

Cross-Border Mobile Government Services: Exploring Business Model Dynamics in mGov4EU



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Abstract The mGov4EU project represents an ambitious effort to revolutionise European mobile government services. It aims to develop an ecosystem that integrates state-of-the-art digital wallet approaches within the framework of eIDAS and SDG. This initiative is pivotal in fostering a seamless interface between citizens, businesses, and public administrations, enhancing the efficiency and user experience in accessing government services. Despite its potential, the mGov4EU project confronts many challenges, including legal compliance, technical interoperability, user acceptance, and the formulation of viable and sustainable business models. These challenges are particularly pronounced in the public sector, where traditional business strategies may not align seamlessly with innovative digital service models. This chapter focuses on examining the business model aspects of the mGov4EU project. It explores the strategies and priorities of the project's partners, particularly in the context of sustaining and scaling the project outcomes within the European framework. It reflects on decisions, as well as challenges accordingly.

Keywords mGov4EU · eIDAS · SDG · Digital government services · Business model innovation · Public sector · Interoperability · User-centric services

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1 Introduction

The core objective of the mGov4EU (Mobile Cross-Border Government Services for Europe) project is to design, implement, and evaluate innovative solutions toward an ecosystem for secure and user-centric mobile government services [1], particularly in integrating digital wallet approaches. An essential part of this ecosystem is extending the development and use of technological building blocks within the domains of eIDAS (Electronic Identification, Authentication, and Trust Services) and SDG (Single Digital Gateway) via the realisation of three different piloting domains, i.e. mobile signature, smart mobility, as well as electronic voting. The overall vision is that the mGov4EU approach will ultimately foster the interaction between citizens, businesses, and public administrations while significantly reducing the associated burden concerning complicated processes and administrative overhead in general [2].

Before this backdrop, the success and sustainability of such an ecosystem and its included building blocks face not only legal challenges, challenges of technical interoperability, and challenges concerning usability and user acceptance [3] but also business-related challenges. These business-related challenges are faced from both sides, the public sector side and the business sector side [4]. Besides others, these challenges include securing sustainable funding sources, balancing short-term costs vs. long-term benefits, or integrating within existing business models and strategies [5–7].

Given this scenario of challenges, this chapter investigated the perspective of mGov4EU's business partners concerning initial business model venues for their developed building blocks and pilot artefacts. This contribution aims to explore the focus points of developing partners in the context of a European project concerning perceived priorities for sustaining their project outcomes.

The remainder of this chapter is structured as follows: Section 2 discusses related work concerning business model concepts in general, as well as current developments of business model innovation within the public sector. Section 3 then continues with the description of the project setting, the chosen methodology for exploring business model dynamics within the project, as well as the data used within this chapter. Section 4 then presents a summary of the business model dynamics, followed by Sect. 5, which discusses interesting findings and some initial thoughts on touching points with current developments in the public sector. Finally, Sect. 6 closes the chapter with our conclusions, alongside starting points for future work.

2 Background

The focus of this section is twofold. A brief overview of business model concepts from a general perspective is provided on the one side. Conversely, the current state of play within the public sector is briefly summarised. This information combined shall enable readers to put the results of the workshops into perspective.

2.1 *Business Model Concepts*

The concept of the business model, originally coined in 1957, encompasses a range of definitions that encapsulate its elements and capacity to generate value [8]. Most definitions explain business models as concepts that describe and define how businesses work and the value generated by stakeholders [9]. In addition, Osterwalder's widely known definition of a business model states that a business model describes the rationale of how an organisation creates, delivers, and captures value [10].

Research has been conducted in various fields regarding concepts or approaches to business models. Three perspectives that have shown an interesting intertwining of approaches for business models are the following [11, 12]: (i) information technology, (ii) organisational management, and (iii) strategic management.

