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# Ibero American Charter on Artificial Intelligence in Civil Service

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## Preamble

Our societies, including civil service, are going through a process of profound transformation, among others, because of the so-called Fourth Industrial Revolution (Revolution 4.0), in tandem with the widespread use of artificial intelligence (AI) in multiple spheres of human life. AI refers to a series of emerging and disruptive technologies with an impact right now and over the upcoming years on governance in the public sector.

The participants in the 26th Congress of the Latin American Centre for Development Administration (CLAD), held in Buenos Aires in November 2019, passed a final declaration that first mentioned the opportunities associated with AI in the public sector of the countries in the Ibero American region. This Ibero American Charter on Artificial Intelligence in Civil Service is a roadmap for CLAD Member States, to learn about the challenges and opportunities involved in the implementation of AI and algorithms in public service. All of this deals with administrative and governance matters barely explored, including technological, political, social, educational or ethical issues.

AI has become part of the concerns of governments and international organizations. The International Telecommunication Union (ITU), under the umbrella of the United Nations, maintains that AI is of the essence to attain the Sustainable Development Goals (SDGs). This is true, above all, considering the unprecedented availability of data on human activities, namely health, education, security, communications, economy and migration, among others. ITU's slogan is "Artificial Intelligence for Health," as a necessary condition for the SDGs. For their part, as a token of the varied impacts of AI, UNESCO Member States produced on 23 November 2021 the Recommendation on the Ethics of Artificial Intelligence.

The Organisation for Economic Cooperation and Development (OECD) has listed a number of principles to be borne in mind in relation to the implementation of AI. They include, among others, inclusive growth, sustainable development and well-being; human-centred values and fairness; transparency and explainability; robustness, security and safety, and accountability (OECD, 2019). Furthermore, the Council's Common Position on Artificial Intelligence Act (2022) shows the need to galvanize domestic policies and

cooperation in order to instil confidence in AI, especially relevant in least economically developed contexts.

For their part, the European Union has emphasized that AI ought to be focused on citizens, trust and excellence. Compared with some other global models that mirror a complex relationship with personal privacy and protection of personal data, the EU's approach intends to put persons in the centre of AI, respecting their privacy, attempting at a sustainable model and making provision for innovation and novel data-based business models. This is specified in the White Paper on Artificial Intelligence: a European approach to excellence and trust. To reap fruit from AI, there is the need to consolidate a trustworthy ecosystem, able, on the one hand, to protect fundamental rights and ensure consumer rights, and, on the other hand, to create innovative ecosystems and boost sustainable economic development.

From all such experiences, this Charter takes a step farther by offering specific guidance for governments and civil service of Member States to consolidate their own strategies and policies on AI. Specifically, this Charter identifies the key aspects for the adoption and use of AI from and in Ibero American governments and civil service. This is completed by a series of recommendations on the implementation of this Charter and of projects that recognize persons as the centrepiece.

Within this purview, the next session of the Conference of Ministers on Civil Service will adopt this Charter and recommend CLAD Member States to implement its provisions and take action voluntarily, resolutely and as necessary, particularly law making, in accordance with their constitutional and administrative practices, for their inclusion in governments and civil service. For this purpose, Member States are exhorted to join efforts with all the stockholders in the public, private and third sectors; the academia and the civil society for the adoption and implementation of the contents of this Charter.

## Chapter 1. Background

### 1.1. Overview

The **Ibero-American Charter on Artificial Intelligence in Public Service** (hereinafter, the “Charter”) is the result of the interest of the countries in the Ibero American region to include in a sensible manner emerging technologies in all of the public sector agencies; promote their use in social, cultural, economic and political areas, among others; cash in on their opportunities; minimize potential risks, and ensure human rights.

### 1.2. Objectives of the Charter

The **primary objective of the Charter** is to provide a common framework for the development of artificial intelligence from and in Ibero American civil service.

Additionally, this Charter pursues the following **secondary objectives**:

- a) Define conceptual basics, applicable in a flexible manner ahead of potential changes in the future, to comprehend the extent of AI, improve governance and foster good government in the Ibero American sphere.
- b) Establish a set of principles as common guidance on AI for civil service in the Ibero American community.
- c) Support civil servants with knowledge and exchange of information for the easier implementation of AI in both the workplace and all the activities intended to improve civil service.
- d) Identify a set of key dimensions and guidelines for the adoption and use of AI in all national government agencies, from a comprehensive and systemic perspective.
- e) Offer recommendations and guidance on the development of AI from public authorities, in line with the rest of the Ibero American Charters previously approved, for the purpose of smart governance.

### 1.3. Scope

This Charter encompasses national, state and municipal governments, according to their own rules and practices, as a baseline for all and any of them, with special emphasis on lower administrative levels, which have fewer resources available and are closer to citizens.

## Chapter 2. Conceptual development; definition of AI; development stages; benefits and risks of AI in civil service

### 2.1. Artificial Intelligence – Definition

For the purposes of this Charter, artificial intelligence means a special and disruptive kind of information and communication technology (ICT), based on the use of data and algorithms, able to yield stand-alone and/or smart capabilities and complete tasks usually regarded as human, to attain certain goals in multiple spheres, including perception, reasoning or action.

