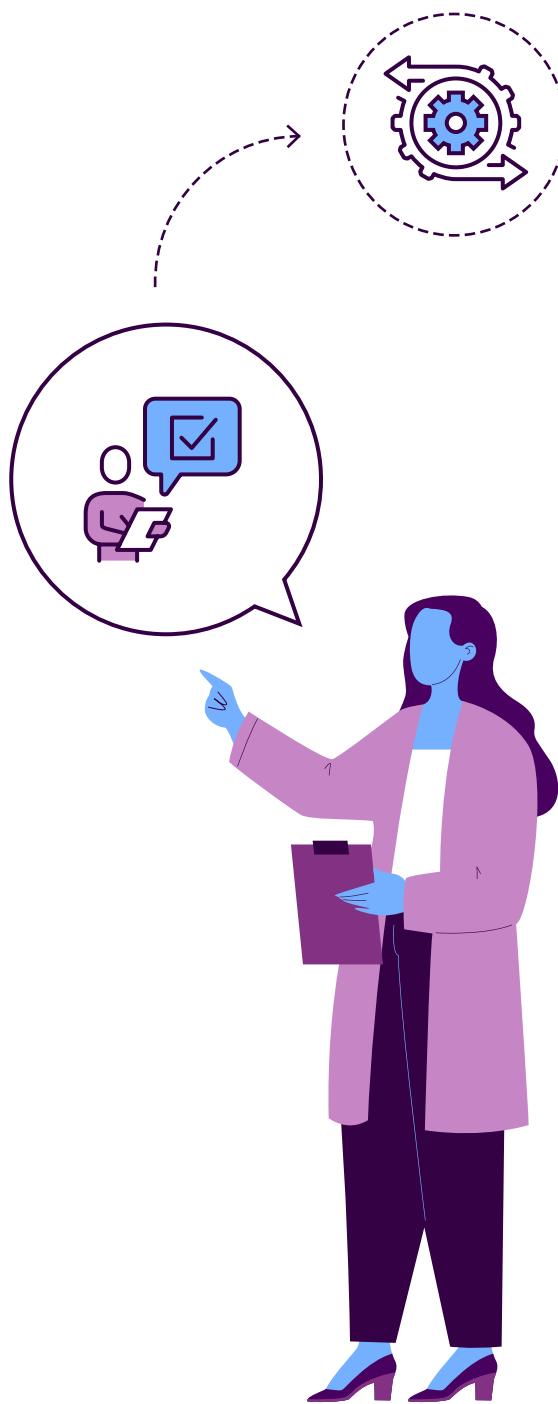
RECOMMENDATION 1
STRENGTHEN THE MECHANISMS FOR ATTRACTING AND RETAINING SPECIALIZED DIGITAL TALENT

The following actions are recommended to enable LAC governments to tackle the challenges of acquiring the specialized digital talent described in Chapter 3: the shortage of digital talent in the labor market, lack of budgetary resources, and inadequate human resource rules and processes.

A

PROMOTE A LARGER SUPPLY OF DIGITAL TALENT FOR GOVERNMENT THROUGH BETTER ENGAGEMENT WITH THE EDUCATION SECTOR

In many countries, educational initiatives are already underway to create the digital talent needed for the labor market, ranging from primary to university education. As large employers, governments should participate in those initiatives and inform universities about their future needs (based on workforce planning exercises), offering internships or temporary programs for young digital talent and portraying government as an attractive place to work. This can include links with engineering and public administration faculties, but should not be limited to them.

B
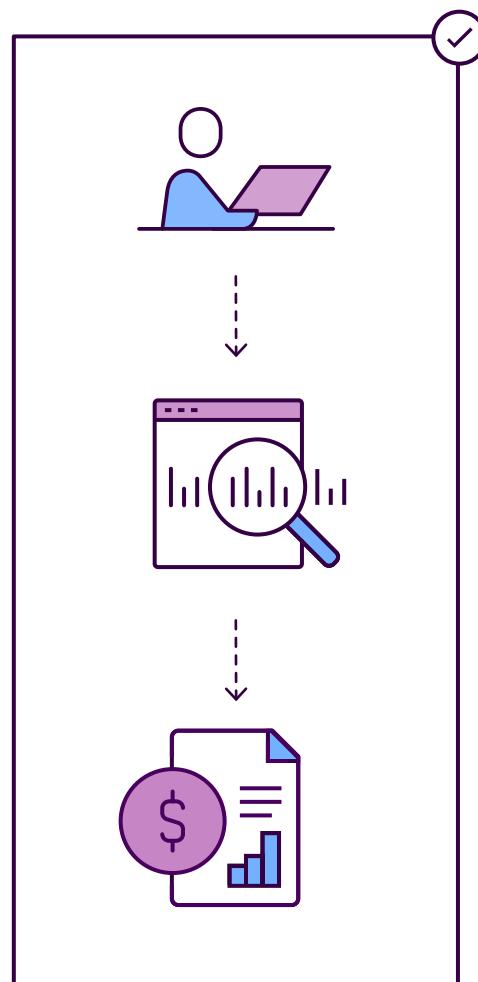
RECRUIT DIGITAL TALENT, ALIGNING IT WITH BOTH CURRENT SHORTAGES AND PROJECTED FUTURE NEEDS (INCLUDING PROFILES, NUMBER OF CIVIL SERVANTS, AND ESTIMATED COSTS)

To guide the digital talent recruitment process, it is important to understand current and future job needs. This analysis should be coordinated between the digital government authority and the civil service governing body with support from the center of government and the Ministry of Finance, and with the participation of all public institutions, at a minimum those controlled by the Executive branch. It should focus on: (i) identifying and building[100] each job description necessary within the framework of the digital transformation plan (e.g., digital leaders for the line ministries, data scientists, experts in digital infrastructure, cyber security experts, programmers, experts in user experience, etc.); (ii) determine the optimal annual number of each of these profiles for each institution; and (iii) project the cost of these needs and identify possible sources of financing (e.g., by projecting the number of retiring employees and better controlling the replacement rate for lower-priority tasks).