First, from an information technology perspective, business model concepts took an approach that eventually evolved into an organisational theory approach, and strategic management approaches for business models were more of a management tool [12]. This perspective eventually developed tools and technologies that would help assist in faster and more efficient processes regarding documentation and analyses. In [13], the authors presented a business model concept that is separated into three steps:

1. The CEO and/or responsible managers determine the available resources and business objectives.
2. The system developer designs the structure and the business process, including the appropriation of the resources, thus presenting the business model as a simplified business process.
3. Development of an information system based on the business model.

Second, the work of [14] highlights that organisational theory views a business model as more of an abstract depiction of the company's architecture. This architecture would aim to achieve high results by optimising its organisational regulations. Further, this interpretation sees that the business model is no longer reduced to the first stages of technology development and includes a wider range of services. Regarding organisational theory, it is assumed that some business model goals are to understand key business methods better, identify outsourcing opportunities, and try out new business concepts [12].

Third, the strategic management approach to business models shows how to incorporate strategic components in the conception. The approach is based on resource-based and market-based views. It relies on strategic approaches to allow flexibility to shape and change current business models and tailor them to the situation. In addition, there is an introduction of innovation factors that can also impact business models [11, 12].

2.2 *Business Model Innovation in the Public Sector*

The public sector, encompassing various governmental and semi-governmental organisations, has traditionally been viewed as rigid and slow to adapt compared to its private sector counterparts [15]. However, recent literature indicates a significant shift toward innovation and adaptability in public sector management.

Within the strive for innovation, public sector organisations face similar challenges regarding alignment and anticipation of stakeholder perspectives [16]. By their very nature, public organisations cater to a broad spectrum of stakeholders, including citizens, policymakers, and other governmental entities. The complexity lies in the diverse and sometimes conflicting expectations of these groups. Unlike private companies primarily focusing on customer needs and shareholder value, public organisations must juggle multiple, often competing, interests. This necessitates a delicate balance between delivering public value (i.e. social good and sustainability) and maintaining operational efficiency [17]. While private sector organisations increasingly embrace such values within the business models as well [18], their focus is still more towards profit orientation [19].

Within this context, [20] advocates an innovation-based approach as a key strategy for public sector organisations. Public institutions must evolve continually to remain relevant and effective in rapidly changing societal and economic landscapes. This perspective encourages public sector organisations to adopt more dynamic and flexible business models similar to those in the private sector. This approach allows public entities to respond more swiftly to today's multi-faced changes and emerging stakeholder demands, enhancing their ability to serve the public effectively.

An excellent example of a framework approach towards public sector business model innovation can be found in the work of [21]. This comprehensive framework can be used by public sector organisations as a strategic planning tool, reflecting the necessity for reflexive actions in highly dynamic environments, as well as the necessity for revisited (value) negotiation with the relevant stakeholders.

3 Methodology

To assess the initial business model venues of the mGov4EU developing partners, the Business Model Canvas (BMC) was used to plan and assess potential business model approaches and solutions based on the developed building blocks and pilot artefacts. A BMC is a strategy tool used for visualising, evaluating, and, if necessary, changing business models of organisations or solutions [22].

The model comprises a single-page document consisting of nine boxes, each representing a fundamental element of a business. The BMC is split into two sections: one emphasises the customer or the market (external factors beyond organisational control) and one focuses on the business (internal factors primarily within the

organisational control). This is tied with the value propositions, highlighting the value exchange between business and customer. The nine central elements are:

1. Customer segments: The different groups of people or organisations that a business aims to reach and serve
2. Value propositions: The products or services a business offers its customers
3. Channels: The ways through which a business delivers its products or services to its customers
4. Customer relationships: The types of relationships that a business establishes with its customers
5. Revenue streams: The ways through which a business generates revenue from its customers
6. Key resources: The most important assets that a business needs to operate
7. Key activities: The most important things a business must do to deliver its value proposition
8. Key partnerships: A business must work with other businesses or organisations to deliver its value proposition
9. Cost structure: The costs that a business incurs to operate

To populate this strategic instrument, a co-creation workshop was facilitated during a project meeting in Barcelona in October 2022 with the partners of the mGov4EU project. The approach involved a detailed examination of each section, with ample time allotted for partners to address the pertinent questions associated with each unit. The workshop analysis followed a thematic synthesis approach [23] and gained a common theme for each proposed business model aspect.

