

# Digital Strategy for Evidence-Based Policymaking in Parliament

Dimitris Koryzis and Dimitris Spiliotopoulos

<https://doi.org/10.5321/ELFTPS4> • ISSN (print) 2791-3880 • ISSN (online) 2791-3899

## ABSTRACT

In this digital era, public organisations, such as parliaments, are required to develop digital strategies to transform their operations. This strategy should use digital technologies that provide added value for parliamentary users involved in the policymaking process. Parliaments can support evidence-based policymaking (EBP) decisions in the adoption, formulation, and evaluation of public policies, using the knowledge acquired during parliamentary life cycles.

This chapter proposes the adoption of digital tools in all decision-making stages in parliament. A roadmap is given, set in the context of a user-centric digital transformation framework and its digital technologies. Aspects that are analysed include the boundary conditions for the creation of an EBP digital environment.

## ABOUT THE AUTHORS

Dimitris Koryzis is a scientific officer at the Strategic Planning and Management Functions Re-engineering Unit in the Hellenic Parliament. A PhD student at the University of Peloponnese, he has an MBA (Decision Sciences) from Athens University of Economics and Business, and an MSc in Production & Management Engineering from TU Crete.

Dimitris Spiliotopoulos is an Assistant Professor at the University of the Peloponnese, Greece. He has a PhD in Human-Computer Interaction, an MPhil in Management Information Systems, an MA in Linguistics, and a BSc in Computation. He has published widely internationally.

## INTRODUCTION

Modern democracies demand transparency, accountability (Dalton, Scarrow, & Cain, 2004), and commitment to policy measures that affect the daily lives of their citizens. Although barriers towards substantial transformation remain (Tangi et al., 2020), policy-makers, decision-makers, and administrators can overcome the unprecedented complexity involved in transformation through the use of advanced digital tools (Fitsilis, Koryzis, & Schefbeck, 2022).

However, making management decisions based on past experience and knowledge gained from operational policy formulation should be based on integrated strategic choices. For this reason, organisational knowledge acquired during the life cycle of a public organisation must be increasingly based on cognitively integrated digital data, set in the framework of a comprehensive digital strategy.

Until recently, traditional business strategy techniques have seemed to be incapable of capturing the complex bureaucratic nature of such organisations (Fitsilis, Koryzis, & Schefbeck, 2022) without involving all major users (policy-makers, stakeholders, citizens, actors, scientists, and communities) in the decision-making process, leaving the knowledge generated over a lifetime to a large extent unused. Making evidence-based policymaking (EBP) decisions accessible for all stakeholders involved in the policymaking process (mainly in the formulation of public operational policies) using the knowledge acquired during the life cycle of a public organisation should be increasingly based on cognitive integrated digital data.

Especially in the working environment of public organisations such as parliaments there is a discontinuity of plans and projects, a lack of integrated

---

## The use of advanced digital technologies and e-legislation tools should go hand in hand with classic bureaucratic parliamentary organisational tasks

---

interconnection between business units, a diversity of internal processes, and a lack of understanding of organisational techniques (Campos, Miranda, & Rodrigues De Assis, 2016).

Making concerted efforts to change this will provide access to better services customised to the needs of policymaking actors and stakeholders (Fitsilis, Koryzis, & Schebeck, 2022), allowing them to participate effectively in developing a unified, homogeneous, comprehensible strategy with an emphasis on the digital world.

The opportunities presented by digital technologies for policymaking fall into three broad categories: knowledge and people management, data analysis, and knowledge from the involvement of citizens in the whole process (Lloyd, 2020). Digital technology should support rather than hamper institutional memory, enable more collaborative ways of working, and help policymakers to draw more effectively on the experience and skills of civil servants across the government. The use of advanced digital technologies and e-legislation tools as part of this should go hand in hand with classic bureaucratic parliamentary organisational tasks. A knowledge pattern is thus required that addresses new values for all parliamentary procedures, people, and systems, affecting all parliamentary stakeholders and users. Parliamentary data as part of EBP in this new environment is clearly vital.

