Vaolevska, L., & Myshchak, I. (2026). Integrating artificial intelligence into parliamentary research services: The Research Service of the Verkhovna Rada of Ukraine as a case study. ESS Conference Series Social Science and Humanities, 1(1). https://doi.org/10.54658/esscssh.2026.1.1.01

Integrating Artificial Intelligence Into Parliamentary Research Services: The Research Service Of The Verkhovna Rada Of Ukraine As A Case Study

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Abstract.

This article examines how artificial intelligence (AI) can be incorporated into parliamentary research services while preserving professional responsibility, information security and democratic accountability. Using the Research Service of the Verkhovna Rada of Ukraine as the principal case, the study combines doctrinal and documentary analysis with a structured comparison of recent parliamentary practices in Germany, Canada, Switzerland, Spain, Indonesia and Bahrain. The comparative framework is derived from the Inter-Parliamentary Union (IPU) Guidelines for AI in Parliaments and the Maturity Framework for AI in Parliaments and focuses on governance, technical capability, organisational capability and democratic impact. The analysis shows that effective parliamentary AI adoption depends less on the acquisition of individual tools than on institutional rules, reliable data, human oversight, staff competence, controlled experimentation and auditable workflows. The Ukrainian case demonstrates an emerging governance model in which external AI systems are treated as auxiliary instruments for processing publicly available information, while professional verification, confidentiality requirements and restrictions on autonomous action remain central. Four vectors of incorporation are identified: internal regulation of AI use; development and dissemination of institutional guidance; comparative research on AI regulation and applications; and AI-literacy training for parliamentarians, advisers and parliamentary staff. The article concludes that sustainable AI adoption in parliamentary research services requires a staged, risk-based and human-centred approach in which technological efficiency remains subordinate to analytical integrity, parliamentary autonomy and public trust.

Keywords: *parliamentary research service; artificial intelligence; parliamentary administration; AI governance; digital parliament; human oversight*

1. Introduction

Over the past two decades, the concept of the e-parliament has expanded from websites, digital document flows and online broadcasting to data-driven and AI-assisted systems. The current phase of transformation is qualitatively different because generative AI and other machine-learning tools can support search, summarisation, classification, translation and

comparative analysis across large volumes of parliamentary information. For legislatures, however, the relevant question is not whether such tools are technically available, but under what institutional conditions they can be used without weakening confidentiality, professional judgement, accountability or trust in parliamentary work (United Nations et al., 2008; Inter-Parliamentary Union, 2024).

Ukraine is developing this agenda under the simultaneous pressures of war, European integration and rapid public-sector digitalisation. The national Strategy for the Digital Development of Innovation Activities up to 2030 prioritises the use of technology in governance, while the draft Artificial Intelligence Development Strategy up to 2030 places responsible and risk-managed AI adoption among the components of state modernisation. Within the Verkhovna Rada of Ukraine, these developments form part of the broader evolution of e-parliamentarism and of the institutional capacity needed to support legislative work.

Parliamentary research services occupy a particularly sensitive position in this transformation. Their outputs may inform legislative choices, comparative-law assessments, committee work and policy debates; consequently, speed gains from AI cannot be evaluated independently of source reliability, legal accuracy, data protection and professional accountability. The Research Service of the Verkhovna Rada of Ukraine therefore provides a useful case for examining AI not merely as an information technology, but as an object of institutional governance within a democratic legislature.

It is worth emphasising that AI incorporation into the Research Service's activities has not been the subject of any specific academic study. At the same time, certain aspects of this topic have been examined by academics. For instance, the authors have highlighted the information technology use in the preparation of the Research Service's proposals for the Verkhovna Rada of Ukraine's legislative work plan and in planning the parliament's legislative activities as a whole (Vaolevska, L. A. & Myshchak, I. M., 2025). However, even today, the argument that there are few academic studies examining AI implementation in the work of parliaments and parliamentary services (Koryzis, D., 2021) remains relevant.

It is worth mentioning studies, having briefly examined the potential for using AI to provide scientific and expert support for parliaments work. The article by Leston-Bandeira, C., a methodological approach is proposed for studying the impact and role of information and communication technologies (hereinafter 'ICT') on the parliamentary functions performance (Leston-Bandeira, C., 2007). Given that AI is the most advanced ICT tool, the questions raised in this study are, in our view, relevant and topical. The questions concerned the impact of new technological tools on various aspects of the parliamentary institution functioning: have there been changes in parliamentary practices; has the image of parliament improved; have new opportunities arisen for improving interaction and communication between parliamentarians and citizens? If we were to combine all these questions into one and summarise it concisely, it would sound like this: are new technological tools beneficial to the work of parliament?

An interesting perspective on the AI usage significance in parliament is its interpretation as a means of creating added value, with two corresponding levels being identified (Ziouvelou, X., 2022). The first refers to facilitating the parliamentary functions performance, whilst the second one refers to providing assistance to parliamentarians and parliamentary staff.

Researchers Ziouvelou, X., Giannakopoulos, G. and Giannakopoulos, V. emphasise the need for AI to possess certain essential characteristics, such as reliability—ensured by legality, ethical standards and technological resilience—and compliance with the recommendations of leading international experts.

Of particular interest are publications the authors of which systematically analyse the areas of AI application in parliament and develop specific proposals. For example, Lucke, J., Etscheid, J. and Fitsilis, F., with the involvement of experts and representatives of the Greek Parliament, analysed the relevance and priority of over 210 relevant areas and identified the top four which, in our view, directly concern the Parliament's research service (Lucke, J., 2022). In addition, 36 proposals have been put forward on AI use to improve the legislative process.

