AI State Policy in Belgium

(Focus on Flanders Region Action Plan)

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This research aims to discuss the implementation of Artificial intelligence in Belgium, focusing on action plans and strategies for the central and federal governments. Belgian AI policy is decentralized and coordinated between regions and the country's center, allowing regions to carry out individual but coordinated AI policies.

The research analyzes the process of AI implementation on national and regional levels, underlining the importance of the policy documents of the Wallonia, Flanders, and Brussels regions.

Due to the multidisciplinary topic, the research is holistic, uniting various research methodologies, including expert interviews, document analyses, comparative analyses, and studies of Belgian and European approaches.

The research found that the Belgian model of AI implementation prioritizes ethical standards and societal trust. Still, challenges are reflected in the lack of societal awareness regarding AI technology and communication between the country's regions. Research underlined the need for a joint communicative approach and well-defined Key performance indicators (KPI).

The Belgian example provides a valuable lesson on how different regional structures can elaborate on implementing AI policies, what challenges exist, and what perspectives can be gained.

Keywords: Artificial Intelligence; Belgium; Flanders; Strategy; Action Plan.

Introduction

For the last decade, AI has become the transforming force of digital evolution, leading a chain of reforms in almost every field, from the communication sector to public administration.

The capabilities of AI technology have changed the way political decision-makers make decisions or governments provide state social services. Because of how AI operates, the system has become more citizen-oriented; it makes it possible to generate and process data on each individual and, based on outcomes, elaborate person-oriented services and decisions (Brynjolfsson & McAfee, 2017; Wirtz et al., 2019). There are dozens of AI state policy documents in dozens of countries that reflect the aspirations of various states to include AI technology in political decision-making processes and public administration.

Given the potential of artificial intelligence, its proper integration into the public administration process could significantly transform the delivery of state services. AI applications can simplify the process and make it more tailored to the citizens by automating processes and processing citizens' data. (Mergel, Edelmann, & Haug, 2019).

As a result of processing user data, it becomes possible to personalize the services provided by the state to citizens, which allows governments to more effectively respond to citizens' needs and provide tailored solutions in various areas of the public sector, including healthcare, education, public safety, etc. (Agrawal, Gans, & Goldfarb, 2018).

Integrating artificial intelligence into state governance goes beyond public administration and encompasses both societal and economic dimensions. AI-based public administration can reduce bureaucratic costs, increase productivity, and encourage innovative startups. From a social perspective, AI can make services more accessible and inclusive. Artificial intelligence is a source of innovation that is reshaping services (Huang & Rust, 2018).

Despite AI technology's benefits, ethical and legal challenges must be considered, especially those related to data privacy, algorithmic bias, and public trust.

Developed countries are adopting state strategies and action plans to maximize the potential of artificial intelligence. The goal of the documents is to integrate AI technology into various sectors of public administration.

The strategies developed by states vary in structure and content. However, most aim at similar priorities, including promoting artificial intelligence research, developing public literacy and skills, improving data infrastructure, and establishing ethical guidelines for AI applications (Villani et al., 2018).

Major economies like the United States and China promote collaboration with the private sector and AI-based economic growth. In Europe, the approach to AI strategies is often characterized by a balance between technological progress and ethical considerations. In the process of AI implementation,

European states prioritize user data protection, accountability, and public welfare (OECD, 2019). Belgium is not an exception; the state is an example of how the country's complicated political structure is reflected in the implementation of AI state policy(Dumon et al., 2021). Belgian AI state policy is determined by the difference between the competencies of regions and the center, where each actor is responsible for different tasks and activities.

This research aims to analyze the complexities of Belgian AI state policy and define problems and perspectives. Its goal is to define the key differences between central and regional AI policies and their approaches in the policy implementation process.

To achieve the goals defined in the framework of the given article, the following research questions were identified:

- How is AI state policy implemented at central and regional levels?
- What are the priorities of Belgian AI policy, and how are they reflected at the central and regional levels?
- What are the main challenges in the AI implementation process?
- How do regional AI strategies and action plans support the implementation of National strategy?