This chapter explores the implications of a digital strategy within a parliament as part of broader parliamentary strategy planning. The role of digital transformation in parliamentary procedures and functions and the need for organisational transformation are also investigated. The chapter endorses

a set of applicable digital technologies for digital transformative parliaments and their role in EBP adoption. It aims to formulate a proposal that works towards synthesis in an operational parliamentary environment.

### **DIGITAL STRATEGY**

In the digital era, social media is a challenge for modern governance (Schebeck, Spiliotopoulos, & Risse, 2012; Spiliotopoulos, Schebeck, & Koryzis, 2013). Most parliaments issue strategic plans or ad hoc operational plans, but only a few have come up with a digital strategy that fundamentally transforms parliamentary functions. The question remains whether users need additional applications, tools, and ad hoc services, and whether these would work better than non-digital alternatives. Social media allows the direct involvement of citizens in parliamentary functions, facilitating societal collaboration. As a result, qualitative research is required to evaluate which parliamentary tools, services, and applications are required and used (Theiner, Schebeck, & Koryzis, 2018).

Engaging all users, actors, and stakeholders in the parliamentary decision-making processes is the aim of a digital strategy. Modern parliaments have the chance to become constitutional networks of collaboration through the use of digital technologies (Mencarelli, 2021). Mencarelli (2021) addresses the need for a digital strategy that works towards a balanced hybridisation of physical and virtual attendance of parliamentary users (Members of Parliament, scientific advisors, citizens, lobbyists, businesses, scientists, experts) in all parliamentary activities and tasks.

Koryzis et al. (2021) proposes an integrated parliamentary digital strategy, digitalisation of parliamentary operations, enabling digital transformation and the use of digital emerging technologies in the parliamentary context as the four main pillars of a parliamentary transformation framework. The digital strategy contains the organisation's vision, values, scope, and goals, with a clear definition of digitalisation in the parliamentary context (e.g., openness, transparency, accountability, and societal representation). However, only a few parliamentary strategic plans encapsulate a concrete digital strategy that takes in societal digitalisation already in progress (Koryzis et al., 2021). Parliamentary digital transformation of the legislative function could be seen as part of an overall strategy, with its main action plan closely dependent on parliamentary data. The aim should be

a fully digital approach, involving stakeholders in the main stages of the policymaking process (Koryzis et al., 2020), bringing together human activities and digital features in a hybrid environment. Parliamentary information and communications technology (ICT) systems could be updated, based on a digital strategy, with the digitalisation of parliamentary functions being part of an e-legislation roadmap that includes parliamentary business procedures. In this strategy, there is a need for the identification and planning of digitalisation actions with suitable digital technologies. This could be achieved by upgrading existing parliamentary technology systems and developing new ones, together with tools and applications that link bureaucratic activities and electronic/automated legislative processes.

The introduction of innovative ICT actions, digital tools, and approaches through the formulation of a digital strategy is often combined with a transformation of the whole organisation, resulting in improved operational performance (Hess et al., 2016).

## **DIGITAL TRANSFORMATION**

The digital transformation of society has begun to transform the organisational culture of public organisations such as parliaments. This transformation is affected by changes in the way the global economy functions, the social inclusion challenges that governments face, and the way in which democracies operate. As a response to all these factors, governments have gained a new-found appreciation for the growing importance of the value of data (Ubaldi, Van Ooijen, & Welby, 2019).

Digital transformation is not just about introducing digital technologies and applications; it also requires a transformation of the organisational culture. This presents a challenge for parliaments, as there are barriers that hamper this change: culture, complexity, traditional ways of thinking, resources, leadership, and strategy (Tangi et al., 2020; Koryzis et al., 2021). Based on publicly available research results, it is apparent that government institutions and public authorities, such as parliaments, are trying to understand the fast-changing digital world, but most governmental organisations lack a strategy to achieve digital transformation (Eggers & Bellman, 2015) owing to the barriers already mentioned. As Theiner, Schefbeck and Koryzis (2018) note, parliaments in Western Europe and the Baltic states are active in the adoption of digital technologies, but this is less the case in the UK. The countries of Eastern and Southern Europe are least engaged

with citizens online, with the exceptions of Malta, Slovenia, and Croatia.

