OBSERVATÓRIO DOS ECOSSISTEMAS E INFRAESTRUTURAS DIGITAIS

2E/2025

THE 25 MEASURES FOR AN INNOVATIVE AI AND A FUTURE-PROOF PUBLIC ADMINISTRATION

CONTRIBUTIONS OF OBSERVATÓRIO DOS ECOSSISTEMAS E INFRAESTRUTURAS DIGITAIS (OEID) PARA A CONSULTA PÚBLICA DO GUIA DA AMA

COORDINATION: RUI RIBEIRO

MAY 2025 - PORTUGAL

Rui Ribeiro

Member of Advisory Council of the Observatory of Digital Ecosystems and Infrastructures

Lisbon, May 26st of 2025

1 - INTRODUCTION

In response to the challenge posed by the recently published ***National Digital Strategy (NDS)***, specifically within the context of the ***National Digital Agenda (State Dimension)***, the ***Observatory of Digital Ecosystems and Infrastructures (OEID)***, fulfilling its mission of analysing and promoting sustainable digital policies, presents in this report ***25 Strategic Measures*** aimed at contributing to the construction of an effective, efficient, innovative, ethical, and citizen- and business-centric public AI model.

In this context, OEID considers ***Artificial Intelligence (AI)*** a strategic technology that presents a wide range of opportunities, particularly in increasing efficiency, optimising processes, reinforcing transparency, and improving the quality of decision-making in public bodies. However, to mitigate risks, the adoption of AI must be appropriately framed by a regulatory framework that, while encouraging innovation, bases its application on ethics, thereby ensuring that its use respects the principles of fairness, security, and data protection.

In this context, the **Agency for Administrative Modernisation (AMA)** has made available for public consultation the **GuIA – Guide for the Use of Artificial Intelligence in Public Administration**, which is an essential document that defines guidelines, best practices, and governance mechanisms for implementing AI in the public sector. These recommendations cover areas such as algorithmic transparency, interoperability, security, personalisation of public services, and human resource training, aligning with international best practices and the specific challenges of the Portuguese reality, including the ***European AI Regulation***.

We believe that defining a clear strategy for ***AI in Public Administration***, accompanied by a clear code of conduct and responsible use policies, will be crucial to strengthening citizen trust, driving innovation, and ensuring that technology is used as a factor of inclusion and social progress. OEID reaffirms its commitment to building

a sustainable digital ecosystem and offers its active collaboration in the development and implementation of the measures proposed here.

2 - THE 25 MEASURES FOR AN INNOVATIVE AI AND A FUTURE-PROOF PUBLIC ADMINISTRATION

The 25 measures presented here were designed to structure an AI ecosystem in Public Administration that is innovative, secure, and citizen-centric, to promote process automation, service personalisation, and optimisation of public management.

These proposals cover various strategic dimensions, including governance and regulation, data quality and security, algorithm explainability, performance monitoring, sustainability, and social impact. Furthermore, the measures highlight the importance of human resource capacity building and creating mechanisms to ensure a fair and equitable implementation of AI. By adopting these recommendations, Public Administration can not only improve its internal efficiency but also strengthen the trust of citizens and businesses in State digital services, ensuring that technology is used transparently, inclusively, and for the common good.

Measure 1st. National Strategy for AI in Public Administration

The implementation of Artificial Intelligence (AI) in Public Administration must align with the National Digital Strategy, ensuring coherence between initiatives, interoperability, and sustainability of projects. In this context, AMA's GulA must provide pragmatic and ambitious guidelines for creating a strategic roadmap, considering the digital maturity of organisations and the transversal impacts on public services.

Furthermore, the strategy must ensure alignment with the ethical and regulatory principles of the European Union while being more ambitious and even disruptive to guarantee transparency, security, and inclusion. The definition of success metrics and continuous evaluation of AI initiatives should be encouraged, promoting a cycle of constant improvement in services provided to citizens.

Measure 2nd. Interoperability and System Integration

Administrative modernisation depends on a holistic approach to interoperability between systems and databases. AI can be a catalyst for improving communication between different public bodies, reducing redundancies, and optimising

administrative processes. GulA should reinforce the need for a normative framework that favours the secure and efficient integration of state technological infrastructures.

The creation of a solid data governance structure, materialised, among other things, in a common data platform and standardised APIs, will enable more efficient AI adoption, promoting a cohesive and agile digital ecosystem. It should also be ensured that interoperability respects data protection principles, guaranteeing that information sharing between public entities is done securely and in compliance with current legislation.