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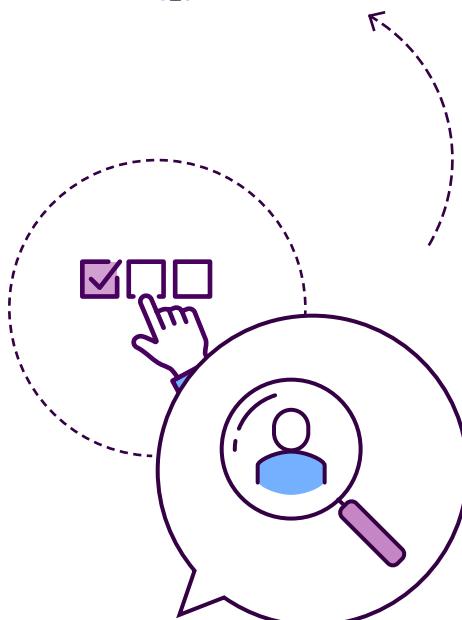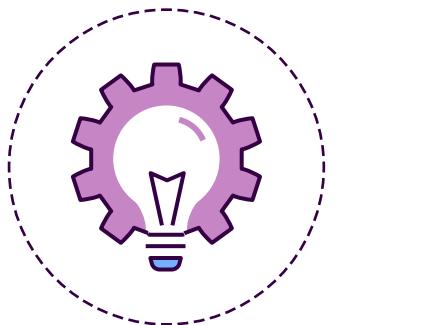
100. Existing job descriptions in the institutions that are most advanced in terms of digital transformation, such as the institutions in charge of tax collection or the social security system, among others, should be used as references.

C

WHILE RECRUITING TALENT, EMPHASIZE THE MISSION AND THE POTENTIAL IMPACT OF THE GOVERNMENT'S DIGITAL WORK

The public sector offers a unique opportunity to achieve social impact. This potential helps to attract public-spirited digital experts and enables it to compensate salary differentials with respect to the private sector. The possibility of having an impact may be a better mechanism for attracting young digital specialists than job stability (the typical public sector value proposition), since many of them value the ability to change jobs throughout their careers (Meister, 2020).

D

MAKE THE RECRUITMENT PROCESS MORE TARGETED, TECHNICAL, AND EFFICIENT

Hiring processes in the public sector often take longer than equivalent processes in the private sector, and they often require a substantial investment of time by the candidate (longer forms, web pages with errors, and multiple tests). To attract the best digital talent, governments must reach out to the spaces (both physical and virtual) frequented by digital specialists to recruit them proactively, by offering a streamlined process, with a description of the vacancy and a job profile that reflects the terms and the style of the industry and with technical tests that serve the dual purpose of identifying the best candidates and finding the level of work most suitable for them to perform.

E

UPDATE THE JOB CLASSIFICATION SYSTEM

The key to any recruitment process—whether for a short- or a long-term position—is to have specific job descriptions for digital positions, written by technical experts and updated regularly.

F

CHOOSE THE MODALITY(IES) OF ENGAGING DIGITAL TALENT ADAPTED TO LOCAL POSSIBILITIES AND NEEDS

There are different ways of engaging digital talent beyond the usual options of hiring consultants or career civil servants. Depending on the context, one or more options may be appropriate.

F.1

Hire civil servants for a fixed period

Some digital professionals in intermediate or advanced stages of their careers may be interested in work for the government on a temporary basis or on a specific project, without necessarily wishing to pursue a career in the public sector. For such specialists, there should be a scheme enabling them to enter public service, work for a fixed period, and then return to the private sector.

FOR THE PUBLIC ADMINISTRATION, THIS FLEXIBILITY OFFERS THE POSSIBILITY OF BRINGING NEW KNOWLEDGE OF THE LATEST TECHNOLOGICAL ADVANCES IN THE PRIVATE SECTOR TO THE PERMANENT TEAM OF CIVIL SERVANTS WHO WORK ON DIGITAL TRANSFORMATION. THE USDS EMPLOYS THIS MODEL.

F.2

Create internal mobility programs within the public sector

Internal mobility programs can be an interesting alternative by providing digital professionals with the option of working on different projects and contexts without losing the knowledge acquired or having to resort so frequently to recruitment. In these programs, such as the Canadian free agents program described in Chapter 3, professionals undergo a special selection process, enjoy the freedom to change institutions, and are given a career advisor who helps them throughout their transitions. This, in turn, facilitates exchange of lessons learned among public sector institutions.

F.3

Create a digital profession

The most far-reaching solution for generating digital talent, and the one that implies the most structural change, is to create a digital profession for civil servants. Within this scheme, rules and tools are created that enable digital specialists to enter public service, to grow professionally, and to keep their skills up to date. An advanced example of this type is seen in the United Kingdom's Data, Digital and Technology profession, in which the director of the Government Digital Service defines the talent requirements. The digital profession's characteristics include a merit-based entry system, the possibility of lateral entrance (that is, entrance at any
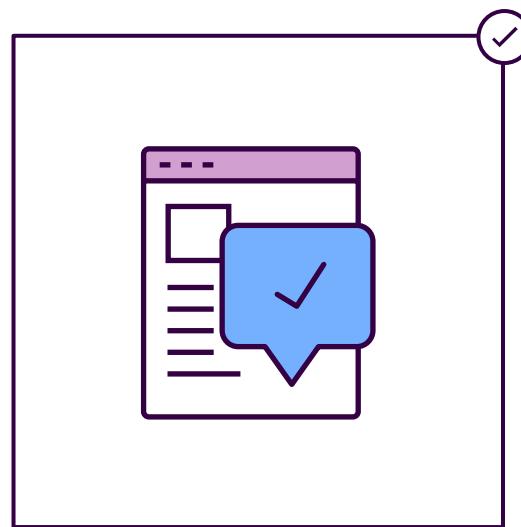
level, not just for recent graduates, as occurs in career-based systems), appropriate and updated job descriptions, a skills framework that guides performance evaluation and professional growth, ease of mobility between institutions, ample opportunities and incentives for continuous training, and remuneration that is competitive with that offered in the private sector. This option could be combined with any of those described above and also applied to existing civil servants who work on digital projects.
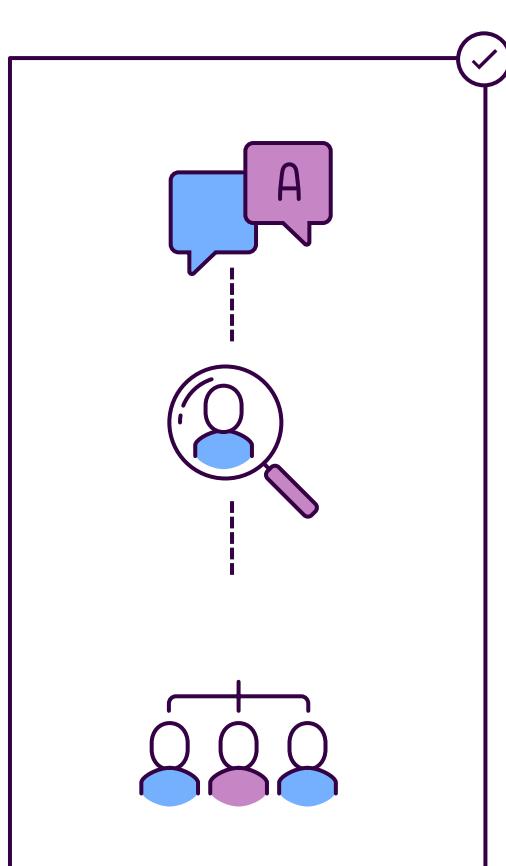
F.4

Seek flexibility within existing arrangements

In the absence of the above mentioned options, in the short term it may be practical to resort to flexible ad hoc practices that can capture digital talent. Some countries have hiring arrangements that engage digital specialists in a more agile way and with higher salaries than those allowed under civil service rules.

