

Challenges and Opportunities of Digitalizing ASN Governance in State Islamic Higher Education Institutions in Indonesia

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Article Information:

Received 05 16, 2026

Revised 06 28, 2026

Accepted 07 26, 2026

Keywords: Governance Digitalization; ASN; PTKIN; ASN Management; Digital Transformation

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Abstract

The digitalization of governance is an urgent necessity for improving efficiency, transparency, and accountability in the management of the State Civil Apparatus (Aparatur Sipil Negara, ASN), including within State Islamic Higher Education Institutions (Perguruan Tinggi Keagamaan Islam Negeri, PTKIN) in Indonesia. Digital transformation constitutes both a challenge and an opportunity in efforts to improve the ASN management system, particularly in supporting the implementation of the Ministry of Religious Affairs' eight priority programs. This article discusses several challenges faced by PTKIN in implementing the digitalization of ASN governance, including infrastructure limitations, organizational culture resistance, and limited human resource competencies. At the same time, digitalization creates broad opportunities through technological integration, improved services, and data-based administrative efficiency. Using a descriptive qualitative approach and a literature review, this article offers strategic solutions to accelerate the digitalization of ASN governance in PTKIN, including strengthening ASN digital capacity, reinforcing regulations, and developing integrated systems based on institutional needs.

How to cite: Andriani, I., & Rodin, R. (2026). Challenges and opportunities of digitalizing ASN governance in state Islamic higher education institutions in Indonesia. *ISNUJOU - Journal of Education*, 1(2), 117-135.

INTRODUCTION

The rapid development of digital technology has brought significant changes to various sectors of life, including organizational governance in both the private and public sectors. In the context of government, digitalization has become an important instrument for realizing a modern, efficient, transparent, and accountable bureaucracy (Muhammad Jafar, 2024). The State Civil Apparatus (Aparatur Sipil Negara, ASN), as the main actor in the bureaucratic system, is required to adapt to these technological dynamics. This requirement applies not only to central and local government agencies, but also to religious higher education institutions under the Ministry of Religious Affairs, such as State Islamic Higher Education Institutions (Perguruan Tinggi Keagamaan Islam Negeri, PTKIN).

As higher education institutions that play a strategic role in producing excellent human resources in Islamic studies and broader scientific fields, PTKIN face a dual challenge. On the one hand, PTKIN must continue to preserve and develop Islamic values in their education systems. On the other hand, they must also transform in line with bureaucratic modernization through the implementation of digital technology. One important step in this transformation is the digitalization of ASN governance within PTKIN (As'ad, 2021).

The Ministry of Religious Affairs, as the supervisory institution for PTKIN, has initiated eight priority programs as part of bureaucratic reform efforts, one of which is governance digitalization (Redaksi, 2025). The purpose of this program is to create a personnel management system that is more integrated, faster, more effective, and more accountable in providing services to the public and in improving the professionalism of ASN themselves.

Nevertheless, although the policy direction is clear, the implementation of ASN governance digitalization within PTKIN still faces various challenges. These include limited information technology infrastructure, particularly in PTKIN located in areas with limited internet access and digital facilities. In addition, low digital literacy among some ASN also constitutes a significant obstacle to the implementation of digital technology. Another recurring challenge is organizational culture resistance, as existing work patterns often remain conventional and are insufficiently adaptive to digital change (Redaksi, 2024).

On the other hand, the application of digitalization in ASN governance also creates numerous opportunities. Through a digital-based personnel system, PTKIN can accelerate administrative services, improve the accuracy and transparency of ASN data, and facilitate employee performance monitoring and evaluation. This potential increase in bureaucratic efficiency is highly consistent with the national bureaucratic reform vision promoted by the government.

Several previous studies support the importance of digitalization in ASN governance. For example, Sukorina's (2025) study, "Good Governance in the Digital Era: A Case Study of E-Government Implementation in Indonesia," shows that governance digitalization through e-government contributes positively to improving service quality and ASN work efficiency in government institutions (Sukorina, 2025).