**Additional definitions and concepts** associated with AI (for instance, algorithms, data and automated decisions), as well as specific techniques based on AI (i.e., voice aides and facial recognition systems), may be spelled out in the Charter appendices (see the conceptual appendix), and in some other specific papers for common and continuing knowledge in Member States.

Additionally, this Charter makes a distinction in the promotion of AI from and in civil service. This means that AI potential in relation to civil service points to two levels:

- a) **AI in civil service:** any action furthered by governments and civil service by means of regulatory, financing, training and knowledge instruments with government agencies, including their staff and organizational structure, as the purpose and scope.
- b) **AI from civil service:** any action furthered by governments and civil service by means of regulatory, financing, training and knowledge instruments with third parties (i.e.: civil society, economics and culture, among others) as the purpose and scope.

This Charter elaborates on issues related to AI in civil service; however, it does not run counter to the projection of AI to other sectors from civil service. Such a distinction makes sense for proper planning and development of skills and capabilities of civil servants who lead AI projects, and to count on the necessary resources (i.e.: economic, technology and human resources, among others) to achieve results and make an impact on the target audience. Concomitantly, the interconnection and common areas of the two domains mentioned above are acknowledged.

## 2.2. AI development stages

With a view to identifying and estimating the potential outcome, this Charter assumes the existence of multiple **AI development or maturity stages in organisations**, generally, and civil service, particularly. Each development stage, in line with some other approaches, such as the notion of strong and weak AI, involves multiple uses of AI and algorithms, in addition to the degree of related organisational and human changes. In the spirit of circumventing technology determinism, either cyber-utopian or cyber-pessimist, the different waves in the current deployment of AI in our societies include the following:

**Internet AI.** It is the first development stage, sped up by platforms or digital social networks since the first decade of the millennium and present from the very beginning of the early internet-based businesses and organisations. This wave primarily entails the use of recommendation systems within digital networks and platforms that, by means of algorithms, learn about human preferences and provide tailor-made contents. At this development stage there are still limited changes in organisations with little impact on persons.

**Business AI.** It is the second development stage, temporarily overlapping with the earlier stage. In this case, AI based systems browse in databases built by organisations over the years through the persons who interact with them. The aim is to create patterns to forecast trends, i.e.: consumption of specific goods, or behaviour around the use of health, education, security and otherwise services, or for new texts, images or videos. At this development stage, deeper changes occur in organisations, beyond the increasing automation of tasks, towards predictive activities. In parallel, there is a higher impact on persons, insofar as new forecast attributes gradually shape human decisions and performance opportunities.

**Perception AI.** It is a quantum leap, still incipient at the time of preparing this Charter. Here, AI spreads over our social and physical environment through the increasing digitalization and interaction with sensors, smart devices and neuro-technologies, including a growing processing attribute, which will be bigger in the future thanks to quantum computing. This will allow for the exponential growth of the perception of the world and human activity. At this development stage, the divide between the physical and the digital worlds gradually vanishes up. This stage opens the door to changes in organisations and individuals, materialized in the creation of hybrid environments, the embedding of physical or digital

devices in the human body, the exploration of new augmented realities or expanded human skills by means of manmade devices.

**Stand-alone AI.** It is the top development stage, heading for a hypothetical context yet to be realized. In this scenario, AI will go beyond. Robots and smart machines will help not only improve the perception and understanding of the world, but also shape the world by introducing stand-alone capabilities in human beings. At this development stage, compared with automation-driven systems, stand-alone systems will venture into machine uniqueness. This means that, going hand in hand with the exponential growth of data computing, the perception of the environment, augmented reality, or the implementation of neuro-technologies, robots and smart machines could have skills attributable thus far to humans, namely analysing, recalling, learning, and anticipating, but also perceiving, deciding, creating or feeling.

Having recognized the above-mentioned **development stages** (the former two, weak AI; the latter two, strong AI), this Charter takes on responsibility for understanding and covering the needs for the gradual implementation of AI in civil service. This includes the assumption that such implementation will not be homogeneous across the sectors and areas of public service or countries. Nonetheless, it will entail common challenges. Concomitantly, each AI development stage entails opportunities for the public sector that should be explored and leveraged for the sake of citizens.

### 2.3. AI benefits in civil service

A set of potential **benefits** associated with the implementation and **use of AI in the government sphere** has been identified, for both the public sector and civil society as a whole, with special mention of the Ibero American context.

Based on such recognition, the intention of this Charter is to nurture the following AI opportunities in civil service

- a) Streamline administrative processes and public utilities based on AI, focusing on individual needs and resulting in better flexibility, effectiveness and fairness.
- b) Upgrade decision-making relying on data and evidence, for increasing accuracy, speed, volume, variety and public value.