Measure 3rd. Ethics and Transparency in AI Use

The application of AI in Public Administration must follow clear ethical principles in alignment with the EU AI Regulation, avoiding algorithmic discrimination and ensuring the transparency of automated decisions. AMA's GulA should highlight the need for frequent audits and algorithmic impact assessments to ensure that AI systems respect citizens' fundamental rights.

Additionally, creating a transparency portal for AI in Public Administration should allow citizens and businesses to understand how algorithms make decisions. This mechanism would strengthen public trust and facilitate the identification of potential biases, allowing real-time corrections to ensure fair and equitable use of AI.

Measure 4th. Human Resources Training and Capacity Building

The adoption of AI in Public Administration requires a significant effort to train its human resources. Without adequate preparation, there is a risk of organisational resistance, underutilisation of AI tools, or operational failures. GulA should provide continuous training programs for public servants, focusing on digital skills and AI literacy, which should also be part of the National AI Agenda's Action Plan.

In addition to technical training, it is essential to develop awareness programs on AI ethics and its impacts, as this will enable employees to act as agents of transformation, ensuring AI is used responsibly and effectively. Partnerships with universities and specialised institutions, through programs like Líder+ Digital, can be a viable solution for offering this training in a structured manner.

Measure 5th. Continuous Data Quality Assessment

Data quality is a critical factor for the success of AI in Public Administration. Outdated, inconsistent, or biased data can compromise the effectiveness of AI models, leading to incorrect decisions. GulA should establish rigorous guidelines for data governance,

ensuring that public bodies adopt practices for validating, cleaning, and continuously updating their data repositories.

Furthermore, an audit process should be implemented to monitor data quality over time. Automated monitoring and reporting tools can help identify anomalous patterns, contributing to a more reliable and efficient AI ecosystem.

Measure 6th. Security and Protection of Sensitive Data

The use of AI in Public Administration requires a robust commitment to protecting personal and sensitive data. GuIA should establish standards to ensure that all AI systems adhere to the principles of the General Data Protection Regulation (GDPR), including data minimisation, anonymisation, and the right to be forgotten.

The implementation of measures such as advanced encryption, pseudonymisation, and strict access control must be mandatory to avoid risks of leaks or misuse of information. Additionally, regular audits, with the support of CNCS, should be conducted to ensure compliance with information security regulations.

Measure 7th. Creation of an AI Supervision Centre in Public Administration

The creation of a dedicated AI Supervision Centre in the public sector, comprising members from academia and business associations, would enable continuous monitoring of the use of these technologies. This centre could function as a regulatory entity, ensuring that algorithms used by public institutions are auditable, explainable, and ethical, as required by the aforementioned European Regulation.

In addition to technical supervision, this body could issue recommendations on best practices, support employee training, and coordinate interoperability initiatives among different public bodies. Its existence would strengthen citizens' trust in the State's digital services

Measure 8th Development of Explainable and Interpretable AI

Transparency in AI models is crucial to ensure citizens' trust and accountability in automated decision-making. GuIA should encourage the adoption of Explainable AI (XAI) models, allowing both public servants and citizens to understand the functioning and criteria used by algorithms.

Visualisation tools and automated reports should be integrated into systems to facilitate understanding of decisions made by AI models. Whenever possible, models based on transparent and interpretable rules should be used, especially in critical processes such as social benefit allocation or risk analysis.

Measure 9th. AI for Simplification and Automation of Administrative Processes

AI can be a major driver of operational efficiency in Public Administration, eliminating redundancies and automating repetitive tasks. GulA should encourage the adoption of AI to optimise administrative processes, reduce response times, and improve the citizen experience by creating an application library whose functionalities can be reused by various areas of Public Administration.

Examples of applications include automating document processing, intelligent request triage, and utilising intelligent chatbots to answer frequently asked questions. This transformation will allow employees to focus on higher-value tasks, improving the overall efficiency of public services.

Measure 10th. Promotion of AI in the Provision of Personalised Services

The personalisation of public services through AI can significantly improve the experience of citizens and businesses. GulA should stimulate the use of predictive algorithms and behavioural analysis to anticipate needs and offer services more tailored to each individual.

For example, recommendation systems can alert citizens about available benefits or administrative procedures that need to be performed. The responsible use of this technology can enhance the relationship between the State and its citizens, making it more proactive and efficient.

Measure 11th. Definition of Criteria for Acceptable AI Use

Not all AI applications are appropriate for the public sector. GulA should establish clear criteria for determining when AI use is acceptable and when it may pose risks to citizens' fundamental rights.