Another study by Fadilah and Marsofiyati (2024), entitled "The Application of Digital Technology in Office Administration," reveals that the implementation of digital systems in human resource management at Islamic higher education institutions accelerates administrative processes and increases transparency, although it continues to face challenges related to infrastructure limitations and the technical skills of human resources (Fadillah & Marsofiyati Marsofiyati, 2024).

Furthermore, research by Muhammad AR et al. (2020), in the study "The Era of the Industrial Revolution 4.0: Challenges and Opportunities for PTKIN in Indonesia," highlights that most PTKIN still experience a gap between digitalization policies and implementation readiness in the field, particularly because of the lack of intensive training for ASN (Muhammad AR, 2020).

These studies provide an important foundation for further examining the digitalization of ASN governance within PTKIN, both in terms of opportunities and challenges. Therefore, this article elaborates on this phenomenon and offers strategic recommendations for optimizing digitalization as an integral part of bureaucratic reform under the Ministry of Religious Affairs.

Accordingly, this article aims to examine in depth the challenges and opportunities involved in implementing ASN governance digitalization within PTKIN in Indonesia. It also formulates several strategic solutions that can be adopted by the Ministry of Religious Affairs and PTKIN to address existing barriers and maximize the benefits of this digital transformation.

LITERATURE REVIEW

1. Governance Digitalization

Governance digitalization is a process of organizational management transformation that utilizes information and communication technology (ICT) in every aspect of institutional management (Manik & Juwono, 2024). Digitalization does not merely refer to the use of hardware and software; rather, it encompasses a paradigm shift in governance oriented toward effectiveness, efficiency, accountability, and transparency. In the era of the Industrial Revolution 4.0 and toward Society 5.0, governance digitalization has become an urgent necessity, particularly for government institutions and educational organizations such as PTKIN.

In the context of ASN management, digitalization has a broad scope. One example is the implementation of Personnel Information Systems (Sistem Informasi Kepegawaian, SIK), which integrate data and information on all employees, ranging from recruitment, competency development, and position placement to transfer and retirement processes. These systems are designed to facilitate human resource management and minimize the risk of human error as well as inefficient bureaucratic practices (Loviana Intan Azzahro, 2023).

In addition, the digitalization of ASN governance also targets administrative services. Administrative processes that previously relied on manual procedures, such as leave applications, promotion proposals, and performance reporting, can now be accessed through online services (Hermawan et al., 2023). The use of web-based and mobile applications enables ASN to carry out various personnel services independently and in real time, without having to go through lengthy and complicated face-to-face procedures.

Moreover, digitalization is also applied to technology-based performance appraisal systems (Putri et al., 2022). One example is the implementation of e-performance applications used to monitor and evaluate the performance achievements of individuals and organizations periodically. These systems provide automatic reporting features and ASN performance data analysis that are directly integrated with incentive policies, awards, and merit-system-based career development.

The benefits of ASN governance digitalization are evident, particularly in creating time and cost efficiency, improving personnel data accuracy, and supporting data-driven decision-making

processes (Waldi et al., 2024). Through an integrated digital system, organizations can respond more quickly to changing needs and organizational dynamics while also improving service satisfaction among ASN and the communities they serve.

However, the success of digitalization depends on human resource readiness, an organizational culture that is adaptive to technology, and adequate technological infrastructure support (Siti Mutia Kosassy, 2025). In PTKIN, the implementation of ASN governance digitalization must be aligned with Islamic values that constitute the distinctive character of these institutions, such as honesty (*amanah*), professionalism (*itqan*), and service based on the principle of public benefit (*maslahah*).

Therefore, ASN governance digitalization is not only a matter of system modernization but also a transformation of work culture toward greater openness, collaboration, and accountability within PTKIN and other institutions under the Ministry of Religious Affairs more broadly.

2. ASN Management in PTKIN

The management of the State Civil Apparatus (ASN) in State Islamic Higher Education Institutions (PTKIN) has distinctive characteristics that differentiate it from other government agencies. As institutions under the Ministry of Religious Affairs, PTKIN manage ASN within a semi-autonomous framework that combines the principles of government bureaucracy with the distinctiveness of Islamic religious values. The ASN management system in PTKIN must comply with regulations established by the central government through the Ministry of Religious Affairs and the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB), while also maintaining the specificity of their institutional mission as Islamic higher education institutions (Tim, 2019).