For better reference, Table 1 outlines the questions posed by our partners during the workshop.

4 Results

The following section summarises the thematic synthesis for each cluster of aspects within the BMC, i.e. the customer segments and value propositions, the distribution channels and customer relations, the revenue streams and key resources, as well as key activities and cost structures.

4.1 *Customer Segments (Key Partnerships) and Value Propositions*

The principal group or organisations that the mGov4EU solution aims to reach predominantly comprises entities within the public service domain, encompassing both providers and consumers of public services. Within the public service providers' side is a heterogeneous cohort containing local, national, and supranational public

Table 1 Set of supporting inputs during the workshop

Customer segments	Value propositions	Channels	Customer relationships	Revenue streams	Key resources	Key activities	Key partnerships	Cost structure
For whom do we provide a solution?	What customer problem do we solve?	How can we reach out to our “customers”?	What do our customers expect from us? Relationships are established through channels	You must ask yourself, for what value is each customer segment genuinely willing to pay?	What kind of resources do we need for our solution/project?	How do we plan to fulfill our value proposition? What key activities must we conduct after our project ends to sustain the solution?	The key partners are entities that might/must be involved in our project/specific solution without whom our solution doesn't have a purpose	What are the most important costs inherent in our business model?
Who are our most important customers?	Why does our project/solution matter?	How do we reach our customers (e.g. EC, public administrations, businesses)	Examples and types of relationships: transactional (on an occasional basis), personal assistance (customer representative), self-service (no help)	How would they prefer to pay?	Intellectual (brand patents, copyrights), human resources for maintenance, financial resources, data inputs	These activities include research development, marketing, patenting, selling, updating, and maintenance		Which key resources are most expensive?
Who do you think will use/buy our solution (eSignature, eID Wallet, etc.)?				How much does each revenue stream contribute to overall revenues in percentages of the total?				Which key activities are most expensive?

administrations alongside private sector enterprises, each delineated by distinct responsibilities and requirements. Particularly noteworthy is the imperative faced by public service providers who embark on the digitisation of their procedures. This transformative process needs the integration of electronic identification (eID) solutions, with such solutions commonly sourced from central governmental authorities or endorsed by supranational institutions, notably directorates engaged in proposing a unified solution (such as DG DIGIT, DG CNECT, DG GROW). Depending on Member States' (MS) public administration organisational structure and culture, providers may extend to private sector organisations that offer public services and operate transnationally within the European Union (EU).

From the public service consumer perspective in digital governmental interactions, the stakeholders are diverse, comprising public administrations, businesses, and citizens. From the standpoint of consumers engaged in digital governmental interactions, the stakeholder landscape is characterised by digital government service relationships, including public administrations, businesses, and citizens. The efficacy of mGov4EU solutions in meeting the needs of these diverse stakeholders hinges on the strategic alignment of the sustainability and governance paradigms relevant within the mobile government domain.

The mGov4EU project offers a solution to target users that presents a range of essential values that can enhance the primary missions of the target organisations. The project partners have envisaged values promoting digital democracy and digital sovereignty, thereby increasing EU values and benefiting citizens' and public administration's efficiency and effectiveness. Digital democracy encompasses the values of trust, authenticity, and security. In the case of Internet voting use, the project demonstrates that voting can be carried out across borders with a higher level of security and trust, including the main parts of electronic authentication and identification. In addition, digital sovereignty over data empowers citizens and public administrations to control data exchange through various mechanisms, including consent forms and user acceptance. Moreover, with the mobile-first approach, citizens benefit from the ease of use and user experience. The mGov4EU solution represents the first integrated eID/SDG mobile-friendly solution, offering citizens an increase in public service consumption efficiency. For public administrations, the solution is expected to increase efficiency, efficacy, and effectiveness in exchanging data and documents across borders.