G

TACKLE GENDER INEQUALITIES

Since more men than women hold digital jobs in the regional labor market, with something similar happening with students studying technology degrees at university, there is a risk of reproducing gender bias in government recruitment of digital talent.

GIVEN THE IMPORTANCE OF HAVING **A BODY OF CIVIL SERVANTS THAT REFLECTS THE DIVERSITY OF THE CITIZENS IT SEEKS TO SERVE,**[101] ACTIONS SHOULD BE TAKEN THAT PROMOTE GENDER EQUALITY.

Steps in this direction can include:

Special efforts to recruit women into technology, such as participation in conferences, presentations at universities, and publishing in the media.

Ensuring that women are included on selection panels.
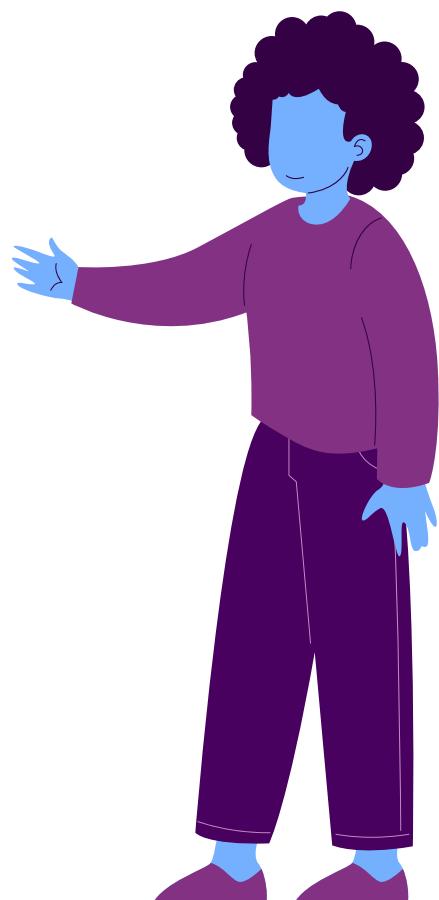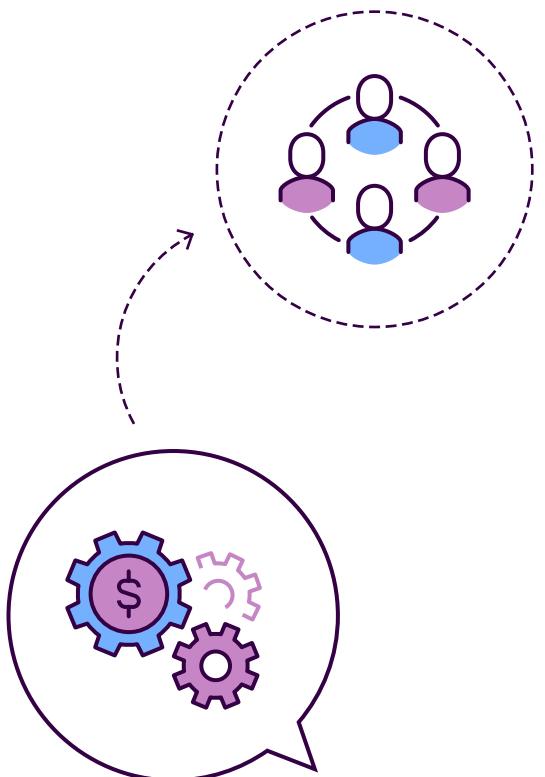
Establishing quotas for hiring women in digital jobs, including leadership positions.

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101. See the USDS report on diversity and inclusion: https://www.usds.gov/assets/files/usds-di.pdf.

H

ENDEAVOR TO MAKE SALARIES MORE COMPETITIVE

Even though the government has a variety of mechanisms to attract scarce talent—the potential social impact and job security, among others—for some professionals, the salary level will continue to be important. Therefore, it is advisable to attempt to reduce to the greatest extent possible the salary gap with the private sector. Some short-term options include paying the maximum amount allowed within existing salary ranges (as is done in the United Kingdom and the United States) or creating a salary supplement for digital positions (as is done in Spain and Uruguay). In the context of broader reform of the civil service, which potentially includes the creation or adaptation of a digital profession, a specific salary scale could be created that uses the compensation ranges offered in the private sector as a benchmark (while being consistent with other professions in the public sector). To find a space in the budget for these increments, it is important to improve human resource planning in the public sector, avoiding inertia in hiring for obsolete profiles that add less value.

I

CREATE AN OPEN AND MODERN WORK CULTURE

It is recommended to foster open communication, horizontal structures, and an approach to empowered teams armed with modern technologies, tools, and work spaces.

RECOMMENDATION 2
INVEST IN EXTENSIVE DIGITAL CAPACITY BUILDING

If there is a single paradigm shift linked to digital transformation for civil servants, it is learning: all civil servants will need to update their skills. This is key to learning to use new work tools, adapting to new roles, and creating a vision of the potential of digital transformation for each context, among other objectives. Since digital transformation is a continuous process, the learning process for civil servants must also be continuous. The training provided by LAC governments to civil servants, particularly with respect to technology, tends to be insufficient and sometimes of little relevance and poor quality. Therefore, LAC governments must invest substantially in improving both the quantity and the quality of digital training in the public institutions that are making progress on digital transformation. Training should be designed for at least four groups of civil servants:

Digital specialists to keep their skills up to date. This is especially important in the context of digital professions, in which specialists are expected to remain in the public service for a long time. These abilities might also improve through interaction with temporarily employed digital talent.