ASN management in PTKIN covers various aspects, including recruitment, competency development, rotation, promotion, and employee performance appraisal. All these stages are designed to conform to the principle of meritocracy, namely a system that evaluates employees on the basis of qualifications, competencies, and performance, rather than personal closeness or other non-objective considerations (Government Regulation No. 11 of 2017 concerning Civil Servant Management, 2017). The application of meritocratic principles is essential within PTKIN in order to create a professional, accountable, and effective bureaucracy in providing public services, particularly in the field of religious higher education.

In addition, ASN competency development in PTKIN is a major concern (Rustan, 2008). ASN in PTKIN are not only expected to perform administrative duties in accordance with public service standards, but are also expected to possess a strong understanding of Islamic values as the foundation of their work. Therefore, training and capacity-development programs in PTKIN often include technical training in personnel administration as well as character development based on Islamic values.

ASN governance in PTKIN also emphasizes the importance of digital-based performance appraisal. In the context of bureaucratic reform currently being implemented by the Ministry of Religious Affairs, every ASN is expected to use information technology in the process of performance reporting, either through nationally integrated application systems or local systems developed by each PTKIN. This aims to increase transparency and accountability while also facilitating the monitoring and evaluation of ASN performance by institutional leaders.

However, amid efforts to strengthen ASN governance based on meritocracy and digitalization, PTKIN continue to face various challenges, such as low digital literacy among ASN, unequal access to technological infrastructure across regions, and organizational culture resistance to change (Fadilla, 2025). Therefore, the success of ASN management in PTKIN depends heavily on synergy among government policy, internal organizational readiness, and the willingness of individual ASN to adapt to changing times.

3. Digital Transformation in Higher Education

Digital transformation in higher education is inevitable in the era of the Industrial Revolution 4.0 and the development of Society 5.0 (Teknowijoyo & Marpelina, 2022). PTKIN, as higher education institutions under the Ministry of Religious Affairs, are also required to accelerate the implementation of digital technology not only in classrooms but also in managerial and institutional governance aspects (Andi Kambau, 2024).

In the educational context, digital transformation in PTKIN has brought significant changes to learning methods that are increasingly technology-oriented. Concepts such as e-learning, Learning Management System (LMS)-based instruction, and the use of digital applications to support teaching and learning have become new standards for improving the quality of educational services (Hanafiah, 2024). However, digital transformation does not stop at academic aspects. One important pillar that is also affected is institutional management, particularly the personnel system.

The digitalization of personnel systems in PTKIN is an integral part of efforts to build good governance (Latifa & Frinaldi, 2024; Adila et al., 2024). This is in line with the principles of bureaucratic reform promoted by the government, which emphasize transparency, accountability, effectiveness, and efficiency in ASN management. By utilizing information technology, PTKIN can manage personnel data more quickly, accurately, and integratively. Digital-based personnel information systems enable administrative processes such as leave applications, promotion proposals, performance appraisals, and transfers to be carried out online through documented and easily supervised systems.

Furthermore, personnel digitalization in PTKIN also supports the creation of more objective and measurable performance appraisal systems. Digital applications can be used to monitor ASN productivity based on predetermined targets and indicators. Performance data recorded digitally can serve as the basis for leaders to make decisions related to promotion, training, or employee

evaluation. This is expected to foster a work culture that is professional, competitive, and adaptive to change.

Nevertheless, digital transformation within PTKIN still faces challenges. These include limited technological infrastructure in several regions, uneven levels of ASN digital literacy, and an organizational culture that remains bureaucratic and slow to respond to technological change (Amasia et al., 2024). Therefore, comprehensive strategies are needed so that digital transformation does not become merely a formal policy, but is genuinely implemented effectively and has a significant impact on the advancement of institutional governance in PTKIN.