- c) Patronize inter-administrative and inter-government cooperation in order to expand the cross serviceability of data and information, and for a rather comprehensive vision of civil service.
- d) Work on transparency and strenuous efforts against corruption, with the help of AI systems, to improve accountability in the public and private sectors and in citizens in general, and for a better government.
- e) Broaden participation based on ethical algorithms for rather inclusive public policies by involving more individuals and social groups in public affairs.
- f) Move ahead with citizen cooperation in solving challenging public matters, by converging institutional, collective and artificial intelligences.
- g) Achieve the highest level of citizen trust in increasingly legitimate government agencies through the joint action on the largest possible number of improvement areas.
- h) Strengthen democratic systems through the sensible use of algorithms and AI systems for the common well-being.

In all these areas, the use of AI in civil service introduces opportunities that need to be maximized and promoted by the agencies responsible for their encouragement and implementation nationwide, prioritizing the key aspects in each case.

## 2.4. The challenges of AI in civil service

A number of potential **challenges** associated with the implementation and use of **AI in the government area** has been identified for both the public sector itself and civil society as a whole, with special mention of the Ibero American context.

Hence, this Charter intends to minimize the following challenges of AI in civil service:

- a) Remove the biases of gender, ethnics, religion and any other human feature that may be mirrored in data that feed AI systems.

- b) Prevent algorithm opacity in automated public services and decisions through the monitoring and audit of algorithms in every moment of their life cycle, from design to assessment, to avoid black box effects and contain any restrictions on explainability and accountability.
- c) Lessen the impact of the transition of features and tasks to robots and drones, by developing labour skills fit for persons, for the harmonious coexistence of persons and machines.
- d) Straighten the invasive control in the workplace over civil servants by the proper regulation of algorithms in every aspect of the work relationship.
- e) Preclude the violation of fundamental rights resulting from algorithm-based decisions by means of accountability in all and any processes and actions taken for their operation.
- f) Narrow the digital gap and reduce the risks of social and economic side-lining resulting from the widespread use of emerging technologies, prioritizing persons and education at all age levels.
- g) Avoid any undesirable effects from the use of AI systems by anticipating the ethical conundrums in especially sensitive areas or areas at a high risk in the public sector.
- h) Reduce citizens' distrust in their interaction with the machines operating in civil service by making the operations simpler, clearer and friendlier.
- i) Ensure human rights in the interaction with neuro-technologies by setting up the necessary controls of the devices and systems used in each case and analysing the consequences of the expanded mental and physical skills (transhumanism).
- j) Oversee the independence of public authorities in respect of private corporations in the creation, development, implementation and assessment of algorithm models and AI systems.
- k) Negate the use of AI to erode democratic systems, particularly by overseeing the use of algorithms designed to disseminate fake news and promote disinformation or misinformation.

Upon recognition of the challenges listed above and any other challenges that may arise in the future, AI should be adjusted to the national realities and multiple administrative contexts wherever appropriate. National regulatory authorities, in accordance with this Charter, should help anticipate and lessen the potential undesirable effects and risks of AI in the public sector and the society.

### Chapter 3. General principles of AI in civil service

The development of AI in civil service should depend on respect for the characteristic features of individual countries, in political, administrative, social, cultural and legal terms, as well as in implantation processes. Ibero American nations ought to join efforts to achieve common recognition and respect for national sovereignty, bearing in mind all political, language, legal, social, economic, ethnic and otherwise particulars in order to improve the opportunities of the far-flung use of AI in the region.

Based on such recognition, this Charter advocates a series of guidelines on the development of AI in civil service, to be shared by all the countries in the Ibero American region. These guidelines are based on **human rights** for a person-centred, reliable, robust and innovation-driven AI. These guidelines cover respect for human dignity; individual freedom; equality and non-discrimination; respect for democracy and the rule of law; freedom of thought, conscience and opinion; and the right to education, in addition to good government and proper civil service.

The principles broken down herein below should also rely on a sound **ethical approach** of AI in civil service as a **general principle**. This means the express admission of the need for an assessment tool of the ethical aspect of the multiple domains covered in this Charter to itemize the implications in human rights and fundamental liberties. In this connection, regulatory instruments ought to be established to assess the ethical impact of AI on civil service in order to anticipate risks, prevent undesirable effects and ensure its proper implementation.

The **guiding principles of AI** in civil service include:

- a) **Principle of human autonomy.** Algorithms and AI should be adopted in the public sector, provided, always, that users will retain their control over any data to be used, the context where such data are to be used, and the ability to change both the use and context.

Concurrently, AI systems ought to be designed and developed to increase, improve and enhance human skills. This will strengthen human independence from third parties, including machines, and offer the widest possible array of opportunities to choose.

**b) Principle of transparency, traceability and explainability.** The deployment of algorithms and AI from and in public service must be founded in the dissemination of significant, in-context and consistent information and data. In any case, steps will be taken to ensure people's understanding of AI systems; check that the interacting parties are cognizant of this relationship; impart knowledge about the results of AI utilization (including algorithms, which may be the basis for action, forecast, recommendations or decision making), and make use of AI potential effects from available, affordable, understandable and traceable information across the life cycle of AI systems.

**c) Principle of accountability, liability and auditability.** The parties involved in design and use of algorithms and AI systems in public service must be accountable for the proper operation of AI, observe human rights and abide by the remaining principles stated herein. All this is warranted by tools and methodologies of algorithmic audit, which allows for the periodical assessment of AI systems by algorithm operators. Member States will create, in each case, supervising agencies to ensure the quality of designs and impact of algorithms, preferably oriented to assessment and audit of their operation in public service, but also in the private sector, as appropriate.