Senior leaders and middle management to familiarize them with digital transformation, help them to see how it fits in with the work of their institution, and guide them in the task of sup-

porting their employees in the process of eventual changes in their tasks and roles. In Israel, this has taken the form of a ten-month program that consists of formal classes, group exercises, and study trips (see Chapter 4). Canada runs a five-day boot camp in design thinking skills and digital and data technologies, which teaches institutional leaders and managers how to take those skills back to their organizations.
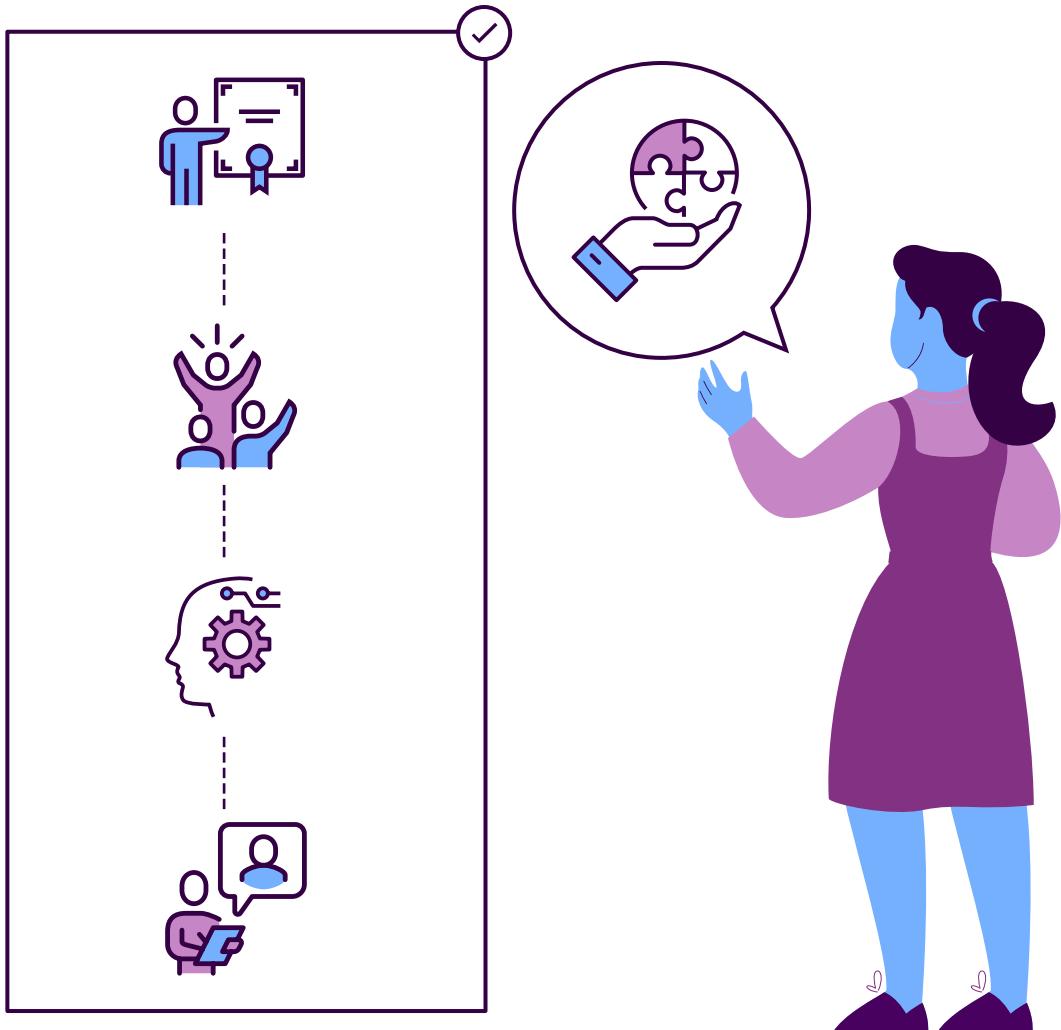
Civil servants whose jobs have been changed by the digital transformation to help them adapt to their new roles.

All civil servants working in institutions in the process of implementing digital transformation to encourage them to adopt the new technological tools available in their institution and increase openness to change. In Spain, part of the training plan for civil servants includes direct engagement with the shared digital tools provided by the digital authority, the General Secretariat for Digital Government as part of the digital transformation strategy, such as the electronic signature, interoperability, and national payment gateways, among others. The objective is to provide training throughout the government, at both the central and the municipal levels.

There are many options for providing such training. For this reason, the final choice should include considerations about its sustainability. Since capacity building is a continuous effort,

the option to develop in-house capacities to train employees may be more cost-effective than other alternatives of hiring outside organizations. Various countries have developed large-scale institutional capacity-building models. In the United Kingdom, for example, the Government Digital Service manages the GDS Academy, which provides a wide range of training in digital themes for beginners and experts alike. In Spain, the General Secretariat for Digital Government collaborates closely with the National School of Public Administration to provide wide-ranging and up-to-date training. In Brazil, the Secretariat for Digital Government offers an online digital transformation studies program in conjunction with the National School of Public Administration.

CAPACITY-BUILDING PRIORITIZATION AND PLANNING MECHANISMS MUST BE ESTABLISHED TO ENSURE THAT THE PROCESS IS ALIGNED WITH THE DEPLOYMENT OF DIGITAL TOOLS, THEREBY AVOIDING POTENTIAL FAILURES CAUSED BY LACK OF CAPACITY WHEN IMPLEMENTING DIGITAL STRATEGIES.

RECOMMENDATION 3
CREATE MECHANISMS FOR ADDRESSING DISRUPTIONS DIGITAL TRANSFORMATION CAN CAUSE FOR EXISTING CIVIL SERVANTS

Digital transformation can modify many jobs and eliminate some of them (Chapters 4 and 5). Although training is a key tool for managing these disruptions, there are other actions that can be implemented to facilitate digital reforms and boost their chances of success. The following complementary measures should also be considered:
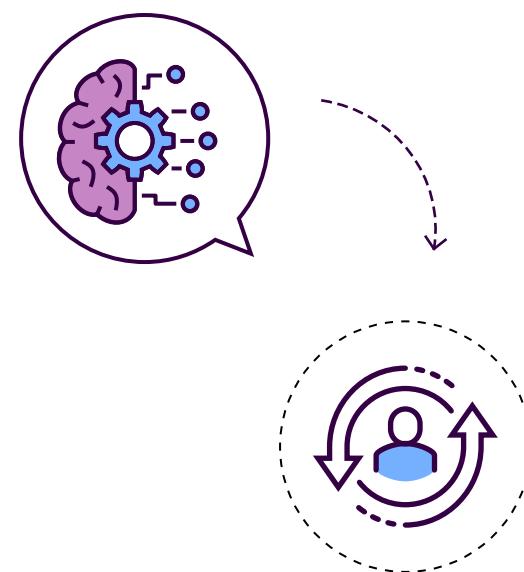
Proactively identify the roles that are susceptible to change and or elimination following implementation of a digital reform and design appropriate and personalized adaptation measures. Chile's Social Security Superintendency, examined in Chapter 5, provides an example of this practice. Here, before initiating technological change, they identified which roles would be affected, in what way, and which combination of participation, capacity-building, and internal mobility would then be most appropriate for each case. This approach is particularly important in the cases where financial savings are sought by not replacing jobs held by external contractors or employees on the point of retirement.
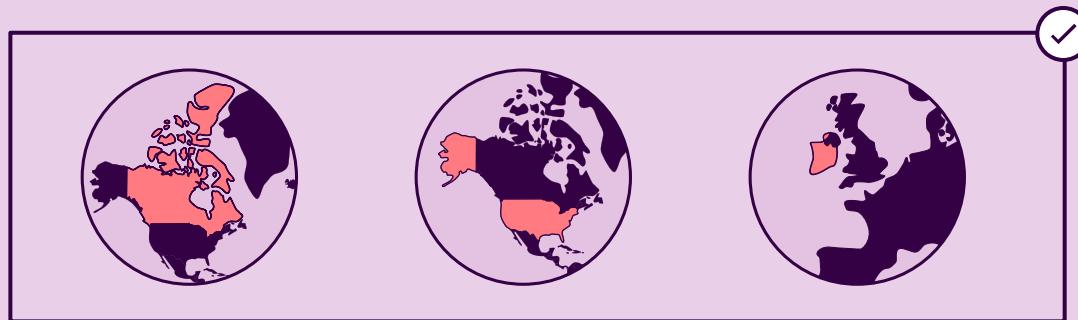
Develop options for internal mobility to facilitate relocation to other positions following the modification or elimination of roles.[102] The implementation of mobility mechanisms requires the entire civil service to be managed as a single organization (known as the whole-of-government concept in the literature). This means overcoming silo-based management to ensure that the allocation of human resources is implemented strategically across the public administration. The idea of mobility is not foreign to practices existing in LAC, such as "secondment." However, according to the Civil Service Development Index (Cortázar, Lafuente, and Sanginés, 2014), development of job mobility practices in the region is limited, leaving significant room to facilitate the mobility of human talent throughout the public sector. Box 6.1 includes three examples of mobility schemes seen in OECD countries.

