

Government as a platform for efficient and safe administrative processes in university management – a case study on administrative innovation at RheinMain University of Applied Sciences

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Abstract

This study investigates the relevance of platform-based models for universities as a distinct case within public administration. It highlights how specific organizational characteristics—such as institutional autonomy, complexity, and multi-stakeholder governance—present unique challenges for university management. The research explores to what extent platform models can help address these challenges while ensuring legal compliance and secure system architecture. The platform economy is described in the literature as a modular ecosystem that includes a platform core (e.g., digital infrastructure, authentication) and a periphery (e.g., external developers, enterprises). In the context of administration, the "Government as a Platform" model is often used as a reference, which emphasizes the opening of state IT systems and the provision of standardized interfaces to external actors. For the analysis of the security law aspects of the platform economy in the administration of university management tasks, an interdisciplinary approach is chosen that integrates both legal and information technology perspectives. The methodology combines literature review, case study analysis (university management HSRM) and the comparison of theoretical models from platform research. The application of the platform economy approach to administrative processes offers considerable potential for increasing efficiency and promoting innovation. At the same time, security requirements must be systematically integrated into the platform architecture. The findings provide higher education leaders and public sector IT strategists with a framework for adopting platform models to meet governance, innovation, and security demands in university administration. The analysis shows that successful implementation requires a combination of technical standardization, clear governance structures, and continuous risk monitoring.

Keywords: higher education administration, public sector digitalization, platform governance.

1. Introduction

Universities, as complex public institutions, face increasing demands to modernize their administrative processes while ensuring security and compliance with legal frameworks. The concept of "Government as a Platform" offers a promising approach to enhancing efficiency and transparency through digital collaboration tools. This case study examines the implementation of a digital platform at RheinMain University of Applied Sciences, highlighting its potential to streamline communication, knowledge management, and administrative coordination. It further addresses the challenges of integrating such platforms within the unique governance structures and security requirements of higher education institutions.

2. Administrative characteristics and challenges in higher education

2.1. Universities as a special case of public administration

Universities are unique entities within the public sector, characterized by a distinctive blend of bureaucracy and academic self-administration. As [1] asserts, these systems are understood as social entities that aim to create and transmit knowledge. The inherent complexity and ambiguity of universities is reflected in their distinct structures. They are typically divided into three distinct components: administration, research, and teaching. Each of these components operates according to a distinct functional logic. The administration is characterized by its high degree of formalization and organization, with a distinct allocation of tasks and procedures for individual units, grounded in legal and regulatory frameworks. Consequently, the administration is bound exclusively by instructions, and the university management has the prerogative to overrule individual employee interests by decree.

Research and teaching are inextricably linked, as they represent the fundamental pillars of academic work and are central to fulfilling the university's core mission. The generation of knowledge serves as the unifying element that underpins this relationship [2]. Both areas show characteristics of interest-based organizations: individuals collaborate based on the recognition that their individual interests are more effectively pursued collectively. These structures tend to form flexible and cooperative arrangements and display a high degree of self-organization. The organization's membership structure is closely aligned with individual self-interest. Consequently, both research and teaching are typically characterized by a low degree of formalization and minimal hierarchical structures. A prevailing tendency among these professionals is a stronger identification with their academic profession and professional community than with their employing institutions, as documented by scholars such as [3] and [1].

However, the extent to which these domains can be organized by university management varies. Teaching, in particular, allows for structured approaches along temporal, spatial, and content-related dimensions. These aspects are more readily subject to statistical monitoring and evaluation. Regulatory frameworks, such as study regulations and state-level provisions contribute to a higher degree of formalization in teaching than in research. Moreover, universities bear greater institutional responsibility for the qualitative and quantitative development of study programs than for research [1].

Research is the least formalized area and exhibits pronounced self-organization, i.e., it tends to follow a bottom-up orientation, like teaching. Given that research projects are often funded by third parties, researchers are accountable to external funding organizations. The associated dependence on resources signifies that universities are increasingly engaging with external stakeholders, such as third-party funding providers, accreditation agencies, and university councils. Consequently, new requirements for control and legitimation emerge [3] [4]. Given these circumstances, the capacity of university management to exert control or disciplinary influence remains limited [1].

The functional logics of the three areas therefore differ fundamentally. Their relationship is often marked by a significant degree of separation. From an organizational perspective,

they are usually only loosely coupled in order to minimize tensions arising from their different functional logics [1] [5]. Consequently, a central responsibility of university management is to balance between the autonomy of teaching and research on the one hand, and the requirements of rule-based institutional management on the other. Moreover, leadership is responsible for articulating organizational goals and fostering the development of a shared institutional identity that integrates members across all functional areas [6].