**d) Principle of security and technical robustness.** AI systems must be secured and protected; they should be neither vulnerable nor handled by non-authorized parties, and they should not expose the relevant data. Any unforeseen damage should be avoided by taking the necessary prevention steps through their life cycle. This will be ensured by security standards and regulations intended to protect data access, exchange and use under domestic laws in force. Concomitantly, since robustness implies on-going adaptation to new scenarios and data changes, government agencies working on life-long training must be aware of unpredictable scenarios and look for related risks.

**e) Principle of reliability, accuracy and reproducibility.** Technical reliability of AI systems will be ensured by proper means of validation of algorithms to help consolidate their operation, from design to impact assessment. Reliability involves the proper operation of data in multiple contexts, completed by repeatability of the performance of

AI systems, making provision for same results in same conditions. Whenever the reliability of forecast, recommendations or decisions is at risk, algorithm systems must include precision tools based on the likelihood of potential errors resulting from data analysis, in order to remove or mitigate any occurrence where human injuries may be higher.

f) **Principle of confidence, proportionality and prevention of damage.** Algorithms and AI are to be included in public service driven by the necessity to engender trust in both ordinary citizens and the parties interacting with public service in multiple contexts. From this recognition, AI must be targeted at legitimate purposes, in proportion to its use in each case. Mechanisms should be set up to avoid potential personal injury, human rights abuses or environmental damage, as well as the means to repair or compensate for undesirable effects.

g) **Principle of privacy or protection of personal data.** The assurances for privacy of personal data are inherent in the use of AI systems, which are fed by massive and dynamic management of data, in or out of context. This means that public service and third parties should observe domestic laws and regulations on personal data protection. Special attention must be paid to the potential risks of increasingly sophisticated AI systems aiming at standalone learning, and to the growing availability of personal data generated in uncontrolled social contexts. In any case, assurances must be given against the use of algorithmic data that may disrupt privacy or protection of personal data. The establishment of protocols on access and use of personal data should be taken into account, clearly identifying under which circumstances, who, how and what for.

h) **Principle of data quality and safety.** The sources that support algorithm systems in civil service might come from an enormous variety of personal data and contexts, among others. Data quality and safety in civil service is pivotal for the proper and successful performance of AI systems. To that end, government agencies must set up mechanisms to ensure data collection, screening, training and use in accordance with quality standards; prevent the use of biased, mistaken or non-representative data, and remove the possibility of discriminatory, skewed or wrong decisions. Civil servants responsible for data screening and training must develop good practices, including source traceability; quality assurance; restriction of potential biases, and the use of multiple data sets for training, testing, and validation, in addition to data review and update once in a while.

i) **Principle of fairness, inclusiveness and non-discrimination.** Fairness must be endorsed at any time when using AI systems from and in civil service, by ensuring the

equitable distribution of risks and benefits in all contexts, and helping to bridge the existing societal gaps. Concurrently, the potential involvement of everybody in the life cycle of AI systems must be ensured. To that end, regulatory authorities must urge within their sphere of influence the implementation of the global design of algorithm systems; facilitate inclusiveness and give universal access to these technologies, regardless of individual features, with special emphasis on disabilities or vulnerabilities related to the economic status, gender, age, ethnic and culture, among others. In addition, the public branches of government must open up the possibility of challenging the decisions made by algorithm systems, and the potential compensation for damages caused by unwise forecast, recommendations or decisions.

**j) Principle of human-centring, public value and social responsibility.** AI in civil service must be human centred, observe human rights and work on public value in all the actions resulting from its deployment in multiple spheres of life. The rollout of algorithm systems will make a direct and profound impact in key areas, namely education, health, labour, democratic policies or social affairs. Therefore, persons should be the centrepiece in the design, use and impact of algorithm systems. Moreover, the most possible value should be furthered in local, regional, national and international political communities, as well as the maximum social responsibility in the economic exchange among companies, their employees and consumers. Consequently, the public branches of government must prevent biases or inadequate use of these technologies, and ponder on every necessary action for their sensible, human-centred use by them and by all the stockholders in the private sector, the third sector and the civil society.

**k) Principle of sustainability and environmental protection.** The use of environmentally-friendly technologies must be promoted (i.e., green algorithms), based on the utilization of reusable materials and devices and renewable energy sources. In the public sector, this should be in line with the SDGs. In this connection, the design, use and development of AI in and from civil service must be targeted at the well-being of societies, respect for all life forms on planet Earth, in the highest interest of humans and for the sake of future generations.

## Chapter 4. Key domains for AI implementation in civil service

Having recognized the existence of multiple approaches and models to develop AI in civil service in the Ibero American region, and considering the compared reality, this Charter offers a roadmap on the main action steps to be taken under the principles contained

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herein. In addition, this Charter intends to summarize, arrange and facilitate AI subsequent implementation in the public service. Thus, having reasserted the diversity of individual states and the particulars of individual administrative models in the region, the following domains must be considered in unison to boost AI in civil service.