Based on the results of expert brainstorming sessions and surveys of the Greek Parliament members and staff, the following have been identified as the most important areas of AI application:

- intelligent examination of draft legislation to determine the impact of proposed changes on existing legislation;

- the conversion of the texts of legislative acts into machine-readable code;

- the implementation of the 'smart law' concept through the processing and interpretation of legal texts, as well as the identification of the consequences of their application using AI technologies;

- ensuring the legislative process transparency in parliament (Lucke, J., Etscheid, J., Fitsilis, F. 2022). The thesis/ assertion regarding the potential impact of implementing the 'smart law'concept on accelerating legal research within the framework of parliamentary research services is certainly worthy of particular study and discussion.

Hungarian researchers Szentgáli-Tóth, B. A. & Berkes, R. have demonstrated the importance of clear legal regulation governing AI integration into the day-to-day work of parliaments (Szentgáli-Tóth, B. A., Berkes, R., 2025). In our opinion, the article presents relevant arguments regarding the close link between parliamentary activity and national sovereignty and democratic processes, the special role of parliaments as key constitutional actors, the rapid spread of AI technology use in parliaments, and the lack of clear regulation of such activities. The authors put forward two alternative proposals to address the problem they have identified. These involve the drafting of an EU legal act to integrate AI into parliamentary activities, which would meet the criteria for preserving national sovereignty and parliamentary autonomy, whilst also promoting technological innovation within European Union institutions. Another option is to amend the EU Regulation on Artificial Intelligence (EU AI Act) to ensure that parliamentary applications based on AI technologies are classified as high-risk AI. According to Szentgáli-Tóth, B. A. & Berkes, R., this would establish stricter requirements for AI use in parliament.

According to Gonzalo, M. Á., Director of the Department of Documentation, Library and Archives of the Lower House of the Spanish Parliament, in his presentation at the international conference of the Libraries and Research Services for Parliaments Section of the International Federation of Library Associations and Institutions (IFLAPARL), AI is a tool, providing research service staff with access to in-depth analysis and research (Gonzalo, M. Á., 2024).

He believes that annotated bibliographies and comparative legal studies generated by AI not only help researchers to speed up national legislation analysis in various countries, but also contribute to improving the legislative process quality by providing accurate data in real time. At the same time, the expert emphasises the need for the responsible use of these cutting-edge technologies, for which the relevant ethical and legal frameworks must be refined. In our view, there is unlikely to be a linear, direct link between AI use and processes optimisation and qualitative improvement, as noted by Gonzalo, M. Á. It is people who are the decisive factor in bringing about these changes, as they are capable, in particular, of identifying and correcting AI hallucinations.

The rapid development of methods and approaches to AI technologies use in the parliamentary services work is illustrated by the article by Cifuentes-Silva, F., Astudillo, H., and Labra Gayo, J., which examines relevant practices using the example of the Chilean Parliamentary Library (Cifuentes-Silva, F., 2025). In our opinion, the use of Semantic Web technologies (What is the Semantic Web and Semantic Technology, 2026) for the publication of legislative acts and the presentation of information on the history of legislation is worth studying, analysing and considering in terms of possible ways of adopting them. However, AI use to predict the prospects of a bill being passed, taking into account the current political context, should probably be regarded as an experiment at this stage.

Against the background of global competition amongst states for leadership in the AI field, and in the absence of a unified conceptual approach to the legal regulation of its development and use, publications emphasising the need to anticipate the negative consequences of introducing AI into parliamentary activities and to minimise them deserve particular attention (Lucke, J., 2022).

Existing scholarship has examined digital parliaments, AI-supported legislation and individual AI applications in legislative institutions, but parliamentary research units remain under-analysed as a distinct organisational setting. This matters because research services combine legal and policy analysis, access to parliamentary information, comparative research and direct support for decision-makers. The resulting research gap is therefore institutional: there is limited comparative analysis of how AI governance principles are translated into day-to-day rules, workflows and professional safeguards within parliamentary research services.

Accordingly, the article asks two questions: (1) which governance and organisational conditions are associated with responsible AI incorporation into parliamentary research services; and (2) how does the emerging practice of the Research Service of the Verkhovna Rada of Ukraine compare with recent international parliamentary experience? The objective is to identify transferable governance principles rather than to rank national parliaments by technological maturity.

2. Materials And Methods

The study uses a qualitative comparative case-study design combining doctrinal analysis, document analysis and structured institutional comparison. The primary normative framework consists of the IPU Guidelines for AI in Parliaments (2024) and the IPU Maturity Framework for AI in Parliaments (2025). These instruments were selected because they

are parliament-specific and jointly provide an analytical structure covering governance, technical capability, organisational capability and democratic impact. The Ukrainian case is examined through publicly available documents of the Research Service, including its 2026 Regulation on the Implementation of Artificial Intelligence Technologies and its methodological recommendations on AI-assisted analytical and comparative-law work.

Germany, Canada, Switzerland, Spain, Indonesia and Bahrain were selected as comparative cases because recent 2025–2026 public documentation describes concrete parliamentary AI initiatives and because the cases represent different implementation pathways: centralised use-case management, staff-centred institutional adoption, AI-assisted parliamentary libraries, maturity assessment, phased data-and-AI infrastructure development, and formal AI-management certification. The comparison is purposive rather than statistically representative. Evidence was coded against the four IPU dimensions and used to identify recurring governance patterns and transferable practices. Claims about effectiveness are therefore qualitative and documentary; the study does not measure productivity gains, causal effects or user outcomes experimentally.