The university's organizational structure, as previously outlined, is also reflected in its decision-making processes. Universities are typically organized in a highly participatory manner that fosters active involvement of various groups, including administrators, professors and students through numerous committees. This participatory structure leads to a complex and diverse flow of information, which requires transparent communication processes on the part of the university management. It is essential that all relevant stakeholder groups receive the necessary information, decisions and results of discussions [7] [5].

In addition, external stakeholders are involved in governance structures, for example via the university councils. This implies several requirements for university leadership, which must operate both as an administrative authority and as a communicative interface between internal and external stakeholders. The following section will explore the role of university management in more detail, focusing on associated challenges and expectations.

2.2. University management as a special form of administrative management

The previous explanations have shown that university management acts as a central coordinating unit within a highly decentralized and participatory organization [8] [5]. This dual organizational logic – combining academic self-governance with state responsibility for resources – is also reflected in the formal structure of university management: the president, elected by the academic self-administration, serves as the academic head of the institution. In contrast, the chancellor, appointed by the relevant ministry, is responsible for administration, finance, and personnel matters [8]. The various higher education laws of the federal states usually foresee a collegial governance model, typically comprising several vice presidents who have either content-related or administrative responsibilities (e.g., studies and teaching, research, digitalization, equality, etc.). Following the departmental principle, these roles come with clearly defined responsibilities for specific areas of institutional development, as outlined in the university's rules of procedure [8]. However, terms of office within the President's Council vary. While president and chancellor usually serve six-year terms, vice presidents are typically appointed for shorter periods of three to four years. This results in comparatively high turnover rates within the university's senior leadership team.

Over the past years, universities have also faced significant challenges. The academization of society means that more and more young people pursue higher education after graduating from high school. This has led to a significant increase in student enrollment, especially during the 2010s, which in turn led to an increase in professorial positions and a rapid expansion of the university organization as a whole [7]. In addition, the scope of university activities has expanded considerably in recent years. Societal transformations

have given rise to new thematic fields, which are increasingly reflected in the internal structures of universities. Topics such as sustainability, digitalization, and diversity have, for instance, been integrated at the presidential level in many institutions. As a result, the portfolios and responsibilities of individual members of the President's Council have broadened accordingly [7]. Moreover, there is a stronger focus on research, particularly at universities of applied sciences, which has led to a significant expansion of research infrastructure and academic staff.

These developments also required an increase in the number of administrators at the university. University management departments now employ many advisors to support President's Council members. Additionally, dedicated staff positions and central administrative units have been established to systematically address strategic issues such as quality management, research funding, academic appointments, and career services [8] [7].

However, funding policies often do not adequately support these developments. Many universities face financial constraints that vary by federal state. The funds provided are often earmarked, which considerably restricts universities' flexibility. Consequently, central measures in research and teaching are increasingly dependent on third-party funding. This development highlights a fundamental issue with exclusively state-funded universities designed for mass operation. As [3] notes, the funding crisis has also led to a loss of confidence in universities' performance. In response, state funding has been increasingly allocated based on quantifiable performance indicators, resulting in a paradigm shift toward output-oriented management and competition.

The growing complexity of higher education structures, participatory committee systems, and dynamic personnel constellations within university management require a management approach focused on coordination, communication, and knowledge retention [5] [9]. University management operates within the tension field of state regulation, academic self-administration, and strategic development ambitions, which demands both organizational management competence and communicative connectivity [8]. Additionally, growing external pressure for accountability and legitimacy — such as funding tied to target agreements and performance indicators [3] — forces university management to act in a results-oriented, transparent, and participatory manner. In light of the complexity and dynamism of decision-making processes, new demands are emerging for internal communication processes and knowledge management. Traditional forms of communication and documentation are increasingly inadequate. Instead, there is a growing need for systems that engage diverse stakeholders, ensure consistent information flows, and minimize coordination efforts amid high workloads. Platform-based structures offer opportunities to streamline information management, centralize committee work, and facilitate the sustainable retention of institutional knowledge.

3. Platform economy and government IT infrastructures

3.1. Theoretical models

The platform economy is described in the literature as a modular ecosystem that includes a platform core (e.g., digital infrastructure, authentication) and a periphery (e.g., external developers, enterprises) [10].

[11] define digital platform ecosystems as structures in which platform operators apply control mechanisms to enable value creation between partners and consumers.