#### 4.1. AI and civil service as part of country strategies

International evidence shows that multiple nations have set out **country strategies for AI from and in civil service** and they are working on laws and regulations to encourage and standardize AI, even in the public sector. This Charter emboldens countries to lay down their own AI strategies with a view to building an adequate institutional and regulatory framework for the extensive use of AI in the entire society and government agencies at all levels. Moreover, individual countries are advised to implement their own elementary standards according to the reality of algorithm systems, from their own political and administrative viewpoint. At the same time, the purpose is to influence resolutely on the actions of the stockholders (i.e., in the business of technology and other economic sectors, civil society organizations, the academia, etc.), creating an innovative ecosystem for technologies and infrastructures, based on trust and human rights of all persons.

**Country strategies for AI in civil service** must target at the promotion of multiple **key elements** with a country vision. General guidelines must be set on the economic, social, political, cultural, administrative and otherwise extent of AI, including, at least, the following:

- a) The **democratic values** at stake as a result from the sweeping use of algorithm systems and their effects on democratic institutions in the future.
- b) The **ethical options and data governance model** sought with this strategy.
- c) The expected **impact** of governance, measured by algorithms in multiple social areas, the country natural ecosystem or human rights.
- d) The **economic sectors** expected to be invigorated through AI rollout, with special emphasis on general interest universal systems (energy, telecommunications, water, transport and mobility infrastructures, basic financial services, etc.).
- e) How the **country academia** and scientists can catalyse new research and innovation on specific key issues related to AI and future development.

- f) The identification of **new skills and knowledge** in professional fields of expertise and educational centres for the availability of capable labour force.
- g) The **identification of the most affected targets in society** to fill gaps and overcome inequalities, by cashing in on the deployment of these technologies.

All of the foregoing must contribute to setting an AI strategy for all domestic sectors in order to cement the **algorithmic autonomy before third parties** and concurrently bolster cooperation and multilateral and inter-government talks in ad hoc global forums.

Based on this overview, the **country strategy on AI in civil service** should lead AI deployment in all the domains of the public sector. Within the scope of civil service, the momentum for algorithm systems through a nationwide strategy must include a series of key issues, namely:

- a) Implementation of **technologies and infrastructure** necessary for AI to offer every opportunity in civil service, as well as cybersecurity.
- b) Integration of institutional, collective and **artificial intelligences in civil service** to yield value by improving decision making, forecast and action steps.
- c) Development of **insightful institutional skills** for data management, information and knowledge in government agencies.
- d) **Public leadership and staff resourcing** within new online environments based on increasing digitalization and governance by means of data, algorithms and disruptive technologies.
- e) Availability of **skilled civil servants**, fit for management of cutting-edge technology projects in all the domains of civil service.
- f) **Proper training in smart devices** (e.g., robots, drones, etc.) for their eventual interaction with humans in civil service.
- g) **Preparation of the digital-citizen relationship** through new channels, augmented reality or neuro-technologies, as well as the automation of multiple activities formerly carried out by civil servants.

h) **Human identity management** in more and more digitalized and hybrid environments (transhumanism), with security levels able to ensure human rights and the protection of personal data.

i) Attention to the **new ethical challenges with a social impact**, from the use of these technologies in the public sector, including the need for a monitoring, audit and assessment model in relation to algorithms.

Further on, **civil service** in each nation must get involved resolutely to become a benchmark in the overall implementation and use of AI systems. Strategies must go in tandem with leadership in looking for the **necessary funding** ahead of the implementation of projects and initiatives, together with the **necessary organizational and human structures**. In addition, a regulatory scheme must be outlined, adaptable to the new realities taking shape in future AI systems.

Country strategies must go hand in hand with **AI regulation from and in civil service**, including codes of conduct/safety and roadmaps with an ethical impact, based on the principles laid down in this Charter. Rights and duties must be defined for the entire society, and as a guide for civil servants to be aware of their obligations and ready to act for the common good. To that end, the whole regulatory framework must serve the common values of individual societies, laying the foundations for a human-centred approach and for further economic development.

At least **domestic laws** must include specific tools for safe, transparent, traceable, non-discriminatory and environmentally-friendly algorithm systems. Likewise, the rules on personal data protection and the use and reuse of general public data must be restated accordingly. In addition, AI systems must be monitored by humans, instead of being fully stand-alone, to minimize potential damages and remove any extremely risky situations. Concomitantly, cybersecurity sound mechanisms must be established to safeguard data and shield technology infrastructures. Finally, assurances must be given for transparent algorithms in civil service, in furtherance of technology infrastructures based on open architectures.

## 4.2. AI in policy making and public utilities

AI implementation and use in civil service entails the **transformation of both policy making and the public services provided to citizens**. This Charter acknowledges that AI systems are

powerful tools, capable of changing the relationship with third parties (e.g., businesses, civil society and citizens) concerning renewed policy making and provision of open, co-produced, high-quality and human-centred public utilities. In this regard, governments and government agencies need to recognize the expected goals and objectives in their initiatives, including efficiency, cost-saving, effectiveness, good quality service, innovation, transparency, citizen's participation in decision making and coproduction, and the highest levels of legitimacy, trust and fairness. In any case, the presence of AI in policy making and public utilities is intended to yield the highest possible public value for the society.