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102. The OECD Recommendation on Public Service Leadership and Capacity includes the development of job mobility mechanisms that promote a civil service with the capacity to adapt to challenges, such as the introduction of digital tools (OECD, 2017; 2019).

BOX 6.1 Comparative Experiences of Mobility in the Civil Service

Canada
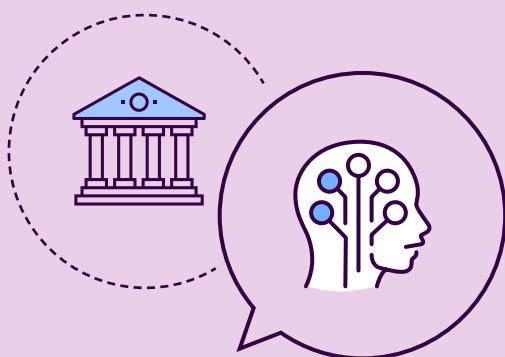
Interchange Canada was conceived as a mechanism to facilitate the mobility and temporary exchange of civil servants both inside and outside the central administration. Among its objectives are: (i) to transfer knowledge and experience; (ii) to build a better understanding between the public and the private sector, by improving inter-sector networks; (iii) to enhance participants' professional development; and (iv) to meet organizational needs, such as attracting experts or helping civil servants transition to retirement (OECD, 2017). The job rotations can last up to three years, during which time civil servants continue to be employees of their original institution, while the receiving institution is usually responsible for paying their salary. Job rotation opportunities can be identified either through the civil servant's own contacts (or their supervisors) or through a centralized portal for opportunities and candidates.

United States

Joint Duty is a special collaboration program for the Department of Defense and the Office of the Director of National Intelligence. Following the September 11, 2001, terrorist attacks, Congress granted the agency powers to create cross-cutting human resource policies among intelligence organizations, including a joint work (joint-duty) requirement for the executive levels. It created a 12- to 36-month job rotation system for employees of the intelligence agencies, enabling them to gain broader knowledge of how the other agencies and departments functioned. The aim of this program was to build knowledge and experience among agencies by fostering an environment for information sharing, cooperation, and intelligence integration at all organizational levels.

Ireland

The Civil Service Renewal Plan, launched in 2014, proposed to "broaden professional development and mobility opportunities for staff across geographic, organizational, and sector boundaries." This included developing the Senior Public Service, advertising mobility and secondment opportunities in the civil service on a single portal, speeding up mobility by working to help managers to replace their staff, and introducing a new policy that frees up personnel to be transferred within the maximum of one month, among others.

Source: Pizarro, Lafuente, and Mosqueira (2020).
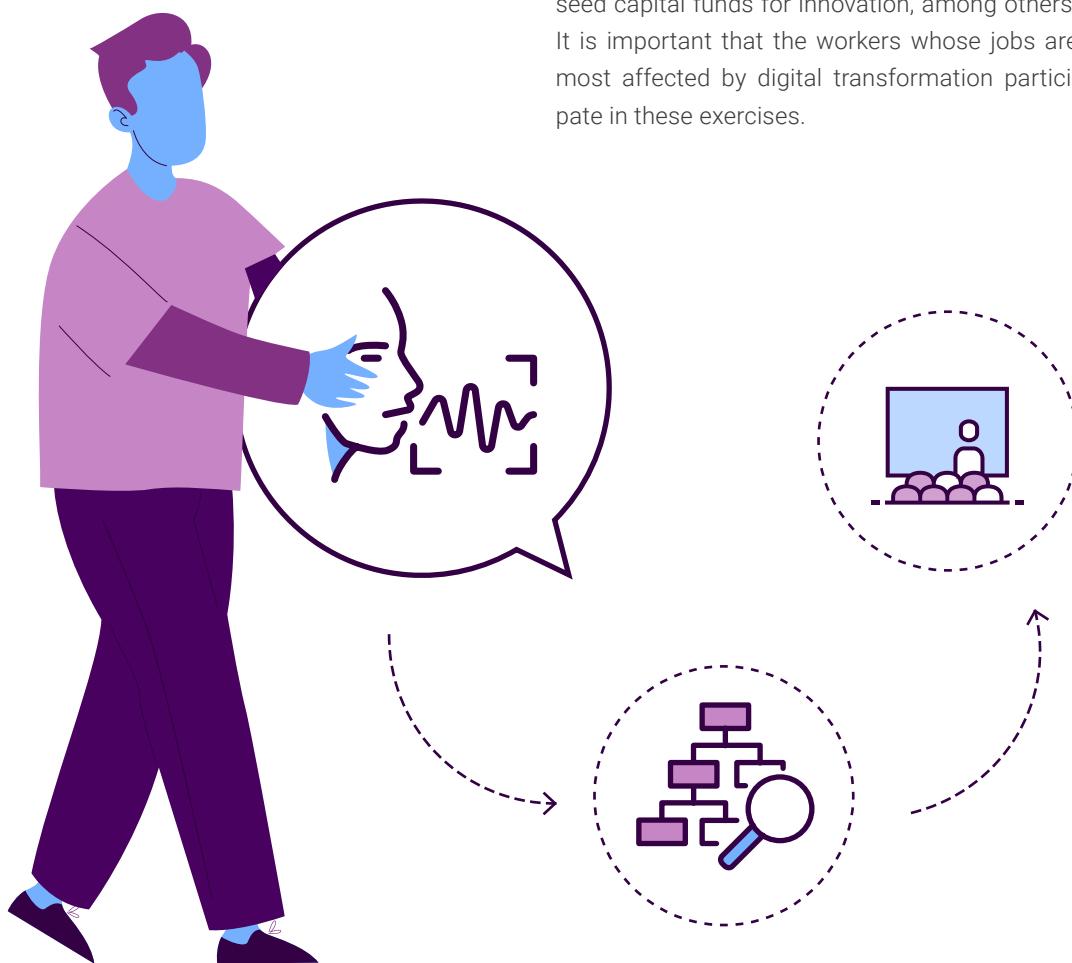
Promote change management through strong and visible leadership with effective communication. The lessons learned from implementing digital transformation initiatives highlight key roles for managers and supervisors. First, it is essential that senior management have human resources with capacities to: (i) gauge and understand the scope and technical complexity of the digital transformation; (ii) coordinate the preparation and execution of plans in which multiple agencies and units participate; and (iii) design and direct the implementation plans. Second, it is crucial to involve upper management, that is, those with deep knowledge of the organization. Management can use its knowledge to design and implement the best communication strategies for the different interest groups affected by the digital transformation, clearly explaining how these changes will affect employees, managing expectations in the face of change, and creating a calm environment. Given the high potential impact of digital transformation on the jobs of lower-level civil servants, it is important to address their concerns in these communications.