It is clear that digitalisation mostly transforms organisational processes relating to people, data, and systems. Nevertheless, there is still a limited consensus on how digital transformation tools, trends, and technologies can be used efficiently and effectively in parliaments. It is evident that by creating new organisational values, integrating digital technologies and organisational operations (Matt, Hess, & Benlian, 2015), a digital transformation strategy affects the entire organisation for which it is designed. Digital transformation depends on continuous organisational change and disruption (Vial, 2019).

## **EVIDENCE-BASED POLICYMAKING**

Public sector organisations often fail to handle their Business Intelligence (BI) systems and the knowledge derived from their activities efficiently and effectively, so there is clearly a need to improve evidence-based management in governance (Sapp, Mazzuchi, & Sarkani, 2014). Literature relating to public-sector reform focuses on EBP (Sanderson, 2002; Marston & Watts, 2003; Curry, 2014; Head, 2016), but very few scholars link digital strategy with EBP.

The term 'evidence' has many applications, and is mostly used to relate to random control trials and 'natural experiments' as observational studies that assess the impacts of policies. Findings can be used in policy formulation and policy evaluation or in transferable lessons. They can be synthesised in a broader framework that includes terms such as 'informed decision-making', 'learning from the mistakes of others', and the more recent 'qualitative feedback' from citizens, which open the way both to policy change and the 'collaborative co-design' of services (Rutter, 2012). Collaboration, cooperation, and co-design can also help to find solutions to complex problems, using participatory design, design thinking, and public sector innovation (Blomkamp, 2018).

Head (2016) distinguishes between phrases such as 'problem definition or agenda setting', 'data analysis', 'policy design or policy formulation', 'policy adoption', 'policy implementation', and 'programme review or policy evaluation', in all of which digital tools may be used by users/stakeholders.

The core assumption of EBP is that policy action by government or parliament is based on 'sound evidence' garnered through social research and evaluation, extracted from users, actors, and stakeholders in the policymaking cycle (Sanderson, 2002),

addressing real-life problems based on data evidence (Majcen, 2017), and including rational analysis (Sutcliffe & Court, 2005) and the manner in which evidence is included in bureaucratic organisations and their functions (Blaser Mapitsa, Ali, & Khumalo, 2020).

Evidence can be gathered successfully if all actors are involved in the EBP processes. This engagement requires pragmatism, combining scientific evidence with policymaking principles, and the translation of complex evidence into simple stories, something that is common in legal processes (Cairney & Oliver, 2017) – although parliamentarians may be more focused on political argumentation that is not based on sound scientific evidence. There is also backup from other stakeholders (e.g., scientific advisors, political analysts), especially in terms of engagement in media-framed debates (Head, 2016). There have been surprisingly few studies of how such information is utilised in policymaking (Hemsley-Brown, 2004).

Based on these comments and on related literature (Cairney & Oliver, 2017), the following challenges can be formulated:

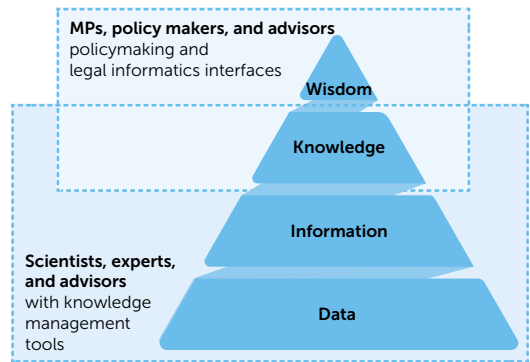
- Considerable data analysis is required to create useful scientific proof for policy-maker utilisation and policy agenda influence.
- The proper use of *ex ante* and *ex post* implication and impact assessment studies are needed during the policymaking stages.
- Scientific results and data have to be credible, as policy solutions and scenarios are based on them.