The analysis also distinguishes between evidence about the internal operation of the Research Service and the Service's external analytical outputs on AI regulation in other sectors. This distinction is necessary to avoid treating the subject matter of a parliamentary research product as evidence that the same technology is already deployed institutionally within the Research Service.

3. Results

AI implementation in the Research Service's activities is governed by the Regulations, setting out principles and ethical standards for external AI systems use; the methodology for their selection, adaptation and operational use; the provision of professional development for staff in the AI field; the management of legal risks and information security procedures; functional limits, prohibitions and responsibilities when working with AI technologies (Regulation on the Implementation of Artificial Intelligence, 2026). The management and staff of the Research Service regard AI as a means of speeding up the preparation of materials and improving the educational process. At the same time, all materials produced by the Research Service must be original in nature and reflect the professional approach of its staff, which forms the basis for the legitimacy of its activities. With this in mind, these Regulations stipulate that staff may use AI in their work exclusively as an auxiliary tool for processing publicly available information only.

The responsible approach taken by the drafters of the Regulations on the Proper Use of AI for Research and Information-Analytical Support of the Activities of the Verkhovna Rada of Ukraine was demonstrated, in particular, in the establishment of categorical prohibitions for Research Service staff, aimed at safeguarding the parliament's information sovereignty, preventing the Research Service discrediting, ensuring the parliamentary activities confidentiality and protecting personal data. These prohibitions include: breaching data security and confidentiality protocols; delegating exclusive intellectual functions and authorial powers; breaching the rules on fact-checking; seeking final advice and automating decisions

with legally significant consequences; breaching ethical standards and principles of impartiality; using AI systems that lack a transparent policy regarding the non-use of user data for training their models; grant autonomous AI agents the right to make changes to official databases or register documents without prior approval of each action by a staff member; use desktop computers when working with AI; use work email accounts to register for the use of various AI tools and services (Regulation on the Implementation of Artificial Intelligence, 2026).

Based on the analysis of specialist academic literature and a review of their own experience in AI use, the Research Service staff have drawn up recommendations regarding a procedure for applying AI technologies to produce a structured, summarised document (Recommendations of the Research Service of the Verkhovna Rada of Ukraine, 2026, No 7). It is suggested that the relevant measures be implemented in three stages:

- selecting a specialised tool based on the type of an analytical task;
- creating a query using a professional profile and a multi-level structure;
- carrying out expert verification and analytical filtering (Verify & Refine).

Each of these stages is described in detail; for example, a list of relevant specialised tools is provided; it is recommended to structure tasks for AI using specific questions, to set strict requirements regarding the format and style of the final document, to carry out atomisation and a 'factual audit', to cross-reference against official primary sources, and to counteract the model's 'compliant' behaviour (Sycophancy).

It is worth noting that the Research Service's recommendations contain fundamental caveats regarding collaboration with AI: analysts must carry out professional fact-checking of documents prepared by AI via official portals, as well as carefully review their content and provide their own professional judgement and legal assessment of the document. In our opinion, the value of these recommendations lies in their universality, as the proposed procedure is relevant not only to the preparation of parliamentary analytical materials but also to any materials of analytical nature.

It is also worth noting the recommendations on the appropriate use of AI technologies for conducting comparative legal research (Recommendations from the Research Service of the Verkhovna Rada of Ukraine, 2026, No 5), prepared by the Research Service staff, drawing on their own experience and that of European Union institutions. In our opinion, a key piece of advice is that experts should bear in mind the lack of direct online access to legislation databases containing the original documents in most standard LLM models. Consequently, AI systems may utilise outdated data and news articles from the internet. The proposed methods for verifying the legal accuracy of legal terminology translation are of particular relevance to academics and experts. These include parallel translation, which involves cross-checking the translation output using several translation systems; back-translation, for example from Spanish to English and then from English to Spanish, to verify that the original meaning of the term has been preserved; checking legal terms using legal dictionaries or encyclopaedias, official translations of legislative acts or international agreements; and verifying the interpretation of a legal provision by searching for similar provisions in the legislation of different countries.

In addition, the Research Service staff are studying international experience of AI moder-

nisation. As at 30 June 2026, the institution catalogue of analytical and information materials contained 14 items of information and analytical material (hereinafter referred to as 'Research Service materials'), which examined various aspects of AI legal regulation and use (Catalogue of Analytical and Information Materials of the Research Service of the Verkhovna Rada of Ukraine, 2026), the vast majority of which were drafted between 2025 and 2026. In quantitative terms, it is worth noting the analysis of the experience of nearly 50 countries and the European Union, the results of the study of whose legislation are set out in the aforementioned materials. Most frequently, the research subject was the experience of the EU and its 27 Member States, as well as the USA. Considerable attention was paid to South Korea, Singapore, India and China.

14 The overall value of the relevant materials stems from their examination of the legislation of countries in different geographical regions, which have varying levels of economic—and, in particular, technological—development, different legal traditions and cultures, and adopt different approaches to AI regulation. It is worth emphasising that comparative law materials predominate, given that the focus of enquiries from Ukrainian MPs is specifically on studying foreign experience; this is due to Ukraine being at the initial stage of introducing AI legal regulation and seeking the most appropriate and optimal conceptual approaches. Among the key qualitative characteristics of the Research Service's materials is an emphasis on both the positive and negative aspects of AI widespread use, as well as recommendations on preventing potential negative consequences through the introduction of appropriate legal regulation of this sphere of social relations.