This Charter attests to the **new attributes** represented by AI systems in policy making and public utilities, based on global evidence. Some attributes of algorithm systems consolidate their transformational capacity linked to availability and treatment of massive data, including collection, communication, processing and performance. Consequently, AI in the public sector will be helpful to redefine the management of policies and public utilities, at least in the following ways:

- a) **Automating administrative processes and decision making.** This will lead to machine-machine coordination, reducing the transaction and human-related costs in management and delivery of public utilities.
- b) **Expanding forecast capabilities.** In view of the foregoing, it is assumed that algorithm-based technologies allow for policy making and public utilities on demand, with an emphasis on their personalization, particulars and segmentation.
- c) **Changing the opportunities for planning and assessment of government actions.** The use of analytics and appraisals in real time and the instant feedback from users make a difference in the speed and opportunities for organization and assessment, with a potential impact on quality improvement.
- d) **Building new governance structures.** AI systems are recommended in policy making and public utilities to create evenly distributed, secure and transparent government networks for all parties and restrict the presence of much less warranted and rather opaque hierarchical structures.
- e) **Rearranging value creation and value capture processes.** The new algorithm systems directly affect the ability of public utilities to create and obtain value through the provided services, in addition to their way of coordinating and monitoring their tasks and

activities. Therefore, the rationale on who, how and what for could change substantially with regard to value creation.

f) **Innovating in public utilities models.** The possibilities offered by algorithm systems point to making disruptive changes in the conventional way of segmented understanding of the action areas in the public sector. Besides automation and prediction attributes, these technologies break down thematic and/or department segments for a more comprehensive view of public actions.

g) **Changing the cycle of public policy.** The traditional, linear or circular, cycle of public policy, from troubleshooting to design and implementation, up to assessment, changes from the algorithmic perspective. Particularly, the stages overlap, get shorter and cross each other in a spiral and discontinuous, instead of linear and continuous, way, making more room for management based on innovative and agile methodologies.

Upon review of such growth opportunities in policy making and public utilities, this Charter recognizes that individual countries must **prioritize the public action areas** to be enhanced within their own territories. Such areas include, but are not limited to, education, health, migration, emergency, procurement, transparency, safety, security and good governance. This should be based on the opportunities and expected benefits, as well as the ability to comply with the principles first above listed. Note, further, the different maturity stages of these areas from the technology, scientific, economic, legal, regulatory and infrastructure perspectives, as well as social, cultural and political acceptance, among other matters subject to consideration. Hence, countries are kindly invited to work on their individual priorities to identify the stockholders, favour citizen's participation in the largest possible number of actions and improve accountability to the society.

### 4.3. AI in civil service for people

**AI-human interaction**, in and out of civil service, is required to make social, economic or any other kind of collective or individual changes. In addition to highlighting the key role of citizens in every action of civil service concerning AI —preventing biases and discrimination— this Charter poses the need to seize every opportunity offered by AI and minimize potential risks from a technologically non-determinist view, yet for the common good.

Government agencies are spearheading **new means of access and contact with citizens** through AI systems, including chatbots and virtual aides. The overwhelming use of such devices or robots shows the intention to interact simply and directly with persons. This

holds true for the utilization of voice-recognition and automatic learning, helpful in civil service to automatize most of the contact work and unburden the staff in high engagement hours. The purpose is to give direct assistance with whatever administrative step online, avoiding limitations in the use of such automated systems, particularly, for digitally illiterate groups. Concomitantly, the use of robots for highly sensitive tasks must be conveniently planned. Reference is made to personal care, public security, defence or alike services that could evolve in the future.

Governments and civil service must ensure **the representation of stockholders** and users, as well as their engagement across the life cycle of **AI systems in civil service**, from design to assessment of algorithms. To that end, the necessary tools and methods (i.e., surveys, focus groups, agile methods, design thinking, etc.) must be enabled for citizens' involvement in policy making and production of public utilities, in accordance with the Ibero American Charter. Likewise, **active listening and citizen's cooperation with AI systems** in the public sector have been explored by digital means, namely social networks, public challenge platforms, spaced repetition, participatory telematics forums and collaborative standards, among others. In all these cases a diverse community as appropriate is required for the adequate representation and desired impact of AI in terms of inclusiveness.

This Charter acknowledges that citizen's trust in the performance of government agencies is among the key domains in the future of **AI systems in civil service in a democratic environment**. Hence, the use of algorithms in the public sector must always instil trust in citizens. To that end, algorithm-based decisions in civil service (e.g., eligibility for government aid, medical diagnoses, availability of court judgments, delimitation of police patrolling areas, or the study of tax fraud patterns for businesses) must be spelled out in plain and comprehensible words. Thus, civil service must vouch for transparency, accountability, removal of biases and secure AI systems in all cases. Therewith, this Charter is committed to enforce the human-centred principle in every algorithm-civil service relationship.