A representative example of EBP is the European Commission’s reliance on statistical information to contribute to decision-making, with accurate information or data at its heart. This assists in the development of effective policies, but overall, there is a lack of reliable data owing to the absence of strategies, frameworks, and tools for data collection (Mair et al., 2019). The Knowledge for Policy (K4P) pyramid shown in Figure 1 with links between data, information, knowledge and wisdom, and respective users with their policymaking tools and applications, could be used as best practice.

It is also clear from the literature (Sutcliffe, 2005) that:

- A wide spectrum of evidence is needed to support policy, not just research.
- Quality, credibility, relevance, and policy cost key factors.

FIGURE 1: K4P linked knowledge pyramid



- Evidence is required for several stages of the policy cycle.
- Time constraints may affect the mechanisms available to mobilise evidence, since urgent issues require different approaches than those related to strategic policy directions.

According to recent research for the UK Parliament (Rose et al., 2020), four factors control the use of evidence-based research: credibility, timing, accessibility, and relevance.

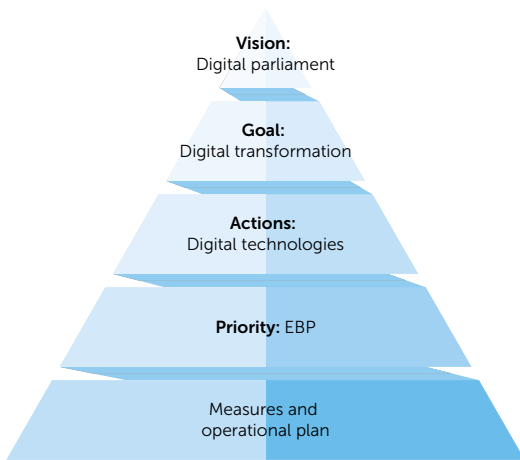
To sum up, it is crucial to use evidence in legislative policymaking, but is not yet clear how this affects all the policymaking stages in the parliamentary cycle (Crewe, 2017; Nutley et al., 2019; Rose et al., 2020), although the efficient use of parliamentary information – after data acquisition, integration, and exploitation – could be transformed into a knowledge depot for parliamentary stakeholders (Granickas, 2013). There are several difficulties encountered when using evidence-based information (Munyoro, 2019). In some cases, the information given cannot be understood, whether this is caused by jargon, unsuitable data, outdated information, complicated legal wording, or puzzling statistics (Fitsilis, Koryzis, & Schefbeck, 2022). This may be the result of a lack of resources or researchers with relevant experience in the parliamentary research department.

Based on this, a digital strategy for parliamentary digital transformation could be the driver for the adoption of evidence-based policies, as presented in Figure 2.

## CONCLUSION

Parliaments could adopt digital transformation strategies as part of a broader strategic plan,

**FIGURE 2: Digital strategy for evidence-based policymaking**



incorporating novel digital technologies into their working procedures and improving their outdated bureaucratic parliamentary organisational tasks. Parliaments need a digital strategy with concrete actions in order to create digital parliaments with organisational functions that set them on a digital transformation path, addressing new values for all parliamentary procedures, people, and systems. Using the K4P model, the role of parliamentary data as an integral part of the EBP process is crucial. The use of BI for policymaking should be the ultimate goal of a strategy that aims to transform data into parliamentary knowledge.

#### REFERENCES

Blaser Mapitsa, C., Ali, A. J., & Khumalo, L. S. (2020). 'From Evidence to Values-Based Decision Making in African Parliaments'. *Evaluation Journal of Australasia*, 20(2), 68–85. <https://doi.org/10.1177/1035719X20918370>.

Blomkamp, E. (2018). 'The Promise of Co-Design for Public Policy'. *Australian Journal of Public Administration*, 77(4), 729–743. <https://doi.org/10.1111/1467-8500.12310>

Campos, R., Miranda, R., & Rodrigues De Assis, N. (2016). 'Initiatives of Knowledge Management in Brazilian Chamber of Deputies'. *Research in Economics and Management*, 1(1). [www.scholink.org/ojs/index.php/frem](http://www.scholink.org/ojs/index.php/frem).