In order to get answers to the mentioned research questions, a holistic research design was used during the study. Each of the research approaches had a unique benefit for the final outcome of the study. For example – Interviews with experts made it possible to define the main challenges and perspectives of the AI state policy implementation process. Interviews were conducted with 10 experts representing Belgian AI stakeholders from public, private, and academic fields. Semi-structured questionnaires allowed for additional questions and the retrieval of more valuable information from the respondents.

Another method used in the research process was document analysis. Analyzing all the primary and secondary sources regarding Belgium's AI strategy made it possible to define and categorize state policy documents, including AI strategies, midterm reports, policy documents, and EU guidelines. The chosen method made it possible to identify the priorities of central and regional AI state policies and their similarities and differences.

Comparative analysis was one of the methods used in the research process. Comparing Belgium's documents with those of other European states, like Estonia, the UK, or EU AI guidelines, made it possible to identify key differences between Belgian and European approaches to AI implementation. Using comparative analyses, the differences between Belgian and international AI strategy frameworks and the priorities of these documents were analyzed.

In the end, combining the mentioned methodologies made it possible to identify aspects of Belgium's AI policy, define strengths and weaknesses, and identify room for improvement in AI implementation in the public administration process.

The Belgian AI ecosystem

Belgium's national AI strategy, committed to ethical standards, transparency, and the promotion of regional partners, aligns with the European approach (European Commission, 2021).

Belgium, unlike other countries, has a unique federal governance structure that allows regions to develop independent AI policies. The Flanders region's AI Action Plan, which addresses regional challenges, is an example of this approach.

Belgian AI policy seeks to address the challenges associated with artificial intelligence by prioritizing the development of ethical AI, supporting education and AI literacy, and strengthening public trust in AI applications. Through its AI initiatives, Belgium aims to be an example for other countries in balancing technological innovation with social and ethical considerations. The country's policy sees AI as a driver of economic growth and a tool to make public services more inclusive and citizen-centric.

National convergence plan for the development of artificial intelligence

Becoming an AI Smart Nation [1]

In 2022, Belgium adopted a National convergence plan that included nine main directions:

- Promoting trustworthy AI
- Guaranteeing cyber security
- Boosting Belgium's competitiveness and attractiveness through AI
- Developing a data-driven economy and a high-performance infrastructure
- AI at the heart of healthcare
- Driving more sustainable mobility
- Protecting the environment
- Better lifelong training
- Providing citizens with better services and protection;

It is noteworthy that each of these directions included a list of activities. For example, under „Promoting trustworthy AI, " there were nine sub-activities defined:

- actively contribute to the development of norms, standards, and recommendations at international fora
- strengthen the ecosystem by connecting universities, businesses, the public sector, and citizens

[1] Federal Public Service Policy and Support. (n.d.). National convergence plan for the development of artificial intelligence. Retrieved from https://bosa.belgium.be/sites/default/files/content/images/DigitaleOverheid/AI/Plan_AI_EN.pdf

- complete the national regulatory framework, including the ethical framework for AI applications, while ensuring a balance between protecting against the risks of AI and encouraging useful innovation
  <...>
- identify algorithmic biases and mitigate forms of discrimination using specialized digital tools.

The nine directions defined in the national convergence plan included 70 specific activities.

Regional AI Initiatives

Flanders AI Action Plan (2019)[2]

The Flanders region AI Action Plan, initiated in 2019, is one of Belgium's first regional AI initiatives. This action plan focuses on strengthening Flanders' AI ecosystem by focusing on three key pillars:

Research track, Industry track, and societal track:

- **Research track**: Demand-driven research and development of generic AI methodologies for applications in healthcare, industry, and government—annual budget 12 M.
- **Industry track**: To raise awareness, inform, and advise companies about the possibilities of AI; to guide and support companies in their AI applications; to support companies developing AI technology - annual budget 15 M.
- **Society track**: Guidelines and advice on the legal, ethical, and social aspects of AI and data applications; increasing, extending, and improving professional knowledge on AI Public outreach—annual budget 5 M.

The Flanders AI Action Plan is backed by an annual budget of approximately €32-35 million, funding various initiatives such as innovation hubs, research grants, and industry partnerships. Notable projects include AI4Growth, which supports SMEs in adopting AI, and initiatives focused on healthcare and smart mobility applications.