AI materials examination prepared by the Research Service provides grounds for categorising them into four groups based on the research subject: AI is considered in the context of analysing a specific sphere of social relations as one of the tools for its modernisation; the legal regulation of AI technologies used in a specific sphere is analysed directly; the legal regulation of the development and general use of AI is examined; and AI organisational and institutional framework is considered.

In our opinion, based on the analysis of many national parliaments websites, the AI tools most frequently implemented to enhance the transparency and user-friendliness of parliamentary websites would be useful for modernising the website of the Verkhovna Rada of Ukraine. These include the automation of live streams of parliamentary sessions and parliamentary committee meetings, the use of transcription and translation tools, as well as improvements to the document search function. (Information reference on the peculiarities of the functioning of parliamentary websites: structure, content, methods of efficiency assessment, 2025).

Following the analysis of international and national experience in the judicial process digitalisation as well as in safeguarding the independence of judges and the judicial system, recommendations have been formulated regarding the advisability of enshrining, in accordance with the codes of procedure, the possibility of administering justice remotely in the event of state of war or state of emergency (Informational Reference on Current Trends in the Development and the State of Ensuring the Independence of Judges and the Judicial System in Ukraine (2024–2025), 2026). This refers to court hearings held outside the court premises, when participants use their own technical equipment and undergo mandatory

electronic identification in order to take part in such hearings.

The argument regarding the need to foster a new judicial culture—one based, in particular, on the ethical transparency of AI algorithms and adherence to the principle of 'human oversight'—is highly relevant. One of the challenges posed by the rapid digitalisation pace of the justice system in Ukraine is countering 'profiling of judges' and automated decision-making without human oversight, which necessitates strict adherence to the principles of the European Ethical Charter on the use of artificial intelligence in judicial systems and their environment in the technological modernisation of the justice system.

In our opinion, the findings of the study into the role of AI in the creation of new branches of the DPRK's Armed Forces are relevant to the legislative process of establishing specialised cyber forces in Ukraine (Parliamentary research on the institutional establishment and assessment of the capabilities of the DPRK's cyber forces, 2025). A factor contributing to the alarmingly rapid expansion of this state's military cyber capabilities has been identified as the increased use of AI technologies by the North Korean military and hackers in recent years. Cyberattacks on military and financial organisations, as well as critical infrastructure, are becoming more frequent and sophisticated. AI helps hackers conceal their poor command of foreign languages or lack of communication skills, enabling them to build long-term relationships with potential victims without arousing their suspicion. Moreover, North Korean military and hackers use AI to create more effective viruses and ransomware, as well as to gain employment within public and private financial institutions, cryptocurrency exchanges, the defence sector and other strategic industries by submitting documents containing AI-edited photographs.

The study subject is the legal regulation of AI itself, as used, for example, in the justice system, the media, robotics, urban infrastructure management and sports (Information note on the use of artificial intelligence in the media:potential and risks, 2025; Parliamentary research on the legislative trends in the implementation of artificial intelligence tools in the field of justice in the European Union, 2025; Analytical note on comparative legislation regarding regulatory and legal regulation of the field of robotics and robotisation, 2025; Analytical note (comparative legislation) on the implementation of the Smart City concept in the European Union, USA, Canada and South Korea, 2024).

To help mitigate the potential risks associated with AI use in the judicial system—relating to security, protection and fundamental human rights—and create the conditions for the development and use of reliable AI within Ukraine's judicial system and justice sector, analysts from the Research Service have formulated a number of proposals. It is suggested that European standards be implemented into Ukrainian law to ensure the safety and accountability of AI systems by providing legal certainty regarding AI regulation, which will promote investment and innovation in this field. Proposals have been put forward to draft and adopt new regulatory acts setting out safety requirements for AI systems within the judicial system and the justice sector, and to improve Ukraine's procedural legislation with a view to the safe and effective AI implementation and use by the courts. (Parliamentary research on the legislative trends in the implementation of artificial intelligence tools in the field of justice in the European Union, 2025).

The Research Service has analysed Ukrainian legislation governing AI use, particularly in

the media, and provided recommendations on its updating to take account of current trends in the development of cutting-edge technologies. This refers to the need for legislation to define specific grounds, conditions and procedures for AI use in the media, to establish additional safeguards for the rights of media service consumers, and to set out appropriate sanctions for offences committed using AI. In addition, the information and analytical materials emphasised the advisability of introducing a code of ethical conduct regarding AI use in the activities of the media and journalists, which would set out: principles for the responsible AI use by journalists in their day-to-day work; rules for labelling AI-generated media content; requirements for developers and suppliers of AI-based solutions; rules allowing consumers to opt out of AI-generated content; and measures to prevent uncontrolled AI use (Information note on the use of artificial intelligence in the media:potential and risks, 2025).

A fundamental conclusion regarding the legal regulation of the autonomous robotics and AI technologies sector in the EU, its Member States and other countries around the world is that it is comprehensive in nature and places legal responsibility on humans rather than robots (Analytical note on comparative legislation regarding regulatory and legal regulation of the field of robotics and robotisation, 2025). Furthermore, based on a review of international experience regarding the legal regulation of robotics and automation, the Research Service's report outlines the existing conceptual approaches, which will enable those with the right to initiate legislation to select the most suitable option for Ukraine.