Cairney, P., & Oliver, K. (2017). 'Evidence-Based Policymaking Is Not Like Evidence-Based Medicine, so How Far Should You Go to Bridge the Divide between Evidence and Policy?' *Health Research Policy and Systems*, 15(1), 35. <https://doi.org/10.1186/s12961-017-0192-x>.

Crewe, E. (2017). 'Ethnography of Parliament: Finding Culture and Politics Entangled in the Commons and the Lords'. *Parliamentary Affairs*, 70(1), 155–172. <https://doi.org/10.1093/pa/gsw012>.

Curry, D. (2014). 'Trends for the Future of Public Sector Reform: A Critical Review of Future-Looking Research

in Public Administration'. *The COCPUs Project, EU FP-7*.

Dalton, R.J., Scarrow, S.E., & Cain, B.E. (2004). 'Advanced Democracies and the New Politics'. *Journal of Democracy*, 15(1), 124–138.

Eggers, W., & Bellman, J. (2015). 'The journey to government's digital transformation. A Deloitte Digital global survey', [www.deloittedigital.com](http://www.deloittedigital.com).

Fitsilis, F., Koryzis, D., & Schefbeck, G. (2022). 'Legal Informatics Tools for Evidence-Based Policy Creation in Parliaments'. *International Journal of Parliamentary Studies*, 1–25. <https://doi.org/https://doi.org/10.1163/26668912-bja10031>.

Granickas, K. (2013). 'Parliamentary Informatics: What Data Should Be Open and How Multi-Stakeholder Efforts Can Help Parliaments Achieve It'. *European Public Sector Information Platform Topic Report, 2013/05*.

Head, B.W. (2016). 'Toward More "Evidence-Informed" Policy Making?' *Public Administration Review*, 76(3), 472–484. <https://doi.org/10.1111/puar.12475>.

Hemsley-Brown, J. (2004). 'Facilitating Research Utilisation'. *International Journal of Public Sector Management*, 17(6), 534–552. <https://doi.org/10.1108/09513550410554805>.

Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). 'Options for Formulating a Digital Transformation Strategy'. *MIS Quarterly Executive*, 15, 123–139.

Koryzis, D., Dalas, A., Spiliotopoulos, D., & Fitsilis, F. (2021). 'ParlTech: Transformation Framework for the Digital Parliament'. *Big Data and Cognitive Computing*, 5(1), 15. <https://doi.org/10.3390/bdcc5010015>.

Koryzis, D., Fitsilis, F., Spiliotopoulos, D., Theocharopoulos, T., Margaritis, D., & Vassilakis, C. (2020). 'Policy Making Analysis and Practitioner User Experience'. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics): Vol. 12423 LNCS*. [https://doi.org/10.1007/978-3-030-60114-0\\_29](https://doi.org/10.1007/978-3-030-60114-0_29).

Lloyd, L. (2020). 'Policy making in a digital world', [www.instituteforgovernment.org.uk](http://www.instituteforgovernment.org.uk).

Mair, D., Smillie, L., la Placa, G., Schwendinger, F., Raykovska, M., Pasztor, Z., & Bavel, R. van. (2019). *Understanding Our Political Nature: How to Put Knowledge and Reason at the Heart of Political Decision-Making*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2760/910822>.

Majcen, Š. (2017). 'Evidence Based Policy Making in the European Union: The Role of the Scientific Community'. *Environmental Science and Pollution Research*, 24(9), 7869–7871. <https://doi.org/10.1007/s11356-016-6247-7>.

Marston, G., & Watts, R. (2003). 'Tampering with the Evidence: A Critical Appraisal of Evidence-Based Policy-Making'. *The Drawing Board: An Australian Review of Public Affairs*, 3(3), 143–163.

Matt, C., Hess, T., & Benlian, A. (2015). 'Digital transformation strategies. *Business & Information Systems Engineering*, 57(5), 339–343.

Mencarelli, A. (2021). 'Parliaments Facing the Virtual Challenge: A Conceptual Approach for New Models of Representation'. *Parliamentary Affairs*. <https://doi.org/10.1093/pa/gsab052>.