Furthermore, the mGov4EU solution enhances EU values by increasing possibilities of digital access to public services across borders, following and supporting policy developments in the EU. Respective MSs and European Commission (EC) directorates may reuse the building blocks developed by mGov4EU. Specifically, with the policy development of the new European Digital Identity Wallet (EUDI) proposed by the EC, the mGov4EU artefacts may already be reused. Thus, the mGov4EU advantage lies in its novel and innovative approach, developed for the first time in the EU, and may help existing developments in the EU policy cycle.

4.2 Channels and Customer Relationships

The partners presented a variety of ways to promote the mGov4EU solution for the channels section of the BMC, approaches on communicating the solution to the target groups, primarily public administrations and the private sector.

First, it includes presentations at events such as, inter-alia, scientific and technical conferences and startup competitions. Second, existing contacts from partners' networks could be utilised to reach out to respective countries' public administrations. Third is reaching out to the general public by promoting the solution through public and social media, word of mouth, and general dissemination (newsletters). Last, the partners would reach out through scientific publications in respective journals and conference proceedings to the specific public in the technical and knowledgeable field.

For the customer relationships, the focus of the mGov4EU project would be based on the transactional, dedicated personal assistance and self-service type of relationships. The transactional model includes individual interactions without a long-term commitment; this includes using the mGov4EU solutions, primarily based on the customer. However, in case of need and unforeseen issues, the partners would have dedicated personal assistance to help overcome issues. Last, the self-service approach will also be used as an extensive knowledge base, frequently asked questions (FAQs), and tutorials that may allow users to address the issues, learn new features, and make the most of the mGov4EU solution without requesting personal assistance.

4.3 Revenue Streams and Key Resources

The mGov4EU project is driven by a non-profit agenda, primarily supported by public funding. Additional revenue avenues may be explored by providing consultancy services and licensing for commercial purposes. The partners identified several important approaches towards revenue streams based on the types of partners involved in the project. While not considering licensing a favourable option, the legal partner deemed consultancy fees for integration and customisation more viable. Technical partners have delineated revenue streams encompassing both non-profit and profit options. While the solution remains proprietary, certain modules of mGov4EU could be made an open source. Customers remit payments per service utilised, independent of the code license. Partners involved in technical aspects have also indicated a lack of specific revenue interest in the non-profit budget context. Alternative revenue streams under consideration include consulting, support, operational contracts, and indirect sources such as added value through extended use by private service providers. Profitable prospects include the solution as a foundational enabler for future endeavours, fostering synergies with related activities, attracting additional clients, and securing public funding. Partners not

involved in the technical aspects advocate for an open-source model for public administration and citizens, coupled with licensing for commercial entities. They emphasise customer payment for utilised services. Additional revenue streams include tailored solutions with supplemental license fees, dual licensing, support services for foundational components, base funding from the EC, customer subscription fees, and, notably, charges based on usage.

The successful execution of this project business model necessitates both human and financial capital. Licensing is a pivotal resource; however, the partners have also underscored the importance of legality, data, technical considerations, research and development (R&D) funding, maintenance and marketing, and intellectual resources within their respective business models. The legal partner indicated that a dedicated budget for producing a high-quality demonstration video (akin to the Once-Only Principle Project [24]) would be instrumental in facilitating active promotion. Furthermore, partners proposed that an ownership strategy and licensing arrangements are integral resources. The partners should reach a consensus on a unified strategy if they decide to proceed. From the viewpoint of the technical partners, human and financial resources are indispensable for carrying out the key activities outlined earlier. Expertise in technical and legal domains is also a prerequisite. Partners have additionally highlighted the need for more researchers and developers as key resources and the acquisition of grants for R&D. Mirroring the sentiments of the technical partners, the non-technical partners have cited financial and human resources as necessary for maintenance, support, marketing, and development. They perceive the key resources as contributions to standards and sustainability through new research grants or licensed products at no cost. Data and trust also play crucial roles as key resources.