Provide opportunities for participation. Involving civil servants directly in the design of the new tools can improve their design, help demystify them, mitigate resistance to change, and increase their uptake. This can be done by using agents of change programs, in which certain civil servants from an institution participate in the early stages of the introduction of a new tool and by creating seed capital funds for innovation, among others. It is important that the workers whose jobs are most affected by digital transformation participate in these exercises.
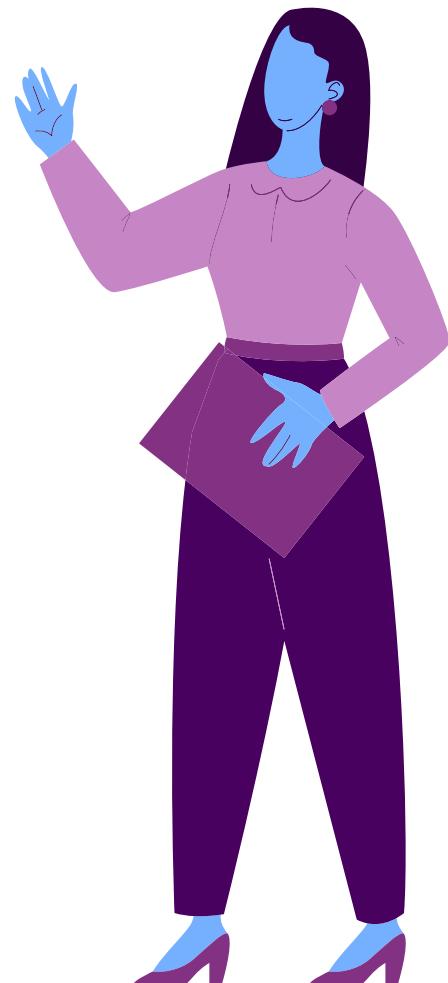
Effectively manage the role of outside consultants to minimize negative perceptions about their participation, usually on higher salaries than those paid to civil servants. Their activities should therefore include sharing their knowledge with civil servants, while the routine tasks of operating and maintaining the digital tools remain in the hands of the permanent staff.

Prepare for possible redundancies. During the course of a digital transformation initiative, some roles may become obsolete and there may be no good job relocation option available within the public sector. Faced with such eventualities, voluntary retirement or redundancy packages should be prepared (already used in many countries in the region in other contexts). This will simultaneously maximize public value while respecting the rights and circumstances of civil servants by offering fair and reasonable options. In some cases, this will require regulatory changes.
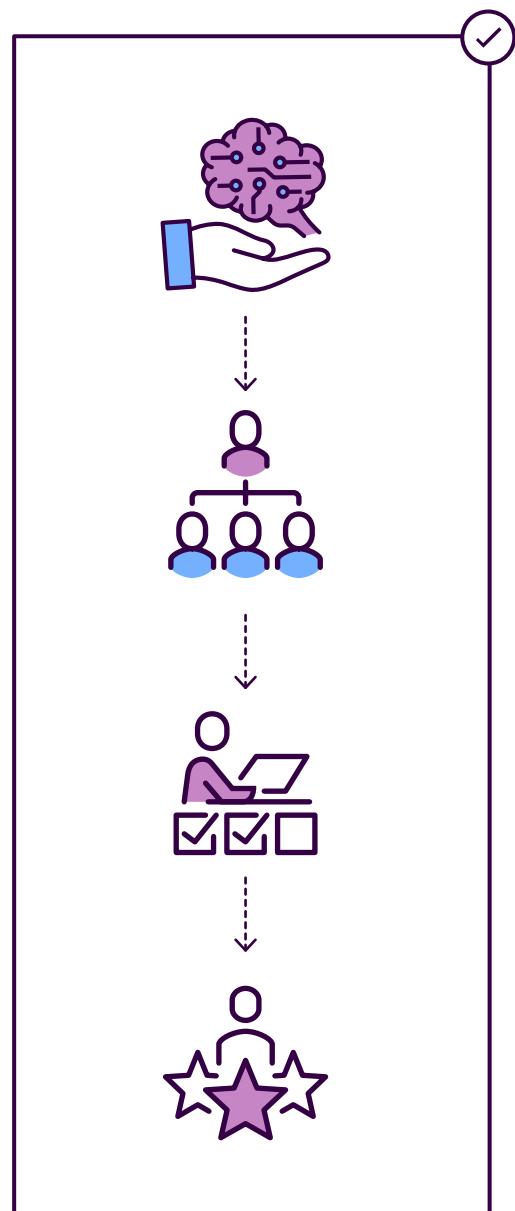
RECOMMENDATION 4
ENSURE THAT THOSE RESPONSIBLE FOR DIGITAL TRANSFORMATION, HUMAN TALENT MANAGEMENT, AND BUDGET MANAGEMENT WORK TOGETHER IN PLANNING AND IMPLEMENTING THE PROCESS

Generally, digital transformation and civil service agendas in LAC are debated and implemented separately, despite the unavoidable connection between them. At the same time, civil service authorities are often weak, with limited capacity to play a strategic role, which is essential in implementing digital transformation. Therefore, the following actions are recommended to merge the digital transformation and civil service agendas and strengthen human talent management.