Wallonia AI policy[3]

The Wallonia region's AI policy is part of the Digital Wallonia strategy, which, in coordination with the federal level, aims to be one of the pioneering initiatives in the field through the digitalwallonia4.ai programme.

With an annual budget of 875,000 euros from 2019, Wallonia AI policy has 4 structuring axes to develop AI in Wallonia:

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[2] Flanders AI. (n.d.). *AI research and innovation in Flanders*. Retrieved from https://www.flandersai.be/en/ai-research-and-innovation-flanders

[3] Digital Wallonia. (n.d.). *DigitalWallonia4.ai: Artificial intelligence at the service of citizens and companies in Wallonia*. Retrieved from https://www.digitalwallonia.be/en/posts/digitalwallonia4-ai-artificial-intelligence-at-the-service-of-citizens-and-companies-in-wallonia/

- „**Society and AI**—This priority involves implementing information and awareness-raising actions. The objective is to increase the general level of information of the Walloon population and to make companies aware of the challenges and opportunities of AI.
- **Businesses and AI** - The objective is to support and accelerate companies' digital transformation processes. They must integrate AI technologies that create added value into their business approaches and lead to the creation of "enhanced" products and services. <…>
- **Training and AI** - This third area focuses on the availability of training to increase the average level of AI technical skills for both the active and inactive strata of the population. <...>
- **Partnerships and AI**—DigitalWallonia4.ai aims to network national and international actors specialized in AI to accelerate the development and consolidation of our progress in AI.

Brussels capital AI policy[4]

Although Brussels does not have a formal AI strategy or action plan, the region is implementing various projects. Various programs promote research, startups, public-private partnerships, and awareness-raising. Key initiatives include the Brussels AI project, which focuses on developing public administration and citizen skills.

Findings of the study

To explore the specifics of Belgian AI policy within the framework of this paper, ten expert interviews were conducted with stakeholders from various sectors involved in the development and/or implementation of AI policy documents. The main findings are discussed below:

- *Belgium's AI political ecosystem*

The Belgian political system is divided into federal and regional levels. The center and the periphery share various competencies and responsibilities. Decentralization of political processes brings both advantages and challenges. Regarding implementing artificial intelligence, the region's competencies are research, innovation, economic development, education, etc. The central government oversees issues like AI technology in defense and intellectual property protection.

This separation of powers and responsibilities sometimes complicates the process and leads to duplication of initiatives. In Belgium, the Flemish and Walloon regions have developed action plans for the development of artificial intelligence since 2019. Given that the regional government has the prerogative of administering the budget for innovative technologies, financing the Flemish and Walloon AI action plans is no problem.

[4] FARI. (n.d.). *Brussels: Emerging as Europe's AI innovation hub*. Retrieved from https://www.fari.brussels/news-and-media-article/brussels-emerging-as-europes-ai-innovation-hub

Although the federal government has less funding for the development of artificial intelligence, the AI National Convergence Plan was developed in 2022. However, this fact has not affected the AI policies of the regions.

- *Digital Belgium and E-Governance*

Belgium was one of the first European countries to implement digital governance in the 1990s. It was the first to introduce electronic ID cards, but underdeveloped infrastructure prevented the process from being implemented effectively.

The country has recently progressed with services such as Tax-on-Web, which allows for digital tax payments and data sharing between banks and government agencies. The Covid pandemic has further accelerated the adoption of digital technologies and highlighted the importance of digital literacy.

Although artificial intelligence is of great public interest, many citizens do not know how AI operates. They do not realize that they are directly or indirectly in contact with artificial intelligence daily through applications such as GPS navigation and various social networks. This low level of awareness indicates that it is necessary to increase the level of digital education in order to create a better informed and technologically literate society. Belgium's experience implementing a digital government demonstrates the challenges associated with integrating digital services into a decentralized system and how important it is to increase digital literacy to gain public trust.

- Data Administration and Privacy

Data protection is a cornerstone of Belgian e-government. To this end, decentralized verification systems are increasingly implemented to ensure secure user identification. A good example is the European Blockchain Services Infrastructure (EBSI), which uses blockchain technology to manage user identities in a decentralized manner. This allows users to have more control over their data. This approach fully complies with the General Data Protection Regulation (GDPR) and successfully addresses centralized systems' privacy concerns and security risks.