## Chapter 5. AI governance in civil service and final recommendations for the enforcement of this Charter

This Charter is intended to become a tool for the governments of the countries in the Ibero American region to, in addition to some other issues already mentioned, take action and set strategies related to AI in civil service. To that end, a series of steps are hereby brought forward, applicable to the so-called **governance framework of AI systems in civil service**.

This framework comprises some of the principal domains to be borne in mind by the governments in the Ibero American region when implementing algorithm systems in civil service.

## 5.1. AI data management

Civil service must ramp up a data management model as the hub of algorithm system development. The quality of used data is of the essence to avoid misrepresentation, security gaps, errors and biases that may be transferred to AI systems through algorithm training or at any moment in their life cycle. Therefore, civil service must establish units responsible for data management and quality (e.g., Data Leading Office, Data Chief Office) to ensure good performance both in the public sector as a whole and in the interaction with other sectors. Among others, these units could be entrusted with the task of setting up guides and offering tools for data traceability, recording and conservation, as well as accuracy, integrity, veracity, update, relevance, usability and types of human intervention in data bases. Furthermore, these units could set in motion validation mechanisms of data used in algorithm training, as well as certificates and stamps of quality as warranty before third parties.

## 5.2. Enabling technology and cybersecurity infrastructures

The use of AI in civil service requires technical robustness and **open technology infrastructures** not only to materialize available opportunities, but also to anticipate risks and shield government agencies to the largest extent possible. Whereas algorithms in civil service must be transparent and open, taking into account the principle of damage prevention, this Charter urges civil service of the countries in the Ibero American region to build AI infrastructures based on open architectures. In this way, the senior staff will be able to oversee the development of such AI infrastructures, as well as neutrality with respect to present and future providers. Moreover, algorithm systems must contain from the outset the relevant principles and standards to consolidate a design free from errors and damages and sufficiently robust to resist any attack.

Particularly, timely action in connection with **cybersecurity** must be taken to prevent errors in **algorithm systems**, and also to avoid any vulnerability resulting from the utilization by non-authorized parties of data, algorithm models, and related software and hardware. Special attention must be paid to neuro-technologies and devices that may cause cognitive impairment, where the possibility of personal injury is greater. Hence, there is the need to outline processes aimed at clarifying and classifying the potential threats in multiple

scopes over the implementation of AI systems, and to adopt the relevant cybersecurity measures. This must be a core component in the future development of civil service in the region.

### 5.3. Algorithm risk allocation

This Charter espouses the implementation, within the domestic legal framework, of AI risk classification mechanisms. Based on the definition of different levels of potential risks for persons, some aspects for the classification of such risks must be pondered, namely decision reversibility level; alternative mechanisms available for the adoption of any recommendation, decision or action; their cost or estimation, and their complexity, efficiency, and technical, administrative or social effectiveness. By way of illustration, at least three risk levels involving algorithm systems must be considered:

a) **Low risk level** (acceptable). Low risk covers elementary requirements of accessibility, transparency and elaboration of algorithm systems. Persons are aware of their interaction and capable of making an informed decision as to continuing interacting or not, based on their own individual criteria. This category includes content platform recommendation systems or systems which create audios or videos that may result in false contents. Therefore, users must be warned about it.

b) **High risk level** (acceptable/non acceptable). High risk refers to AI systems with a potentially direct and adverse effect on fundamental rights, or personal safety or privacy. This category covers biometric identification and categorization of persons; management and utilization of critical infrastructure; health and health care; education and capacity building; labour and employment organisation; public utilities; essential private services and public-private cooperation; migration and border control, and justice administration, among others. In addition to their classification and recording as such, high risk systems must be assessed before their implementation and across their life cycle, particularly if their development is tied to self-learning and hinders human oversight.

c) **Extreme risk level** (non acceptable). Extreme risk encompasses physical biometric or real-time performance and highly invasive biometric systems. This category includes face recognition systems; systems aimed at behaviour and cognitive manipulation of specific individuals or vulnerable groups (children or the elderly), and social ranking systems based on certain personality traits, individual behaviours, socio-demographic features or economic status. This Charter advises the establishment under domestic laws of human rights warranties.

#### 5.4. Public records, audit and algorithm assessment

This Charter poses the need to create a **domestic public registry of algorithms in the public sector** and to establish a **domestic oversight, audit and algorithm assessment authority**. Therewith, users in the private and public sectors will be cognizant of the reasons for the decisions made by algorithm systems. Moreover, the public branches of government will vouch for quality (e.g., stamps or certificates), oversight and performance of algorithms, and also take care of future developments and innovations. In addition, the assessment of the impact of algorithms on ethics and otherwise will be considered, including the effects on social, economic, environmental and gender issues. National and international cooperation among these regulatory authorities will be bolstered for better coordination and exchange of knowledge and good practices resulting from their actions.