GET ALL THE CRITICAL ACTORS AROUND THE SAME TABLE

The analysis presented in this publication demonstrates that human capital is a critical factor in the success of digital transformation initiatives and all of the recommendations call for its integration in the process. For this to happen, in addition to support from the highest political authorities, the digital government authority, and the institutions' own digital teams, active participation is required from two additional groups of institutions: (i) the civil service governing body and the institutions' offices of human resources, and (ii) the ministries of finance and the planning and budget areas in each entity.
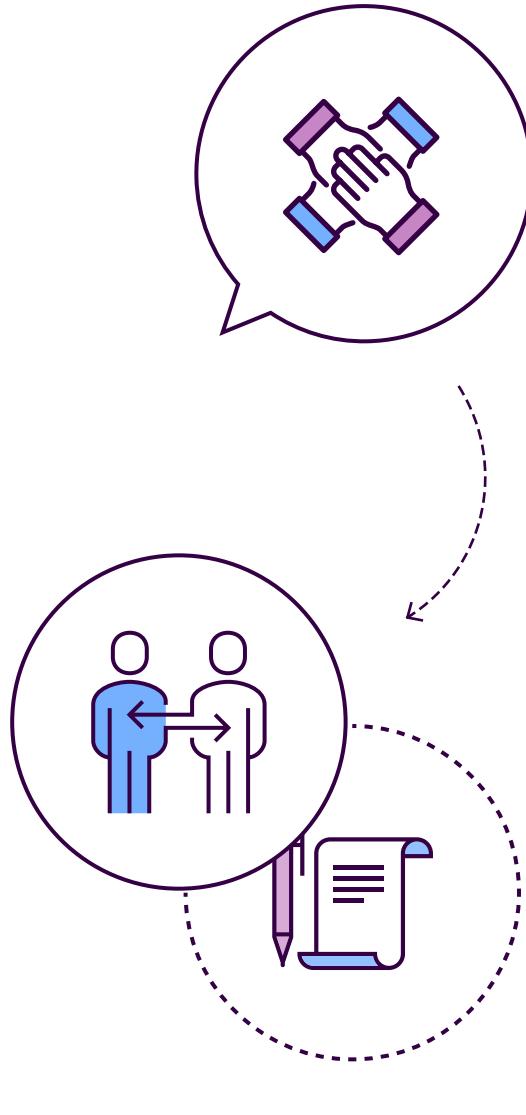
The role of the civil service authority and the institutions' human resource offices. Whereas the civil service authorities are often responsible for formulating and regulating or supervising the implementation of human talent management policies in the government, institutional human resource offices often implement these policies in a decentralized fashion through the management of day-to-day processes. These include formal planning of the institutional workforce; preparing detailed job descriptions for the institution based on the format used by the authority or, as occurs in most countries, organizing competitive recruitment processes for civil servants; and providing support for supervisors to plan and implement performance evaluation, license management, and other tasks.

The role of the ministries of finance and the planning and budget offices in each entity. The necessary actions carry significant fiscal implications: hiring new staff, instituting an appropriate remuneration system, investment in training, and the costs associated with redundancy packages. Those responsible for the budget can help to align the initial plans with what is fiscally possible. Furthermore, the finance ministries—in the cases where the civil service governing authority is not in the same sector—also have an important role to play in workforce planning, an activity that acquires special significance in the context of the digital transformation and establishing pay scales. The budget planning process presupposes an analysis of the fiscal impact of measures that alter the size and the structure of the payroll, as well as of staff composition. For example, incorporating new staff entails an immediate fiscal cost and, depending on the proposed profiles and benefits, can have implications for pension costs. Therefore, proposals for attracting new digital talent must be accompanied by an analysis of the short- and long-term fiscal impact as well as mitigation measures.
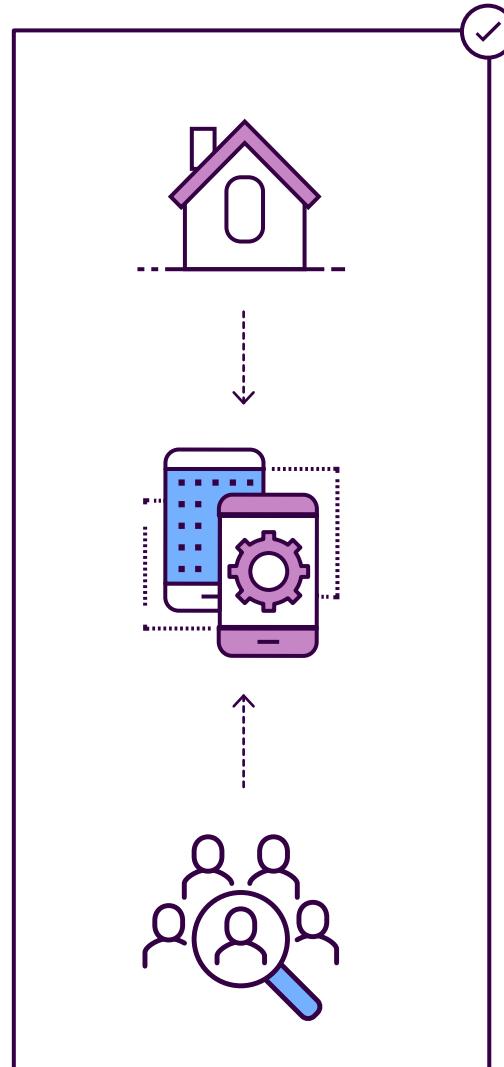
THIS JOINT INTERSECTORAL WORK CAN OCCUR BOTH AT THE LEVEL OF EACH INSTITUTION THAT ENGAGES IN DIGITAL TRANSFORMATION AND ACROSS THE ENTIRE GOVERNMENT (E.G., THROUGH A COMMITTEE ON THE FUTURE OF WORK IN THE PUBLIC SECTOR, PRESIDED OVER BY THE CENTRAL GOVERNMENT).

STRENGTHEN THE TECHNICAL CAPACITIES AND FURTHER EMPOWER THE CIVIL SERVICE GOVERNING BODY AND THE INSTITUTIONAL OFFICES OF HUMAN RESOURCES OR PERSONNEL MANAGEMENT