Munyoro, I. (2019). 'Assessing Parliament of Zimbabwe's Informatics Database as a Tool for Providing Evidence-Based Information for Decision Making'. *Journal of Librarianship and Information Science*, 51(1), 218–227. <https://doi.org/10.1177/0961000617726122>.

Nutley, S., Boaz, A., Davies, H., & Fraser, A. (2019). 'New Development: What Works Now? Continuity and Change in the Use of Evidence to Improve Public Policy and Service Delivery'. *Public Money & Management*, 39(4), 310–316. <https://doi.org/10.1080/09540962.2019.1598202>.

Rose, D.C., Kenny, C., Hobbs, A., & Tyler, C. (2020). 'Improving the Use of Evidence in legislatures: The Case of the UK

- Parliament'. *Evidence & Policy: A Journal of Research, Debate and Practice*, 16(4), 619–638. <https://doi.org/10.1332/174426420X15828100394351>.
- Rutter, J. (2012). *Evidence and Evaluation in Policy Making*. London: Institute for Government.
- Sanderson, I. (2002). 'Making Sense of 'What Works': Evidence Based Policy Making as Instrumental Rationality?' *Public Policy and Administration*, 17(3), 61–75. <https://doi.org/10.1177/095207670201700305>.
- Sapp, C. E., Mazzuchi, T., & Sarkani, S. (2014). 'Rationalising Business Intelligence Systems and Explicit Knowledge Objects: Improving Evidence-Based Management in Government Programs'. *Journal of Information & Knowledge Management*, 13(02), 1450018. <https://doi.org/10.1142/S021964921450018X>.
- Schefbeck, G., Spiliotopoulos, D., & Risse, T. (2012). 'The Recent Challenge in Web Archiving: Archiving the Social Web'. *International Council on Archives Congress, Brisbane, Australia*, 20–24 August, 1–5.
- Spiliotopoulos, D., Schefbeck, G., & Koryzis, D. (2013). 'Obtaining Societal Feedback on Legislative Issues through Content Extraction from the Social Web'. *Proceedings of the 16th International Legal Informatics Symposium IRIS 2013, Salzburg, Austria*, 21–23.
- Sutcliffe, S., & Court, J. (2005). *Evidence-Based Policymaking: What Is It? How Does It Work? What Relevance for Developing Countries?* London: Overseas Development Institute.
- Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2020). 'Barriers and Drivers of Digital Transformation in Public Organizations: Results from a Survey in the Netherlands'. In G. Viale Pereira, M. Janssen, H. Lee, I. Lindgren, M.P. Rodríguez Bolívar, H. Jochen Scholl, and A. Zuiderwijk (eds.), *Electronic Government*, 19th IFIP WG 8.5 International Conference, EGOV 2020, Linköping, Sweden, 31 August–2 September, Proceedings, pp. 42–56. Cham: Springer. [https://doi.org/10.1007/978-3-030-57599-1\\_4](https://doi.org/10.1007/978-3-030-57599-1_4).
- Theiner, P., Schwanholz, J., & Busch, A. (2018). 'Parliaments 2.0? Digital Media Use by National Parliaments in the EU'. In J. Schwanholz, T. Graham, & P.T. Stoll (eds.), *Managing Democracy in the Digital Age: Internet Regulation, Social Media Use, and Online Civic Engagement*, pp. 77–95. Cham: Springer. [https://doi.org/10.1007/978-3-319-61708-4\\_5](https://doi.org/10.1007/978-3-319-61708-4_5).
- Ubaldi, B., Van Ooijen, C., & Welby, B. (2019). 'A Data-Driven Public Sector: Enabling the Strategic Use of Data for Productive, Inclusive and Trustworthy Governance'. *OECD Working Papers on Public Governance No. 33*. <https://doi.org/10.1787/09ab162c-en>.
- Vial, G. (2019). 'Understanding Digital Transformation: A Review and a Research Agenda'. *The Journal of Strategic Information Systems*, 28(2), 118–144.