In the context of administration, the "Government as a Platform" model [12] is frequently cited as a reference, which emphasizes the opening of state IT systems and the provision of standardized interfaces to external actors.

Another relevant model is the governance model of the platform economy, which focuses on regulatory and security-related aspects [5]. Policy dimensions such as data protection, access rights and interoperability are systematically analyzed.

Accordingly, a comparative overview of the models can be differentiated according to focus and security measures:

Table 1. Comparison of platform models

| Model | Focus | Relevance for Security Law |
|--------------------------|--------------------------|-----------------------------------|
| Modular platform economy | Technical architecture | Interfaces, peripheral protection |
| Government as a Platform | Opening, standardization | Authentication, data sovereignty |
| Governance-Model | Regulation, Policy | Privacy, Compliance, Control |

Source: Own compilation

3.2. Analysis of security aspects

However, the introduction of digital platforms creates new security challenges, especially with regard to data protection, IT security and the integrity of government processes [13].

3.2.1. Data protection and data sovereignty

The central challenge with platform solutions in administration is the protection of personal data. The platform must be designed to comply with the requirements of the GDPR and ensure secure, traceable processing. The adoption of single sign-on solutions and digital identities (e.g., citizen ID) requires a robust authentication infrastructure and clear rules on data processing [13].

3.2.2. IT security and integrity

The modular structure of platforms increases the attack surface for cyber threats. Interfaces to external actors (e.g. software providers, companies) must be secured by technical and organizational measures to prevent manipulation and unauthorized access [13]. The governance of the platform must define clear responsibilities and control mechanisms [14].

3.2.3. Interoperability and compliance

The federal structure of the German administration places special demands on the interoperability of the platforms. Different authorities must be able to integrate their processes securely and in a legally compliant manner without jeopardizing the integrity of the overall platform [15]. The harmonization of standards and the introduction of overarching service accounts are central prerequisites for this.

3.2.4. Synthesis and outlook

The application of the platform economy approach to administrative processes offers considerable potential for increasing efficiency and promoting innovation. At the same time, security requirements must be systematically integrated into the platform architecture. The analysis shows that successful implementation requires a combination of technical standardization, clear governance structures, and continuous risk monitoring [13] [14].

4. Research design and methodology

The transformation of public administrative processes through digital platforms is a central topic of administrative modernization. The platform economy offers the opportunity to make processes more efficient, transparent and user-friendly. However, the introduction of such platforms is also associated with considerable organizational, team cultural and security challenges, which must be systematically and scientifically investigated [16] [15]

For the analysis of the security law aspects in the context of the platform economy in public administration, a multi-stage approach was chosen that combines qualitative and quantitative methods. The aim is to identify and evaluate both the legal framework and the practical challenges and risks.

4.1. Literature-based analysis

First, a systematic literature review was carried out on existing platform models in public administration, the underlying legal requirements (e.g. data protection, IT security, authentication) and the experiences from a reference study in Germany and Europe [17]. The research included keywords of the transformation of public administrations, data-driven government, data laking in administrative enforcement and smart government.

4.2. Expert interviews

In order to validate and supplement the literature results, guideline-based expert interviews were conducted with representatives from administration, IT security, data protection and law at the RheinMain University of Applied Sciences in the period between March and April. The interview partners were selected according to the principle of purposive sampling in order to reflect as many different perspectives as possible (university strategy, IT administration, department management, examinations, study quality development, teaching didactics).

4.3. Legal risk analysis

The findings were systematically evaluated as part of a legal risk analysis. In particular, the following questions were examined:

1. What legal requirements (e.g. GDPR, IT Security Act) must be observed when developing and operating management platforms [18]?
2. What liability and responsibility issues arise in the case of federal platform structures [15]?

4.4. Synthesis and recommendations for action

Finally, the results of the individual analysis steps were brought together and prepared in the form of recommendations for action for authorities, legislators and IT service providers. Particular attention was paid to the development of best practices for the secure and compliant design of platforms in the public sector [17].

5. Case study

5.1. University profile and governance structure

Hochschule RheinMain is a university of applied sciences, located in Wiesbaden and Rüsselsheim in the Rhine-Main metropolitan region. RheinMain University of Applied Sciences offers more than 70 programs across five faculties: Architecture and Civil Engineering, Design Computer Science Media, Engineering, Social Work, Wiesbaden Business School. Approximately 12,000 students are enrolled at the university's multiple campuses.