TO DATE, MOST OF THE GOVERNING BODIES OF THE CIVIL SERVICE AND THE INSTITUTIONAL HUMAN RESOURCE OFFICES HAVE NOT PLAYED A STRATEGIC ROLE IN DIGITAL TRANSFORMATION; RATHER, THEY HAVE FOCUSED ON MAINLY TRANSACTIONAL OR ADMINISTRATIVE FUNCTIONS.
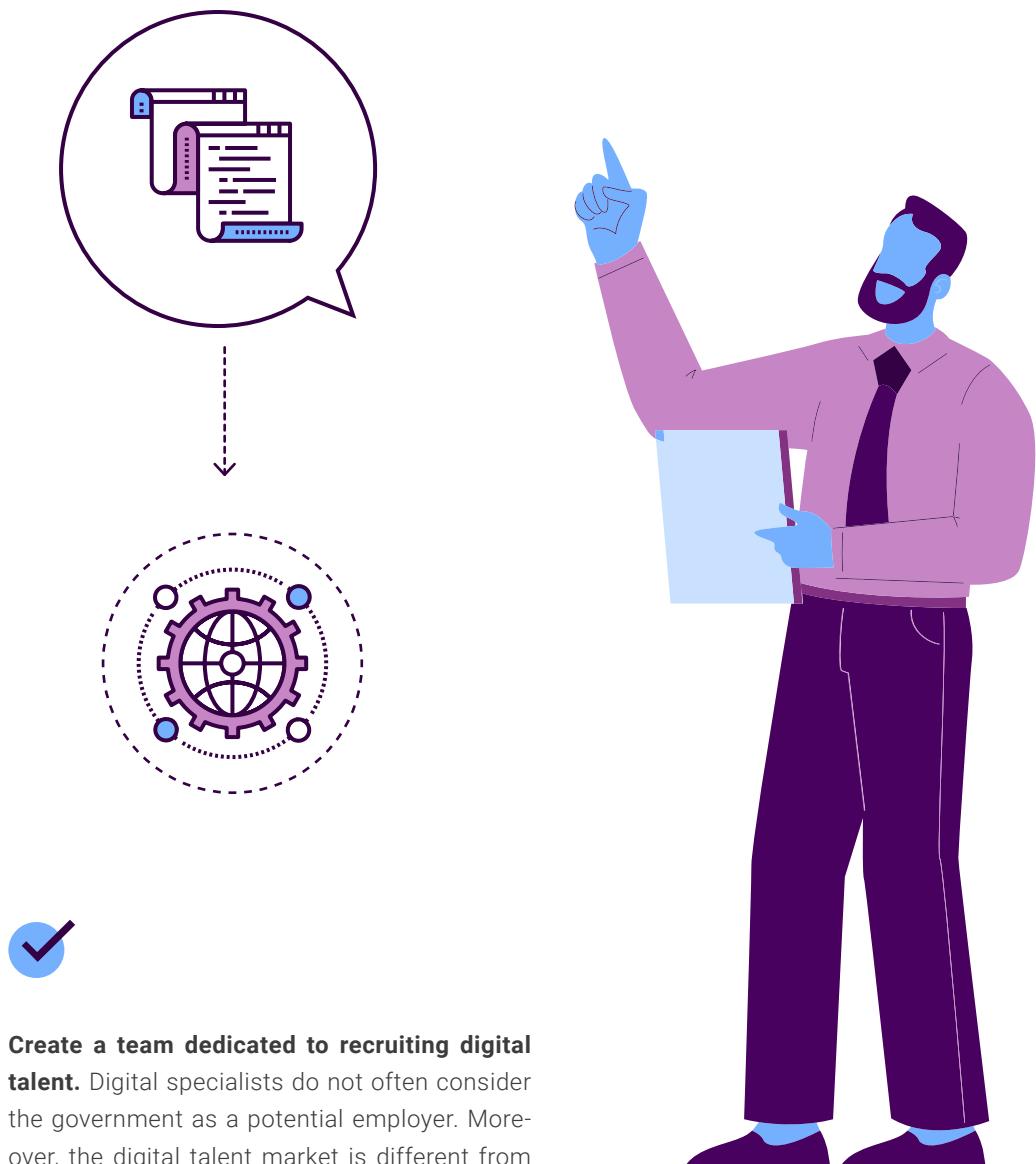
Three types of actions are therefore recommended:

Begin at home. Digital transformation offers myriad possibilities to transform the work of civil service authorities and human resources offices. Technology can help them automate a large proportion of their transactional tasks (e.g., processing job applications or licenses), thereby freeing up time and generating data for more strategic tasks (e.g., proactively seeking talent or evaluating candidates) and decision making. In this vein, the Republic of Korea's e-Saram system, run by the Ministry of Personnel Management (which has even been operating on mobile phones since 2014), integrated and digitalized all human resource management operations, giving this function a more strategic focus.

Develop a new range of services for the institutions about to face digital transformation. If the civil service governing bodies and human resources offices can reduce the number of transactional tasks that must be done manually, they can devote more time to tasks that add more value with respect to digital transformation. These include projections of future talent needs, assessments of the impacts of digital transformation on civil servants, advice on change management practices, support for internal and/or external transfers, updating of job descriptions, and design of voluntary retirement or redundancy plans, among others.

Create a team dedicated to recruiting digital talent. Digital specialists do not often consider the government as a potential employer. Moreover, the digital talent market is different from markets in which the government traditionally competes for talent in terms of its formal qualifications, the speed of the recruitment process, language, and the turnover rate, among others. For these reasons, it can be useful to create a team that specializes in recruiting digital talent for the civil service governing body with support from the digital government authority, which advises and supports the rest of the public institutions. This team may have a variety of functions, including writing (and/or updating) job descriptions and vacancies; promoting career opportunities in universities, events, press, and social networks; adapting recruitment process to the digital segment; and participating in technical interviews.

IN SOME CASES, COLLABORATION BETWEEN HUMAN RESOURCES OFFICES AND DIGITAL GOVERNMENT CAN TAKE THE FORM OF A PLANNING OR A STRATEGY DOCUMENT. THIS OCCURRED IN THE CASES OF CANADA AND SINGAPORE, AS DESCRIBED IN CHAPTER 5.

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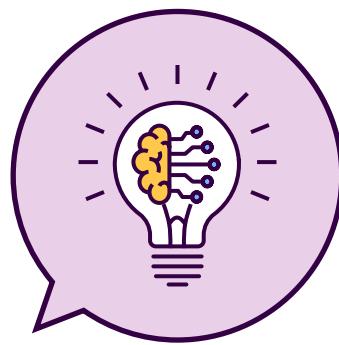
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DIGITAL TRANSFORMATION AND PUBLIC EMPLOYMENT

The Future of Work in Government
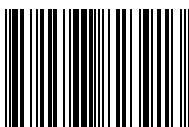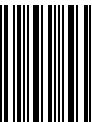
DIGITAL TRANSFORMATION
AND PUBLIC EMPLOYMENT
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All of the aspirations associated with digital transformation of governments around the world—better services, greater transparency, and more administrative efficiency—depend on the civil servants who design, manage, and use the new digital tools. However, the majority of the digital transformation agendas of the region's governments are based on a predominantly technological approach, sometimes with a regulatory and/or an institutional component, with only passing reference to the themes of government human capital. This book seeks to narrow this gap. It brings considerations of human capital to the debate around the digital government transformation, by analyzing the talent needed both to drive digital transformation (the creation and implementation of new technological systems) and to adapt to it (the effective adoption of new tools and the subsequent reorganization of work). Likewise, it puts forward a series of practical recommendations for preparing civil servants for the disruptions brought about by the fourth industrial the revolution.

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