Given the rapid pace of development of AI technologies and their growing impact on all areas of social life, particularly in sports, the recommendations set out in the Research Service's reports regarding the improvement of the legal framework governing sports in Ukraine are highly relevant. Taking into account the results of the analysis of EU law in this area, the following is recommended: amending Ukrainian legislation in the field of sports, in particular with regard to defining specific grounds, conditions and procedures for AI use, and establishing appropriate sanctions for offences committed using AI; the implementation of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to personal data processing and on such data free movement, and repealing Directive 95/46/EC. Emphasis is also placed on the need for the National Olympic Committee of Ukraine and Ukraine's sports federations, organised by sport, to develop guidelines on the use of these technologies and to introduce codes of ethics governing AI use in sports. In our opinion, these recommendations implementation will help to protect athletes' rights and ensure fairness, integrity, accuracy and a level playing field for all parties involved in sport activities.

Based on the review of international experience in regulating AI (Parliamentary Study on the Legislative Regulation of the Use of Artificial Intelligence Technologies Across Countries Worldwide, 2026; Analytical note on comparative legislation regarding the regulation of artificial intelligence technologies in Ukraine, European countries and the United States, 2025; Analytical note on comparative legislation regarding the regulation of artificial intelligence technologies in Ukraine, European countries and the United States, 2025; Analytical note (comparative legislation) on legislation in the area of use of artificial intelligence technologies (current conditions and development prospects in the EU and in other countries), 2023; Information note on trends in the legal regulation of artificial intelligence technologies in

Ukraine and India, 2025), analysts at the Research Service suggest that, in the process of drafting the Ukrainian Law on AI, the European approach to regulating this sector should be followed. This position is based not only on Ukraine's status as a candidate country for EU membership, but also on the human-centred nature of the relevant legislation. The EU acquis in the AI field regulation is characterised, in particular, by the binding nature and uniformity of human-centred rules designed to ensure a high level of protection for health, safety, fundamental human rights, environment, etc; and by the enshrinement of the right to define the national specificities of legislative regulation of social relations in this field.

Furthermore, for Ukraine, in the context of the Russian Federation's large-scale armed invasion, the EU's experience of exempting AI systems intended exclusively for military, defence or national security purposes from the scope of legislation is particularly relevant, regardless of the type of organisation carrying out such activities. Establishing a transition period for parties involved in social relations relating to AI to adapt to the new legislative requirements also reflects the realities in Ukraine regarding the development of cutting-edge technologies and attempts to regulate their use.

In the 2023 report by the Research Service, based on the analysis of the legal and regulatory framework governing AI in many countries around the world, it is suggested that a specific approach be followed when introducing legal regulation of AI technologies in Ukraine:

- public discussion of the issues and challenges involved in implementing and operating systems that use AI;
- identifying the areas that are the highest priority for AI use;
- developing, in addition to the concept, a series of recommendations and national standards for AI use, and a code of AI ethics;
- adopting a National Strategy for the Development of AI Technologies, for example covering a 10-year period, and an AI Act which will, first and foremost, introduce effective legal regulation of the use of AI-generated content, a classification system based on risk level, a ban on high-risk AI practices, and oversight and legal liability for any harm that may be caused by this technology;
- improving the legal framework governing all social relations relating to safe and reliable AI technologies use.

It is worth noting the implementation of certain components of this algorithm. In particular, on 31 March 2026, the Ministry of Digital Transformation of Ukraine published a draft Artificial Intelligence Development Strategy up to 2030 for public consultation (The path of AI development through 2030: explore the draft Strategy and provide feedback, 2026).

In order to develop a national public administration ecosystem in the AI field in Ukraine, we believe it would be advisable to take into account the findings of the Research Service's experts regarding global practices in shaping the institutional architecture of the AI sector (Analytical note (comparative legislation) on the system and functions of state bodies and other institutions in field of artificial intelligence following the example of certain foreign states, 2023). Thus, in the countries whose experiences were studied, regardless of the specific features of their state structure and political regime, varying levels of financial capacity or geographical location, special state institutions and other administrative mechanisms for coordination and control are being established. The coordination activities of these speciali-

sed state institutions in this field involve fostering constructive dialogue and fruitful cooperation between the private sector and state institutions regarding AI technologies research, development and implementation, with the involvement of academics and the provision of state support and funding for relevant start-ups.

The Research Service also organises and conducts training sessions for Members of the Ukrainian Parliament and their parliamentary advisers, as well as staff of the Secretariat of the Verkhovna Rada of Ukraine, with the aim of providing knowledge, skills and competences needed to understand and apply AI as a tool for optimising the search for and processing of necessary information, as well as for the preparation of various types of documents. These events are prepared and conducted in close cooperation with international and national partners, such as the Research Service of the Seimas of Lithuania, the parliaments of Greece and the Republic of Italy, and the Ministry of Digital Transformation of Ukraine.

Since October 2024, the Research Service's training centre has been organising numerous webinars focusing on various aspects of AI use in parliamentary work, in particular the value and appropriateness of AI use by parliamentary research service staff, and AI integration into the work of Ukrainian MPs and their parliamentary advisers. In addition, participants are introduced to specific AI technologies, such as large language models (LLMs). The legal, technical and social aspects of AI technologies are also explored.

4. Discussion

Table 1. Comparative patterns of parliamentary AI incorporation

Case	Governance approach	Technical/data focus	Human/organisational focus	Transferable lesson
Germany (Bundestag)	Central coordination of AI use cases	Shared tools for legal research, text processing and information retrieval	Cross-departmental coordination	Portfolio governance can reduce duplication and fragmented risk management.
Canada (House of Commons)	AI strategy, internal guidance and risk management	Controlled institutional deployment and internal resources	Staff awareness, surveys and continuous communication	Adoption should be people-centred and accompanied by institutional learning.
Spain (Senate)	Use of the IPU maturity framework for self-assessment	Assessment of technical capability alongside other dimensions	Organisational culture treated as a maturity factor	Maturity assessment should include governance and democratic impact, not technology alone.
Switzerland (Federal Assembly Library)	Pilot-based deployment with user control and source traceability	Semantic search combined with generative AI	Human judgement and user sovereignty	Source attribution and reversible user control are central to trustworthy research support.
Indonesia (House of Representatives)	Phased digital and AI transformation	Data consolidation, metadata standards and knowledge management	Institutional readiness precedes wider AI adoption	Reliable data infrastructure is a prerequisite for useful AI.