Applications that could compromise privacy, increase inequalities, or generate unjustified negative impacts should be avoided. Transparency in these criteria will allow for more informed public debate on the ethical and operational limits of AI in the public sector.

Measure 12rd. Pilot Testing and Impact Assessment Before National Scale

Before implementing large-scale AI solutions, it is essential to conduct pilot tests to assess impacts and adjust systems as needed. GulA should encourage public bodies to conduct pilot projects in controlled environments, allowing for rigorous evaluation before widespread adoption.

Additionally, impact assessments should be mandatory to ensure that AI systems adhere to principles of fairness, accuracy, and security. Controlled experimentation will allow for safer and more effective adoption of these technologies.

Measure 13th. Implementation of Regulatory Sandboxes for AI

AI innovation in Public Administration requires a controlled environment for safe experimentation. GulA should encourage the creation of regulatory sandboxes, where pilot projects can be tested without compromising the integrity of public services.

These environments enable risk assessment, parameter adjustment, and compliance with standards before large-scale implementation. Furthermore, they facilitate closer dialogue between regulators, technology companies, and public bodies, allowing for policy adaptation to emerging innovations.

Measure 14th. Governance Mechanisms and Algorithmic Accountability

The use of AI in Public Administration requires a clear governance structure that defines responsibilities and establishes supervision mechanisms. GulA mechanisms should be available for citizens who wish to question automated decisions, ensuring greater transparency and fairness. Propose guidelines to ensure that each public entity understands its responsibility in the development and use of AI.

The traceability of algorithmic decisions must be guaranteed through detailed records and regular audits. Additionally, challenge

Measure 15th. Combating Bias and Algorithmic Discrimination

AI systems can amplify existing biases if trained on biased data. GulA should recommend rigorous methodologies to identify and mitigate biases in algorithms used by Public Administration.

The adoption of fairness assessment tools and diversification of databases are essential to ensure that automated decisions are fair and inclusive. Furthermore, continuous monitoring should be in place to correct any deviations over time.

Measure 16th. Encouraging Open Data for Public AI

Sharing public data in a structured and accessible way can boost the development of more effective AI solutions. GulA should promote an active Open Data policy, ensuring that relevant data is made available in an ethical and secure manner.

This will allow universities, startups, established companies, and R&D centres to develop new applications and contribute to the modernisation of Public

Administration. Standardisation in the structure and documentation of this data is essential to maximise its impact.

Measure 17th. Use of AI for Cybersecurity in the Public Sector

Cybersecurity is a growing challenge for Public Administration, and AI can be an ally in identifying and mitigating threats. GulA should encourage the use of AI models for anomaly detection, incident response, and strengthening digital protection.

The application of machine learning to predict and neutralise attacks can significantly reduce the risks of data breaches and critical infrastructure compromise. Furthermore, the development of AI-based cybersecurity defence frameworks should be a strategic priority, particularly for Portuguese companies.

Measure 18th. Monitoring Performance Indicators in Public AI

The effectiveness of AI systems should be continuously monitored through well-defined performance indicators. GulA should propose objective metrics to evaluate the accuracy, efficiency, and impact of AI applications in Public Administration.

Additionally, periodic public reports should be encouraged to increase transparency and allow for strategic adjustments. The creation of interactive dashboards can facilitate real-time monitoring of key performance metrics.

Measure 19th. Encouraging International Collaboration in Public AI

The development of AI in Public Administration can benefit from the exchange of experiences and best practices with other countries. GulA should encourage international partnerships to promote the adoption of global standards and avoid redundancies in research and implementations.

Collaboration with European Union bodies and the OECD can accelerate the adoption of effective regulations and strengthen the country's digital competitiveness, in addition to direct cooperation to support the development of the CPLP. Furthermore, active participation in international forums on AI and digital governance should be considered.

Measure 20th. Development of Intelligent Virtual Assistants and Personalised AI Agents

AI Agents The use of AI-based virtual assistants can revolutionise the interaction between citizens and businesses with public services. GulA should encourage the creation of chatbots and voice assistants to streamline administrative processes, answer questions, and offer automated support in real-time. These platforms can

improve accessibility, reduce waiting times, and alleviate the workload of public servants.

Furthermore, the concept of Personalised AI Agents should be explored, which would function as digital assistants dedicated to each citizen or company. These agents could consolidate information about previous interactions with the Public Administration, remind users of tax obligation deadlines, suggest relevant services, and even anticipate user needs based on their history. These assistants would ensure a more integrated and efficient experience, always respecting the principles of transparency, ethics, and data protection.