4.4 Key Activities and Cost Structure

Key activities involved in the business model of the solution are the following. Primarily, the principal activities encompass human resources and R&D activities. Engaging the target demographic facilitates the integration of innovative solutions and ideas, thereby ensuring continuous performance enhancement, maintenance, and support for the updates that need to be provided for the mGov4EU solution. The legal partner indicated the provision of an out-of-the-box demonstration promotion of the resolution and consistent support as their primary activities. The majority of the technical partners identified technical maintenance, development, and marketing activities aimed at disseminating the solution as their main activities. Additional activities include research on usability and privacy aspects and continuous customer support. One technical partner emphasised the importance of communicating with relevant key partners and testing and piloting modules beyond the mGov4EU pilot scope to gain confidence in its broader applicability. Non-technical partners have listed activities such as code stewardship, incorporating the solutions and knowledge into subsequent projects, and publishing the results and repositories. Other activities

include R&D, stakeholder engagement, organising and attending fairs, and marketing. Maintenance and support, marketing and information campaigns, continuous improvements and developments, and patenting were also key activities.

The allocation of resources, both human and infrastructural, constitutes a significant portion of the overall expenditure. This is followed by costs associated with marketing and the organisation of events and workshops. Expenditures for R&D, patenting, and legal consultancy will span several years. Lean cost structure is achieved through establishing an expert network and maintaining an online presence for a few years. The need for a Web site and promotional activities is anticipated to persist for a similar duration. The cost structures identified encompass infrastructure, maintenance, marketing, and human resources. This includes developers and senior architects with knowledge of the national/EU environment (eIDAS, SDG), advertising, and support for additional R&D. One technical partner suggested that organising workshops and fares could incur in high costs. By contrast, fare tickets could range from low to medium expenses. Cloud infrastructure is expected to incur medium charges, with human resources being the costliest. In comparison, non-technical partners highlighted human resources, patenting, representation costs (e.g. symposia, events), and technical hardware costs. Additional charges include maintaining an online presence, training on how to use or integrate the building blocks, sandboxing services for demonstrations, and legal consultancy. It was also noted that costs are covered up to a certain technology readiness (TR) level, and as the TR level increases, additional revenue sources will be required.

5 Reflection

This section aims to reflect on a selection of challenges within the respective aspects of the BMC and the associated workshop results to raise awareness for similar development activities and projects and to share the lessons learned.

1. Customer Segments and Value Propositions

The mGov4EU project targets a broad spectrum of public service stakeholders, including providers and consumers. This dual focus on public service providers (local, national, supranational administrations, and private sector enterprises) and consumers (public administrations, businesses, and citizens) demonstrates a comprehensive approach to digital governance.

While the project ambitiously addresses a wide range of stakeholders, the challenge lies in catering to these different groups' diverse needs and technical capabilities. Sustainable, digital solutions are required to be accessible and user-friendly for all, especially for citizens who might not be technologically adept. This challenge is further amplified, as building blocks and the underlying technology need to be compatible with existing infrastructure and service ecosystems, which consequently can limit design decisions and would occasionally require a fundamental redesign of either the digital building block or the service ecosystem at its core.

2. Channels and Customer Relationships

The varied communication strategies, including presentations, media promotion, and scientific publications, indicate a thorough approach to outreach and engagement. The focus on transactional, personal assistance and self-service in customer relationships is commendable.

However, relying on transactional relationships might not foster long-term user engagement or loyalty. Implementing strategies must incorporate the promotion of ongoing engagement and feedback loops with its users. Again, this requires a high level of alignment, as direct interaction without an intermediary might be limited depending on who the users are, e.g. public administration vs. citizens.