The university is governed by the President's Council, chaired by the President and supported by two Vice-Presidents (for Research, Entrepreneurship and Science Communication; and for Education and Sustainability) and the Chancellor (responsible for Finance, IT, and Administration). The President's Council is relatively new in its composition and is supported by advisors, a unit for policy development, and an administrative office that also coordinates the work of internal committees.

The executive leadership oversees nine departments, three central service units and three staff units. Responsibilities are divided among board members based on their portfolios, which may change with new terms—as was the case in the recent election, when the sustainability and internationalization portfolios were restructured.

5.2 Strategic challenges and need for action

In recent years, Hochschule RheinMain has faced a noticeable decline in student enrollment, which directly impacts public funding. This trend prompted the university to place greater emphasis on internationalization and strategic partnerships to attract a more diverse student body. As a result, there is a growing need for more internationally oriented administrative processes and structural support for international students.

Additionally, limited financial resources have led to an increased reliance on third-party, project-based funding, such as state programmes to support innovative teaching formats or initiatives from external foundations. These externally funded projects typically demand high levels of coordination across departments and administrative units.

In general, decision-making processes are complex and involve certain actors in both departments and committees (e.g. the Senate). Efficient communication and collaboration tools are essential but have been limited due to strict software regulations and the operational workload. Until recently, the university primarily relied on Microsoft SharePoint and local drives with restricted access, making project tracking and knowledge sharing highly dependent on personal communication.

5.3. Implementing a digital collaboration platform

To address the identified needs and challenges in the areas of knowledge management and cross-departmental coordination, the university management decided to pilot a digital collaboration platform. The primary goal was to assess whether such a platform could improve communication and knowledge sharing between the administration and academic departments.

The selection criteria included:

- A built-in expert community to promote applied, practice-oriented collaboration (aligned with the mission of Universities of Applied Sciences),
- GDPR compliance (pre-approved by the State Data Protection Officer of Hesse),
- Future scalability for collaboration with other universities of applied sciences (HAWs) in the region.

The university selected an all-in-one communication platform that combines several key functionalities:

- Collaborative Workspaces that support topic-based and cross-functional dialogue
- Project Management Tools that allow teams to set up projects and monitor their progress collaboratively
- Shared Document Editing for the co-authoring and centralized access to documents
- Knowledge Repositories including topic-specific wikis and archives

This multi-feature setup allows users to quickly gain an overview of complex, multi-stakeholder topics and engage in targeted communication. As a result, the platform has become a valuable tool for managing the increasing volume of information and coordination tasks.

5.4. Benefits, first use cases, and future outlook

Currently, the platform is used across various workspaces where administrative departments are linked to their respective presidential board members. Department heads from different divisions can now collectively track the progress of key initiatives and ongoing projects. The platform is also used by the university's President's Council to share updates on committee decisions and current matters, helping to reduce the need for frequent one-on-one check-ins.

By centralizing information, improving transparency, and enabling structured collaboration, the platform is already contributing to more efficient internal workflows. In the long term, the university plans to evaluate the pilot phase and explore broader implementation, including inter-university collaboration and deeper integration into the university's digital strategy.

The platform has simplified the coordination of ongoing projects and enabled the creation of shared knowledge bases—especially valuable when working across a wide range of topics with multiple stakeholders. For the first time, it is possible to define and formalize internal workflows that had previously existed only informally, such as internal application processes or the annual teaching award procedures.

Collaboration on large-scale projects such as strategic performance agreements has also become more efficient. A broad range of contributors can now work on shared documents simultaneously, track progress, add comments, and raise questions directly within the platform—eliminating the need for time-consuming coordination meetings and allowing for continuous progress in real time.

In the future, the university aims to expand the platform's use for committee work. This includes collecting agenda items, sharing meeting minutes, and uploading relevant documents – especially helpful in bodies with long intervals between sessions, where continuity and context can otherwise be lost between sessions.

6. Conclusion

The case of RheinMain University of Applied Sciences demonstrates that adopting a platform-based approach can significantly improve administrative efficiency and foster collaboration within universities. By centralizing communication and documentation, the digital platform supports transparent decision-making and improves institutional knowledge retention. While data protection and IT security remain essential considerations, the public sector in Hesse already operates under strict regulatory frameworks that guide platform implementation. However, the platform-based approach offers more potential for communication and collaboration processes at universities. The President's Council envisions to scale the platform across the entire university to support large-scale, multi-stakeholder projects. This would not only enhance streamlined internal coordination, but also open communication channels to more actively involve students in institutional development processes.

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