Digital transformation in the personnel system is expected to become the foundation for a modern bureaucracy that supports the vision of PTKIN as excellent, inclusive Islamic higher education institutions that are responsive to global challenges. In this way, PTKIN can play a strategic role in supporting the national agenda in education, religion, and the development of high-quality human resources.

METHODS

This study employed a descriptive qualitative approach (Abdussamad, 2021), which aimed to understand in depth the phenomenon of ASN governance digitalization within State Islamic Higher Education Institutions (PTKIN) in Indonesia. This approach was selected because it is able to describe and analyze comprehensively the context, process, and dynamics that occur in the implementation of ASN management digitalization in these religion-based higher education institutions.

Data were collected through three main stages. First, a literature study, or library research (Sugiyono, 2016), was conducted by reviewing books, scientific journals, articles, and previous research findings relevant to the themes of governance digitalization and ASN management, particularly in the higher education sector and religious institutions. This literature study helped provide a theoretical foundation and an understanding of the trends, practices, and challenges commonly encountered in the process of bureaucratic digitalization in Indonesia.

Second, policy documentation was analyzed, including official regulations and policies issued by the Ministry of Religious Affairs as the parent institution of PTKIN. The documents examined included policies related to bureaucratic reform, personnel information systems, public service digitalization, and the Ministry of Religious Affairs' eight priority programs. This policy analysis was important for understanding how the regulatory framework shapes the direction and strategy of digitalization implementation at the PTKIN institutional level.

Third, observations were conducted on ASN governance practices implemented in several PTKIN. These observations identified the application of information technology in personnel administration services, performance appraisal systems, and decision-making processes related to

human resource management. The observations provided empirical data on the extent to which digitalization has been implemented, as well as the challenges and obstacles encountered in the field.

The data analysis process was conducted thematically (Heriyanto, 2018) by mapping the challenges and opportunities of ASN governance digitalization in PTKIN. The data obtained were then analyzed using a strategic management approach in order to formulate relevant solution recommendations. The researchers identified strengths, weaknesses, opportunities, and threats (SWOT analysis) associated with the implementation of digitalization and developed implementation strategies that could improve the effectiveness and efficiency of ASN governance within PTKIN.

Through this methodology, the findings are expected to make a tangible contribution to the development of policies and practices for ASN governance digitalization that are more adaptive, responsive, and aligned with the characteristics of PTKIN in Indonesia.

RESULT AND DISCUSSION

1. Challenges of ASN Governance Digitalization in PTKIN

a. Uneven Technological Infrastructure

One of the main challenges in the process of ASN governance digitalization in PTKIN is the uneven distribution of technological infrastructure across Indonesia (Muhammad, 2020). PTKIN located in urban areas or provincial centers generally have better access to technological facilities, ranging from stable internet networks to adequate hardware for supporting digital-based services. However, this condition contrasts sharply with PTKIN located in peripheral areas or in 3T regions (disadvantaged, frontier, and outermost areas), where limited internet connectivity remains a serious obstacle (Prasetyo et al., 2024).

In addition to internet access problems, many regional PTKIN also face limitations in hardware, such as computers and servers that support digital-based personnel information systems. The lack of adequate equipment often causes systems to become slow, unresponsive, or even unable to operate optimally (Muhammad Fitri Rahmadana, 2020). This situation slows down personnel administration processes and causes some services to continue being carried out manually.

Furthermore, the infrastructure of nationally integrated personnel information systems has not yet been fully optimized (Sandinirwan et al., 2022). Several PTKIN still use stand-alone applications or systems that are not directly connected to the central system of the Ministry of Religious Affairs. This leads to data duplication, information inconsistencies, and obstacles to real-time monitoring and evaluation.

This infrastructure gap ultimately affects the quality of personnel services received by ASN in PTKIN, particularly in terms of service speed, data accuracy, and ease of access to personnel information. In the long term, this condition also influences the effectiveness of digital-based bureaucratic reform implementation promoted by the Ministry of Religious Affairs.