Case	Governance approach	Technical/data focus	Human/organisational focus	Transferable lesson
Bahrain (Council of Representatives)	Formal AI-management system aligned with ISO/IEC 42001	Integrated digital parliament and AI-enabled legislative tools	Governance, risk and oversight mechanisms	Management-system standards can institutionalise continuous AI governance.

In this part of the article, it is appropriate to discuss certain aspects of AI technologies use within the administrative bodies—in particular the research departments—of the national parliaments of Germany, Canada, Spain, Switzerland, Indonesia and Bahrain, without focusing on the Research Service of the Verkhovna Rada of Ukraine, as the issues and challenges faced by all these institutions are universal in nature. This approach has been adopted in line with the 'Guidelines for AI in Parliaments', which were developed by the Inter-Parliamentary Union (IPU) in collaboration with the Centre for Innovation in Parliament and published at the end of 2024 (Guidelines for AI in parliaments, 2024). It is worth noting that the document in question makes no mention of specific departments within parliamentary services, as it concerns AI implementation in parliaments as holistic ecosystems, of which the services supporting their operations—in particular research services—form an integral part. Furthermore, AI modernisation is viewed as a comprehensive process, the components of which are closely interlinked, and AI tools can be applied across all organisational units within parliamentary administrations. In view of the above, the guiding principles and recommendations for their implementation are relevant to all elements of the organisational structures of parliaments and parliamentary services, in particular research units.

In the context of this article, it is worth highlighting certain key recommendations from the UIP regarding compliance with these guiding principles. Firstly, the recommendation to prioritise the AI use in areas such as legislative research (identifying trends in legislative development, as well as similarities or contradictions in draft legislation and existing laws) and support for the legislative process (impact assessment of draft legislation; analysis of amendments to understand their impact on the draft legislation; analysis of the draft legislation impact; collecting comprehensive data on the application of the law and monitoring its impact). These activities are carried out by staff in the research departments of parliamentary secretariats to provide research, expert and analytical support for parliamentary activities (Guidelines for AI in parliaments, 2024).

According to the Guidelines for AI in Parliaments, the organisational framework for the AI-driven modernisation of parliamentary activities and parliamentary services should consist of the following key elements: small-scale pilot projects to gain the necessary experience in digital transformation; a focus on AI use provided that specific benefits are realised and risks are managed; reliable human oversight of AI systems; prioritising transparency and accountability in AI; investment in raising awareness of AI amongst parliamentary staff; and engagement with all stakeholders throughout the process of introducing AI technologies (Guidelines for AI in parliaments, 2024).

To address the unique risks associated with AI introduction into the work of parliament and its administrative secretariat, the following is recommended: guidelines development

to ensure human oversight of AI tools use in the legislative process; establishment of rules governing information disclosure on AI use in the legislative process; developing a flexible AI strategy that can be adapted to rapid technological changes; establishing mechanisms for equitable access to AI resources; and developing protocols for international cooperation on the exchange of experience regarding AI implementation in parliaments and parliamentary services.

The example of the German Bundestag (Prioritizing AI use cases at the German Bundestag, 2025) demonstrates the value of a systematic and comprehensive AI implementation in the work of parliament, in particular the parliamentary service, which entails the proper administration, management and oversight of the relevant technologies. The two priority areas selected for AI use relate directly to the research service: the legislative process and the functioning of the parliamentary secretariat/parliamentary service departments. The AI Cloverleaf Model, implemented in the Bundestag, is based on a comprehensive approach that enables staff across all departments to use a single programme, as its text processing, information retrieval and analytical tools are universal in nature. In our opinion, the argument put forward by Martin Kamprath, the Bundestag's AI coordinator, regarding the budgetary and organisational pragmatism of this approach is compelling, as it enables the parliamentary administration departments to develop coordinated strategies for AI use, thereby optimising the necessary resources and reducing the potential risks associated with AI technologies use (Prioritizing AI use cases at the German Bundestag, 2025; Kamprath, M., 2025). The range of tasks carried out to provide support, particularly to research staff, is quite broad: from automating legal research to producing information documents.

The work of the Secretariat of the lower house of the Canadian Parliament (The AI journey of the House of Commons of Canada, 2025) on the introduction of AI is people-centred and is based on striking a balance between technological innovation, data protection, the responsible use of financial resources to ensure AI implementation, and ongoing communication between the department responsible for implementing the relevant policy and staff from other units of the Parliamentary Service.

Gradual AI integration into the work of the House of Commons in general, and the Parliamentary Service in particular, began in April 2024. It should be noted that, given this article subject, the analysis focuses solely on that part of the Parliamentary Service's work related to AI introduction specifically for its staff. At the same time, it is worth noting that the House of Commons' Parliamentary Service is also focused on implementing AI for Members of Parliament. Firstly, specialised organisational structures were established to oversee specific aspects of this process. In June of that same year, the AI centre was launched on the House of Commons' intranet, containing resources and guidance on the responsible AI tools use by all users of this internal network. To refine the AI tools and improve the skills of intranet users, the results of regular surveys on their experience of using the relevant technologies were taken into account. For example, in April 2025, an educational campaign was launched to raise AI awareness.