3. Revenue Streams and Key Resources

The non-profit nature of the project, supported by public funding and supplemented by consultancy services and licensing, reflects a commitment to public service. The consideration of open-source components is a positive step towards transparency and collaboration.

The challenge will be maintaining financial sustainability and balancing the need for revenue generation with the project's non-profit ethos. Additionally, reliance on public funding can be precarious, requiring the exploration of more diverse and stable revenue streams. However, the dual use of developed technologies, i.e. in the public and the private sector, might be limited due to the high degree of specialisation of the provided service or building block. Furthermore, this dual-use strategy needs to be embraced from the very beginning, as changing such fundamental aspects later might introduce insurmountable obstacles.

4. Key Activities and Cost Structure

The emphasis on R&D, technical maintenance, marketing, and legal considerations showcases a well-rounded approach to project development. The allocation of resources to these activities is critical for the project's success.

There is a risk of resource allocation being spread too thin across the various building blocks to be sustained. The cost structure also raises concerns about long-term financial sustainability, especially given the reliance on external funding.

6 Conclusions

The mGov4EU project represents a significant stride towards realising a digitally empowered European Union, where cross-border government services are accessible, efficient, and user-centric. This initiative, as explored in this chapter, aligns with the broader goals of eIDAS and SDG, fostering an ecosystem that is not only technologically advanced but also secure and trustworthy.

The project's emphasis on integrating digital wallet approaches and developing technological building blocks has contributed significantly towards the future of digital governance and service provision. By focusing on mobile platforms, mGov4EU addresses a critical aspect of modern communication and service delivery, acknowledging the ubiquitous nature of mobile technology in everyday life. This approach ensures that government services are not only more accessible

but also aligned with the contemporary user's expectations of convenience and immediacy.

Throughout the various stages of development and implementation, the project has demonstrated a keen understanding of the complex landscape of public service provision in the EU. The heterogeneity of stakeholders, including public administrations, businesses, and citizens, presents unique challenges in terms of requirements, expectations, and technical capabilities. The mGov4EU project has addressed these challenges, showcasing a model of inclusiveness and adaptability. One strong aspect, in particular, is the project's commitment to digital democracy and sovereignty, which resonates deeply with the core values of the European Union. By emphasising principles like trust, security, and data empowerment, mGov4EU reinforces the democratic foundations upon which the EU is built.

The project's business model approach, which encompasses diverse revenue streams and resource allocation strategies, reflects the need for a nuanced understanding of the financial landscape. The non-profit nature, supplemented by consultancy services and licensing, balances public service commitment and financial viability. Moreover, the open-source components of the project promote transparency, collaboration, and innovation, setting a precedent for future initiatives in the public sector.

However, as with any innovative venture, the mGov4EU project faces its set of challenges. While a strength, the diversity of the stakeholder base also poses the risk of diluting the focus and impact. Financial sustainability remains a concern, especially given the reliance on external funding sources. Furthermore, the technological landscape is rapidly evolving, and future trustees of the project results need to carefully but swiftly follow these developments and act upon them.