Blockchain-based solutions are changing the concept of digital identity across Europe. Belgium also actively uses decentralized verification systems for digital wallets and ID cards.

However, in this case, the different approaches to data governance among digital service providers raise questions about fair access to services and data control. Despite these challenges, decentralized models are becoming increasingly popular.

- Challenges of AI Strategy

An analysis of Flanders region's AI action plan budget reveals an imbalance between the €30 million allocated to research and the €5 million allocated to ethical and educational initiatives. This distribution points to a state's priorities, where technological development significantly outweighs social and ethical aspects. According to experts, such budget distribution creates risks, as issues of digital literacy and ethics remain secondary priorities. They argue that a more balanced approach is necessary to develop society's technological awareness appropriately.

One issue identified by the experts is the so-called “brain drain” from the public to the private sector. Due to high salaries, qualified specialists choose private companies, which reduces the state's ability to effectively guide and control the process of developing artificial intelligence. This trend, in turn, increases the private sector's influence on technological transformation.

- Evaluation of AI Policy and Governance

Assessing the impact of Belgium’s AI strategy on the country’s AI index is difficult because quantitative indicators cannot measure all aspects of AI. Although the state has established public knowledge centers to assess the progress of AI policy, more measurable indicators (KPIs) are needed. The Flemish region has introduced a special tool for this purpose, the “AI Barometer,” which studies how companies implement AI and what results it brings.

Oversight of AI development in Belgium is decentralized. Various oversight and executive groups meet regularly to assess progress. In the Flemish region, two main agencies are working in this direction: the Department of Economy, Science & Innovation and Flanders Innovation & Entrepreneurship (VLAIO).

These organizations cover the full spectrum of artificial intelligence development, from scientific research to cooperation with businesses. In addition, educational programs operate in the region, such as the Flanders Academy of Artificial Intelligence and the Knowledge Center for Data and Society. These organizations mainly work on the legal and ethical aspects of artificial intelligence, ensuring the responsible development of the technology.

- Challenges with Digital Trust and Public Perception

Among other challenges, public skepticism about data privacy hinders the integration of artificial intelligence into public governance. Some citizens are reluctant to share personal data, making it difficult to make informed decisions through data processing and developing appropriate AI applications.

As a result of digital transformation, the standard model of citizen engagement in political processes is changing. An algorithm can make decisions or develop forecasts by processing existing data, which is a great benefit of artificial intelligence. However, this operation can be biased. The so-called “algorithmic discrimination” further fuels public distrust of artificial intelligence technology. If AI technology processes biased data, then its reasoning and conclusions will also be biased, and citizens may blame the algorithm for this, not the biased data itself.

Based on all of the above, it is very important for citizens to have basic knowledge about how artificial intelligence functions.

- Public vs. Private Sector Interests

One indicator of the "confrontation" between the private and public sectors is the so-called "brain drain"—qualified professionals move from the public sector to the private sector due to better salaries, which reduces the public sector's influence on the artificial intelligence implementation process. The priorities of private companies may often not correspond to the public good. Due to better financial

capabilities, private firms are the leading force in developing artificial intelligence, which creates certain conflicts between corporate interests and public values.

- Evaluation and Measurement Challenges

Evaluating the effectiveness of a technology such as artificial intelligence is associated with several problems. First, it is impossible to quantify components such as artificial intelligence's ethical dimensions. Measuring quantifiable data such as the number of publications or patents is relatively easy, but no universally accepted metric would assess the ethical issues related to AI technology.

Despite these difficulties, knowledge centers in Flanders are trying to measure AI's annual progress and develop more sophisticated effectiveness indicators. The effectiveness assessment of AI programs determines the number of annual subsidies for specific projects. AI policy assessments include the impact of AI on increasing the efficiency of both economic and social sectors.

When assessing the effectiveness of an AI strategy, it is essential to analyze both technical and ethical issues. Measurable indicators include components such as patents, publications, number of applications, and their users while measuring the ethical dimension of AI policy is a much more complex process. The results of the AI barometers of the Flemish Knowledge Centers indicate gradual progress, but a comprehensive assessment of the AI ecosystem is still not possible.