In November 2025, the House of Commons' AI strategy was unveiled (Report to Canadians 2026, 2026), the key components of which are strategic vision and management; data and risk management; the expertise of parliamentary service staff; the experience of users of

materials produced using AI tools; a project-based approach; and the value of the outcomes of implementing the latest technologies. It is clear that cybersecurity and institutional resilience have been identified as priorities.

The experience of the Spanish Senate (New insights into AI maturity in the Senate of Spain, 2026) demonstrates the importance of evaluating the process and outcomes of AI implementation. International standards, such as those set out in the Framework for the Maturity of AI Use in Parliaments, can serve as a guide (Maturity Framework for AI in Parliaments) (Maturity Framework for AI in Parliaments, 2025), developed by the Centre for Innovation in Parliament of the Inter-Parliamentary Union in 2025. According to the document, AI technologies use should be considered across four dimensions: governance (rules, policies and control mechanisms to ensure the responsible AI use, including risk management and ethical guidelines), technical capabilities (infrastructure, data and security management for the successful deployment and operation of AI tools), organisational culture (the human factor and institutional culture necessary to support AI implementation), and the 'democratic impact' on democracy (the impact of AI implementation on the functioning of parliament, on citizen engagement, parliamentary transparency and accountability, and the preservation or strengthening of democratic values and processes) (Maturity Framework for AI in Parliaments, 2025).

The results of an assessment of the state of AI implementation in the upper house of the Spanish Parliament revealed technological achievements and shortcomings across all other dimensions. In light of this, it is clear that the decisive factors for the successful AI implementation are not the technologies themselves, but rather the right organisational culture, people and processes. In our view, all parliamentary services, particularly research departments, would do well to take this experience into account. At the same time, the national context must be taken into consideration, as AI introduction is not merely a matter of IT modernisation, and culture is a fundamental factor in this process. It is well known that national cultures have significant distinctive features, which makes it impossible to devise universal formulas for AI introduction into the work of parliaments and the departments that support their functioning.

It is also worth looking at the experience of the Library of the Federal Assembly of Switzerland (Federal Assembly of Switzerland embeds trust at the heart of technology, 2026), whose staff faced the operational challenge of indexing several thousand parliamentary documents annually in the three official languages. With this in mind, a pilot project to integrate AI into its operations was launched in collaboration between the parliamentary library and the Bern University of Applied Sciences. The technological essence of the project lies in combining semantic search with generative AI. However, given the subject matter of this article, it is worth focusing on other aspects of this institution's experience.

The chosen AI design was based on elements such as the absolute sovereignty of the user, who is granted the right to completely block AI generation and process only source documents; the primacy of human judgement, as AI merely assists humans rather than replacing them, placing full responsibility for the outcomes of using such technologies on humans, which is crucial for their incorporation into the legislative body activities; building trust in AI by establishing transparency, traceability and source attribution as key requirements,

thereby reducing the risks of losing source traceability or receiving misleading content; building trust in AI through the establishment or provision of user control functions regarding language, visible sources, feedback. etc.

Also of interest is the conclusion, drawn from the aforementioned pilot project results, regarding the advisability of a phased approach – within the framework of specific projects – to AI introduction into the parliamentary services work. The gradual integration of the latest technologies makes it possible to identify their shortcomings and rectify them swiftly.

Over the past few years, the lower house of the Indonesian Parliament (AI journey of the House of Representatives of Indonesia: A phased approach to responsible digital transformation, 2026) has been gradually digitising its operations, with the key measures set out in the master plan for the development of information and communication technologies (hereinafter 'ICT') (Caperna, A., 2010) for 2020–2024.

During the phase of developing the digital foundations (2020–2022), priority was given to system integration through the consolidation of ICT system components and the strengthening of digital coordination between departments within the administration, as well as to enhancing cyber security and establishing a big data infrastructure. The data management development phase (2022–2023) proved to be a turning point. Thanks to these innovations – in particular, the launch of the One Data portal (a central big data repository), the standardisation of metadata used by the lower house's administrative departments, and the introduction of several data quality initiatives – there was a rise in confidence among the staff of the lower house's administrative departments regarding the AI technologies use for analytics. This was followed by the phase of AI implementation through specialised projects (2024–2025), which was carried out in line with the vision of AI technologies as a support mechanism and analytical assistant, rather than as a decision-maker. As of today, the final phase involves the refinement of knowledge management in the field of legislation (Knowledge management tools and processes, 2026) (2025–2027), which is being implemented in accordance with the House of Representatives' Master Plan for ICT Development for 2025–2027. Data on legislation, the findings of parliamentary oversight and public opinion have already been consolidated into unified platforms and systems, which will help improve AI ability to recognise patterns and enrich the institutional memory of the Indonesian House of Representatives. AI, under the supervision of specialists, will help to identify trends in legislative development and formulate evidence-based policies.

In our opinion, all parliamentary research units, in particular the Research Service, should take into account the key findings arising from the ICT modernisation of the lower house of the Indonesian Parliament when undertaking the digital transformation of their operations. The modernisation key elements should be harmonisation of data standards across all departments of the parliamentary service, integration of traditional and modern infrastructure, development of comprehensive AI management systems, assurance of effective cybersecurity and data protection, as well as enhancement of staff knowledge and awareness regarding AI. In light of this, the most important conclusion is the realisation that the priority lies not with the technological challenge, but with the challenge of the House of Representatives' institutional readiness for the relevant changes. This refers to the need to prevent the premature AI integration into the institution operations whilst its data proces-

sing system remains underdeveloped, as this will inevitably have a negative impact on both the technological component of digital transformation and the staff confidence in modern digital technologies.