Therefore, the infrastructure challenge is an agenda that must be addressed gradually, both through increased budget support from the central government and through internal PTKIN initiatives to modernize devices and digital systems that support ASN governance. Without equitable infrastructure improvement, ASN governance digitalization in PTKIN will be difficult to implement effectively and inclusively across Indonesia.

b. Organizational Culture Resistance

The next challenge in the digitalization of ASN governance in PTKIN is organizational culture resistance (Tri Yuniningsih, 2020). Although digitalization offers many benefits, such as time efficiency, transparency, and improved data accuracy, some ASN still demonstrate limited openness to change toward digital-based systems. This condition is caused by several interrelated factors.

One of the main factors is limited understanding and skills in information technology among ASN, particularly among those who have worked for many years and are accustomed to manual systems (Tri Yuniningsih, 2020). The shift toward digitalization is often perceived as an additional burden that requires new learning, thereby generating resistance or passive rejection. Many ASN feel less confident in operating technology-based personnel applications and prefer manual processes with which they are already familiar.

In addition to skills-related factors, deeply rooted manual work habits are also a major cause of organizational culture resistance. Manual administrative processes that have long been practiced are perceived as more "comfortable" because they have become part of daily routines. The transition to digital systems is viewed as something that disrupts the stability of work patterns established over many years. This is compounded by the perception that new systems are often complicated and require a long adaptation period.

This cultural resistance has a direct impact on the slow implementation of digitalization in several PTKIN. In some cases, even when digital facilities and infrastructure are already available, administrative processes continue to be conducted manually because of minimal support from existing human resources.

To address this challenge, effective change management strategies are needed, such as continuous training, intensive mentoring for ASN who face adaptation difficulties, and the creation of an organizational culture that supports innovation and technology (Harefa et al., 2024). In addition, leaders within PTKIN need to serve as change agents who can model the effective use of digital technology.

By overcoming organizational culture resistance, PTKIN can accelerate digital transformation, improve the quality of personnel services, and realize ASN governance that is more effective and accountable in accordance with the bureaucratic reform principles of the Ministry of Religious Affairs.

c. Limited Human Resource Competencies

Limited human resource competencies constitute a significant challenge in the digitalization of ASN governance in PTKIN (Harefa et al., 2024). Although technological infrastructure is gradually becoming available in various higher education institutions, the ability of apparatus personnel to operate digital systems remains uneven. Differences in levels of digital literacy among ASN are one of the main barriers to optimizing the use of information technology to support effective and efficient governance.

Most ASN in PTKIN still have limitations in understanding and operating applications integrated with modern personnel systems. For example, the use of the State Civil Apparatus Information System (Sistem Informasi Aparatur Sipil Negara, SIASN), cloud-based personnel service applications, or performance management software remains difficult for ASN who are not accustomed to a digital environment. This condition creates dependence on certain individuals with stronger technological skills, thereby producing productivity gaps within the institution.

The lack of continuous and structured training programs also worsens these competency limitations. Most training is conducted sporadically or limited to basic levels, whereas the rapid development of information technology requires ASN to continuously improve their skills.

As a result, many administrative processes that should be completed more quickly with the support of digital systems are instead delayed because they are still conducted conventionally or require assistance from external parties. This affects the low effectiveness of personnel services and delays the full implementation of ASN governance digitalization within PTKIN.

As a solution, stronger commitment is needed from PTKIN leaders and the Ministry of Religious Affairs to provide regular digital literacy-based training, accompanied by increased incentives for ASN who demonstrate strong adaptability in using technology. In addition, a culture of lifelong learning needs to be strengthened so that ASN are prepared to face the dynamics of change in the digital era (Candra Wijaya, 2024).

Through comprehensive improvement in human resource competencies, PTKIN can become better prepared to implement modern, effective, and accountable digital systems that support professional and transparent personnel services in line with the demands of bureaucratic reform.

d. Non-Integrated Regulations and Policies

One of the main challenges in ASN governance digitalization in PTKIN is the lack of integration in regulations and policies across different institutional levels (Khaeromah et al., 2021). On the one hand, the Ministry of Religious Affairs, as the central authority, has formulated various regulations concerning ASN management and personnel information systems. On the other hand, implementation at the PTKIN level often involves different interpretations and applications because

of insufficient policy alignment between the central and regional levels (vertical alignment) and among PTKIN themselves (horizontal alignment).