References

1. Eibl, G., Lampoltshammer, T., Temple, L.: Towards identifying factors influencing mobile government adoption: an exploratory literature review. *eJ eDemocr Open Gov.* **14**, 1–18 (2022)
2. Eibl, G., Temple, L., Sellung, R., Dedovic, S., Alishani, A., Schmidt, C.: Towards a transdisciplinary evaluation framework for mobile cross-border government services (2022). doi:https://doi.org/10.1007/978-3-031-15086-9_35
3. Schmidt, C., Krimmer, R., Lampoltshammer, J., T.: "When need becomes necessity"—The single digital gateway regulation and the once-only principle from a European point of view. *Open Identity Summit.* **2021** (2021)
4. Kaplan, S.: Business models aren't just for business. *Harv. Bus. Rev.* **19** (2011)
5. Vasilescu, L.: Accessing finance for innovative EU SMES key drivers and challenges. *Econ. Rev. J Econ. Bus.* **12**, 35–47 (2014)
6. Eniola, A.A., Entebang, H.: SME firm performance-financial innovation and challenges. *Procedia Soc. Behav. Sci.* **195**, 334–342 (2015)
7. Eggers, F.: Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *J. Bus. Res.* **116**, 199–208 (2020)
8. Bellman, R., Clark, C.E., Malcolm, D.G., Craft, C.J., Ricciardi, F.M.: On the construction of a multi-stage, multi-person business game. *Oper. Res.* **5**, 469–503 (1957). <https://doi.org/10.1287/opre.5.4.469>

9. Geissdoerfer, M., Savaget, P., Evans, S.: The Cambridge business model innovation process. *Proc. Manuf.* **8**, 262–269 (2017)
10. Osterwalder, A., Pigneur, Y., Tucci, C.L.: Clarifying business models: origins, present, and future of the concept. *Communications of the association for. Inf. Syst.* **16**, 1 (2005)
11. DaSilva, C.M., Trkman, P.: Business model: what it is and what it is not. *Long Range Plan.* **47**, 379–389 (2014)
12. Wirtz, B.W.: The business model concept. In: Wirtz, B.W. (ed.) *Business model management: design - process - instruments*, pp. 7–17. Springer International Publishing, Cham (2020). https://doi.org/10.1007/978-3-030-48017-2_2
13. Eriksson, H.E., Penker, M.: *Business modeling with UML*. New York. 12 (2000)
14. Al-Debi, M.M., El-Haddadeh, R., Avison, D.: Defining the business model in the new world of digital business. *AMCIS 2008 proceedings*. 300 (2008)
15. Windrum, P.: Innovation and entrepreneurship in public services. *Innovation in public sector services: Entrepreneurship, creativity and management*. 3–20 (2008)
16. Bernier, L., Hafsi, T., Deschamps, C.: Environmental determinants of public sector innovation: a study of innovation awards in Canada. *Public Manag. Rev.* **17**, 834–856 (2015). <https://doi.org/10.1080/14719037.2013.867066>
17. Wirtz, B.W., Weyerer, J.C., Kohler, J.: Public business model management: a literature review-based integrated framework. *IJPSPM.* **11**, 1 (2023). <https://doi.org/10.1504/IJPSPM.2023.128533>
18. Lampoltshammer, T.J., Albrecht, V., Raith, C.: Teaching digital sustainability in higher education from a transdisciplinary perspective. *Sustain. For.* **13**, 12039 (2021)
19. Ricciardi, F., Zardini, A., Rossignoli, C.: Organizational dynamism and adaptive business model innovation: the triple paradox configuration. *J. Bus. Res.* **69**, 5487–5493 (2016)
20. Talbot, C.: Paradoxes and prospects of ‘public value’. *Public Money Manag.* **31**, 27–34 (2011). <https://doi.org/10.1080/09540962.2011.545544>
21. Wirtz, B.W., Kubin, P.R.M., Weyerer, J.C.: Business model innovation in the public sector: an integrative framework. *Public Manag. Rev.* **25**, 340–375 (2023). <https://doi.org/10.1080/14719037.2021.1972703>
22. Osterwalder, A., Pigneur, Y.: Designing business models and similar strategic objects: the contribution of IS. *J. Assoc. Inf. Syst.* **14**, 237 (2013)
23. Creswell, J.W.: *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson Higher Ed. (2020)
24. Lampoltshammer, T.J., John, K., Helger, P., Piswanger, C.-M.: Connectathons-a sustainable path towards development in European large-scale pilots. In: *Proceedings of ongoing research, practitioners, posters, workshops, and projects of the international conference EGOV-CeDEM-ePart*. pp. 207–214 (2019)

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