The Bahrain Council of Representatives is the first legislative body in the world to have its AI governance system certified (The smart governance benchmark: Council of Representatives of Bahrain achieves ISO certification for AI, 2026). This refers to ISO/IEC 42001 – the world's first standard setting out requirements for the establishment, implementation, maintenance and continuous improvement of the AI management system within organisations (ISO/IEC 42001:2023. Information technology – Artificial intelligence – Management system, 2023). The standard requires the establishment of a governance framework, risk management protocols and oversight mechanisms to ensure the safe, transparent and ethical operation of AI programmes implemented within organisations. The requirements set out take into account the unique challenges arising from AI use – ethics, transparency and continuous learning – and strike a balance between digital innovation and its governance.

The digital modernisation of Bahrain's lower house of parliament was achieved through: the creation of a comprehensive e-parliament system, one of whose functions is AI use to analyse legislative acts; the introduction of a paperless operating model in the parliament's day-to-day activities; and robust data management protocols to ensure data quality, security and confidentiality. These measures have undoubtedly also had an impact on the Centre for Parliamentary Research and Training, which provides research and analytical support to the legislature. For example, the integration of an AI-powered chatbot into the parliamentary service digital infrastructure has provided analysts, in particular, with real-time access to all draft legislation and other parliamentary materials, thereby helping to optimise the analysis of these documents (AI-powered parliamentary bill and document chatbot for enhanced legislative analysis, 2024).

In addition to international certification of its AI management system, the Bahrain Council of Representatives has received certificates confirming that the information security and environmental management systems implemented in its operations comply with international standards (ISO/IEC 27001 and ISO 14001) (Certifying the First Legislative Body Worldwide Against ISO/IEC 42001, 2026). This international recognition attests to the successful application of a comprehensive, systemic approach to the digital modernization of the operations of the lower house of Bahrain's parliament.

Given the rapidly growing AI capabilities to manipulate and alter information, the study by the European Parliament Research Service (EPRS) on the threats posed by the deepfake technology use (Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) (Text with EEA relevance)), that needs to be taken into account by the staff of parliamentary research services while searching for information to prepare analytical materials (Bentzen, N., 2025).

This is geopolitical influence – e.g., shaping negative global public opinion on how the international community perceives Ukraine amidst the Russian Federation's large-scale

armed aggression; influencing elections in numerous countries, including Moldova, Slovakia, the USA, India, and the UK; shaping public opinion on any given issue; discrediting women and minorities; as well as propagating societal prejudices – such as stereotypes – concerning specific individuals or population groups; ”information laundering” – legitimization of false or misleading information, particularly regarding historical events or scientific achievements, through a network of intermediaries, employing a set of methods to distort and conceal the original source.

5. Limitations

The study is based on publicly available institutional documents, parliamentary publications and scholarly sources. It does not include interviews with parliamentary staff, access to internal technical logs, independent security testing or direct measurement of time savings, accuracy gains or user satisfaction. Accordingly, references to benefits, maturity or institutional readiness should be interpreted as documentary and comparative assessments rather than causal evaluations.

The six comparative cases were selected purposively because recent documentation was available and because they represent contrasting governance pathways. They are not a representative sample of all national parliaments. In addition, AI tools and institutional policies evolve quickly; the analysis therefore reflects the documented state of practice up to mid-2026 and should be revisited as parliamentary AI governance matures.

6. Conclusion

The comparison shows that responsible AI incorporation into parliamentary research services is primarily an institutional-governance task rather than a question of tool acquisition. Across the cases examined, five recurring conditions are visible: explicit governance rules, reliable and permission-aware data practices, human oversight, investment in staff competence, and staged implementation through pilots or controlled use cases. The IPU framework is useful precisely because it connects technical capability with organisational capability, governance and democratic impact.

The Research Service of the Verkhovna Rada of Ukraine demonstrates an emerging model consistent with these principles. Its internal regulatory documents treat AI as an auxiliary instrument, restrict the use of non-public or protected information, require professional verification and preserve human responsibility for analytical conclusions. The Service’s experience can be understood through four vectors: regulation of AI use; development and dissemination of institutional guidance; preparation of comparative analytical materials on AI regulation and applications; and AI-literacy activities for parliamentarians, advisers and parliamentary staff.

The principal scientific contribution of the study is the distinction between technological adoption and governance capacity in parliamentary research. The comparative cases suggest that sustainable AI incorporation depends on the quality of institutional arrangements around the technology: source traceability, data governance, role-based access, transparent

responsibility, professional review and continuous learning. These conditions are particularly important for parliamentary research services because errors or opaque automation may affect legislative analysis and, indirectly, democratic decision-making.

For practice, the findings support a staged roadmap for parliamentary research services: define authorised and prohibited uses; classify data and access rights; pilot bounded use cases; require source-linked verification; train staff; monitor incidents and user experience; and periodically reassess maturity against parliament-specific governance criteria. Future research should test these propositions empirically through interviews, workflow observation, accuracy audits and comparative measures of productivity and trust.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability

The study is based on publicly available institutional documents, parliamentary publications and sources listed in the References. No original dataset was generated.

Ethics Statement

The study did not involve human participants, personal data collection or experimental intervention; ethics committee approval was therefore not required.

Declaration of Generative AI Use

Generative AI tools were used to support language editing during the preparation of this manuscript. The authors verified all factual and legal claims and take full responsibility for the content of the article.

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