This concept reinforces a more citizen-centric approach, leveraging AI to offer truly personalised services.

Measure 21st. Use of AI in Fraud Prevention and Risk Management

AI can be a powerful tool in identifying fraud and managing risks in Public Administration. GulA should encourage the implementation of anomaly detection models to prevent irregularities in processes such as subsidy allocation and public procurement.

The automation of auditing and intelligent data cross-referencing can strengthen control mechanisms, making public management more efficient and reliable. Furthermore, it is essential to ensure that these systems are transparent and auditable to avoid errors or injustices.

Measure 22nd. Use of AI in Fraud Prevention and Risk Management

Not all public entities can develop AI solutions internally. GulA should promote the creation of AI-as-a-Service (AIaaS) platforms, enabling public bodies to access trained models and advanced tools without requiring significant initial investments.

This will democratise access to AI within the public sector, ensuring that smaller municipalities and institutions with fewer resources can also benefit from these innovations. Centralising these platforms can also facilitate supervision and compliance with ethical guidelines.

Measure 23rd. Encouraging Green and Sustainable AI in Public Administration

AI has a high energy cost, and its implementation must consider environmental sustainability. GulA should recommend the use of energy-efficient models and encourage the development of solutions that minimise the carbon footprint.

Additionally, Public Administration should prioritise sustainable computing infrastructures, such as eco-friendly data centres and renewable energy sources. Adopting environmentally responsible AI will contribute to the country's sustainability commitments.

Measure 24th. Promoting Digital Literacy and Trust in AI

Public acceptance of AI depends on the level of understanding of how these technologies work. GulA should encourage awareness campaigns and digital literacy training for citizens and businesses, explaining the benefits and limitations of AI.

Transparency in processes and the establishment of dialogue channels between the government and society can foster trust in AI and mitigate unfounded fears. Furthermore, educational programs can help create conditions that better prepare citizens to interact with AI-based public services.

Measure 25th. Stimulating Innovation and the National AI Ecosystem

For Portuguese Public Administration to fully benefit from AI, it is fundamental to strengthen the national innovation ecosystem. GulA should propose measures to encourage startups, research centres, and companies to develop AI solutions for the public sector, for example, through public-private partnership models.

Additionally, the creation of funding programs and addressing technological challenges can accelerate the development of innovative solutions tailored to the State's needs. Furthermore, collaboration between the public and private sectors can generate a more dynamic and competitive environment for AI in Portugal.

CONCLUSION

The adoption of Artificial Intelligence in Public Administration represents a decisive step towards modernising the State and improving services provided to citizens and businesses.

However, this digital transformation must be conducted strategically, ensuring that AI is used in an ethical, secure, and transparent manner. The 25 measures presented in this document propose a set of guidelines that not only ensure efficiency and technological innovation but also reinforce the protection of citizens' rights and equity in access to public services.

The success of AI implementation in the public sector will depend on an integrated approach involving adequate regulation, robust technological infrastructure

development, and continuous human resource capacity building. Collaboration among public entities, the private sector, academia, and civil society will be essential to ensure that technology is applied responsibly and aligned with the real needs of citizens. Furthermore, it is vital for Public Administration to adopt a posture of continuous evaluation, innovation, and improvement of AI systems, ensuring that they continue to address existing challenges and potential emerging ones.

More than an automation tool, AI has the potential to redefine the relationship between the State and society, making public services more proactive, personalised, and accessible. However, for this potential to materialise positively, a firm commitment to principles of transparency, explainability, and continuous supervision of the algorithms used is necessary. Citizen trust must be the central element of any AI strategy in Public Administration, ensuring that the benefits of technology are widely distributed and that risks such as algorithmic discrimination or loss of privacy are mitigated.

The Observatory of Digital Ecosystems and Infrastructures (OEID) reaffirms its readiness to actively contribute to the debate and construction of an efficient, ethical, and sustainable public AI model. We hope that the recommendations presented here can serve as a contribution to the National Artificial Intelligence Agenda foreseen in the National Digital Strategy and for the evolution of AMA's GulA, and thus for the definition of public policies that make Portugal a reference in the responsible and innovative use of Artificial Intelligence in the public sector.

Web Page: https://oeid.pt/

LinkedIn Page: linkedin.com/in/oeidobservatório

Email: geral@oeid.pt