Future strategies aim to develop broader, more inclusive performance indicators that integrate AI's economic, societal, and ethical components. Integrating AI into public administration is a sensitive issue. The Netherlands is an example of a flawed AI algorithm that discriminated against citizens, ultimately leading to the government's resignation.

Such results highlight the importance of monitoring AI technology. The algorithm should be based on citizens' interests and incorporate approaches based on human values.

- Communication and Public Engagement

As mentioned, the Flanders AI Action Plan has been implemented since 2019. It is worth noting that, according to experts, the region's policy initially lacked a coherent communication strategy. Developing a unified communication approach was necessary to raise public awareness and engagement.

According to experts' public awareness and engagement in the Flemish region's decentralized communication strategy are often secondary to technical achievements. Attempts to connect public and private sector priorities are associated with additional difficulties- the goals of private companies do not always correspond to public values.

Conclusion

Belgium's complex federal political structure has had mixed effects on AI policy, both positive and negative. One of the main challenges of Belgian AI state policy is coordination between the center and the regions, while a significant difficulty in AI policy is overcoming society's skepticism. In addition, measuring the effectiveness of AI state policy and policy documents is challenging.

Although the regions play a leading role in integrating AI technology into public governance in Belgium, the federal government's role is important in participating in international AI forums and projects.

Overall, as of 2024, Belgium has three AI strategies and action plans: the AI National Convergence Plan adopted in 2022, the Flemish AI action plan developed in 2019, and digitalwallonia4.ai, which is one of the main directions of the Walloon Region's digital transformation document. The Brussels Region does not have an AI action plan but is actively implementing AI programs and trying to promote the development of Brussels as an AI hub.

As a result of expert interviews conducted during the research process, factors hindering the implementation of AI state policy in Belgium were identified, including the low level of public awareness and trust, gaps in data administration that prevent the proper functioning of AI technology, the issue of the so-called "brain drain" from the public to the private sector, the secondary role of the state in creating AI trends, insufficient attention to public awareness regarding AI technology and ethical issues, the underdeveloped instruments to measure the effectiveness of state policy and the absence of appropriate KPIs; the difficulty of measuring the effectiveness of AI applications in general; and the lack of communication and citizen engagement.

Overall, Belgium's decentralized AI policy is effective. The differences between the regions and the center do not prevent the implementation of AI technology policy in the state, and functions are separated. However, the different financial opportunities between the regions put some regions in an advantageous position.

References:

Agrawal, A., Gans, J., & Goldfarb, A. (2018). Prediction Machines: The Simple Economics of Artificial Intelligence. Harvard Business Review Press.

AI Flanders. (2022). Flanders AI Action Plan: Strategy and roadmap. Retrieved from Flanders AI

Brynjolfsson, E., & McAfee, A. (2017). Machine, platform, crowd: Harnessing our digital future. W.W. Norton & Company.

Dumon, S., Van de Putte, J., & Van Hove, J. (2021). Belgium's AI Strategy: Regional dynamics and the road ahead. Journal of Governance and Policy, 15(4), 123-140.

European Commission. (2021). Coordinated Plan on Artificial Intelligence 2021 Review. Retrieved from https://ec.europa.eu

European Commission. (2021). Coordinated Plan on Artificial Intelligence 2021 Review. Retrieved from https://ec.europa.eu

Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. Journal of service research, 21(2), 155-172.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. Government Information Quarterly, 36(4), 101385.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. Government Information Quarterly, 36(4), 101385.

OECD. (2019). Recommendation of the Council on Artificial Intelligence. OECD Legal Instruments. Retrieved from https://www.oecd.org

OECD. (2019). Recommendation of the Council on Artificial Intelligence. OECD Legal Instruments. Retrieved from https://www.oecd.org

Villani, C., et al. (2018). For a Meaningful Artificial Intelligence: Towards a French and European Strategy. Report to the French Prime Minister.

Villani, C., et al. (2018). For a Meaningful Artificial Intelligence: Towards a French and European Strategy. Report to the French Prime Minister.

Wirtz, B. W., Weyerer, J. C., & Geyer, C. (2019). Artificial intelligence and the public sector—applications and challenges. International Journal of Public Administration, 42(7), 596-615.