#### 5.5. Algorithm testing, trials and sandboxes

**AI systems** require **testing and trials** before commissioning. This Charter recommends, within the framework of country governance, testing and validation of algorithm systems from the outset, if possible, to ensure the expected performance across their life cycle. Testing and trials must cover the largest amount possible of AI components, with special emphasis on data sources, underlying models, environments and overall performance, including the most representative possible individual profiles. A sandbox, or isolated testing environment, means testing controlled by the supervising authorities. This allows for probing innovations and learning how to deal with concerns of public interest. All of this takes place in an isolated testing environment with relaxed applicable standards or conventional administrative procedures. This helps to foresee risks, biases or errors, and safely contrast key principles in the performance of the systems expected to operate in civil service.

#### 5.6. Interoperability and algorithm systems in the public sector

This Charter accepts that AI is a collective effort nurtured by collaboration and cooperation among multiple government and administrative levels, and among states, which may be led by **digital government interoperability**. It is assumed that algorithm systems will take benefit from the promotion of interoperability. Pursuant to the Ibero American Charter on E-Government and Bases for an Ibero American Interoperability Strategy, digital government interoperability means the ability of distinct and diverse organizations and systems to interact with agreed and common goals for a win-win situation. Inasmuch as e-

government interoperability contains technical, semantic and organizational elements, all these aspects ought to be considered in algorithm systems. Moreover, this Charter stresses the need to pay attention to the semantic domain through the top official languages (Spanish and Portuguese) and all other languages spoken in the region. They must become a privileged asset to take care of, consolidate and spread over the world in an effort to avoid present and future language unbalances in AI global development.

## 5.7. Public organizational structures for AI

In addition to any other case elsewhere mentioned herein, this Chapter avows that this governance context requires domestic organizations responsible for bolstering AI strategies and actions in Member States. In some cases, this task could be entrusted to national or federal government agencies responsible for e-government or public sector digitalization within a specific ministry (e.g., Chief of Staff, Technology, Economy, or Economic Development). Such agencies ought to rely on the non-technology view of leading units which deal with streamlining of the public sector, as a strategic and indispensable partner in defining and spurring AI from and in civil service. Add to this the necessary cooperation of federal and national government agencies with local agencies, mostly in decentralized political-administrative schemes. The particulars of individual territories must be taken into account for inter-government cooperation, to move as much as possible the AI benefits and opportunities closer to the local territory.

## 5.8. Senior staff and managerial skills for AI

AI in civil service requires **senior staff with hybrid managerial skills**. Such skills need to be more and more focused on the human-machine coexistence and aimed at leading the conversion of the public sector into an increasingly digital environment, with value creation from the intensive management of data, information and knowledge. Within the innovation ecosystem under the Ibero American Charter on Public Innovation, AI is materialized in smart governance models, or algorithmic bureaucracy, led by senior staff centred on anticipating citizens' needs. This is possible thanks to new perceptive skills tied to algorithm systems, contextual sensors and robotic devices that get rid of repetitive and negligible decisions to focus on niches with the ability to create higher value in the public sector. All this requires new knowhow and skills on algorithm design, AI systems and their potential use in multiple policy areas and public utilities.

## 5.9. 4.0 civil servants in the new algorithmic environment

This Charter takes into account the role of **civil servants** to implement and launch AI in civil service, as well as the impact of AI on staffing in the **public sector**. Most civil servants will keep on carrying out their tasks together with AI and learning new skills. Such new digital skills must be offset with sound humanist, social and ethical knowledge. Besides, employment in the public sector will gradually move forward to sectors centred on data and information management involving multidisciplinary teams. Therefore, civil servants need to be prepared for a transition. In addition to new job opportunities and professional profiles, there will be a gradual reduction of certain low-value tasks formerly completed by humans. At any rate, such processes must be agreed and receive the highest possible support. In this way, capacity building will be in the centre of the implementation and use of AI in civil service.

## 5.10. Cross-cutting skills

Together with all the issues stated above, this Charter acknowledges the existence of **cross-cutting skills** able to satisfy future needs within AI governance in civil service. Investment is required to advance projects and build the necessary infrastructure. The joint action of government agencies, even from foreign countries, and multilateral organizations could relieve the financial stress resulting from rather extensive projects. For their part, public-private partnerships could be a means to share risks, knowledge and technology with the industry, always retaining the strategic capabilities in the public domain. Thus, partnerships with local businesses (promotion of govtech businesses) and the country research and development (quantum computing centres, among other universities and colleges) could ease the integration of the country production capabilities. Finally, this Charter acknowledges that citizen's participation is of the essence for the incorporation into civil service of algorithm systems across their life cycle, accordingly and under its principles.

## 5.11. Final remarks. Political will and change management towards AI from and in civil service

A series of issues have been defined throughout the entire length of this Charter, determined to undertake in civil service the changes propelled by the Fourth Industrial Revolution. Considering the expected extent of AI and future developments, Ibero American nations must demonstrate the necessary political will to take this matter as a hub with potential branching in the entire society and in all economic sectors. Civil service



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URUGUAY	BRASIL	CUBA	EL SALVADOR	PARAGUAY
PORTUGAL	ANDORRA	ANGOLA	GUINEA ECUATORIAL (O)	

is not only subject to said changes, but also a facilitator of change. For all these reasons, questions such as the required political, cultural and ethical changes or the adoption by citizens of the new disruptive technologies are the centrepiece of change management, necessary to be devised jointly over the years to come.