This condition creates fragmentation in the implementation of digital systems across higher education institutions. For instance, several PTKIN have developed local digital personnel information systems tailored to their institutional needs without fully referring to the standards or platforms established by the Ministry of Religious Affairs. As a result, interoperability among systems becomes difficult, thereby obstructing the integration of personnel data at the national level.

Moreover, the absence of binding regulations concerning minimum standards for technological infrastructure and digital-based personnel systems in PTKIN also constitutes an obstacle (Marwiyah, 2023). Some PTKIN that are more advanced in digital technology development run their programs independently, whereas others remain behind because they have not received clear technical guidance from the ministry.

These policy differences also affect monitoring and evaluation processes. For example, in personnel data reporting or ASN performance appraisal, non-integrated systems often generate data discrepancies between the central authority and higher education institutions. This situation risks reducing information accuracy in policy-making at the national level.

The solution to this issue is the formulation of more integrated and comprehensive regulations between the Ministry of Religious Affairs and PTKIN. Such regulations need to govern the standardization of ASN information systems, ranging from technological platforms and service procedures to uniform reporting mechanisms across all PTKIN. In addition, more intensive coordination forums between the Ministry of Religious Affairs and PTKIN leaders are needed so that every central policy can be properly translated and implemented at the institutional level.

With strong policy integration, digital-based ASN governance in PTKIN can operate more effectively, efficiently, and accountably, while also supporting the objectives of bureaucratic reform within Islamic religious higher education.

2. Opportunities for ASN Governance Digitalization in PTKIN

a. Improving Efficiency and Transparency

One major opportunity arising from the implementation of ASN governance digitalization in PTKIN is the realization of efficiency and transparency in various personnel management processes. Digitalization enables every stage in the ASN management cycle, from recruitment and promotion proposals to daily attendance and performance appraisal, to be carried out in an integrated and real-time manner through information technology-based systems.

Through digital systems, administrative processes that previously required a long time because they were conducted manually and in multiple bureaucratic stages can now be completed more quickly. For example, ASN promotion proposals that previously had to pass through physical

document submission and manual examination at various bureaucratic levels can now be processed online. This reduces waiting times, eliminates procedural redundancy, and minimizes human error.

In addition to time efficiency, digital systems also create higher transparency. Information about personnel status, ASN rights and obligations, and performance evaluation results becomes easier for ASN themselves and relevant units to access. Electronically documented data minimizes the potential for manipulation, document loss, or unethical practices that often occur in manual bureaucracies.

This openness of data also provides an opportunity for PTKIN management to conduct more objective monitoring and evaluation of ASN performance based on actual data. With digitalized data, leaders can make more accurate and measurable strategic decisions in human resource development, ASN formation planning, and organizational structuring that is more responsive to institutional dynamics.

Furthermore, digitalization supports the implementation of accountability principles in public services within PTKIN. Internal and external stakeholders can assess the extent to which institutions apply good governance principles in managing ASN. Thus, digitalization becomes an important pillar in the bureaucratic reform efforts promoted by the Ministry of Religious Affairs and forms part of the eight priority programs.

The efficiency and transparency generated by digitalization not only accelerate personnel services but also increase the trust of ASN and the public in the governance implemented by PTKIN. This becomes a foundation for building a work culture that is more productive, professional, and consistent with the spirit of technology-based public service.

b. Strengthening ASN Performance Accountability

The implementation of digital systems in ASN governance within PTKIN also contributes significantly to strengthening employee performance accountability (Khaeromah et al., 2021). With integrated, data-based information systems, every activity and work output of ASN can be traced and measured more objectively, transparently, and accurately.

One advantage of digital systems is their ability to record and capture various performance indicators in real time. Attendance, daily task implementation, achievement of work targets, and contributions to institutional goals can all be well documented in the system. Consequently, ASN performance measurement is no longer based solely on subjective assessments or manual reports that may contain bias, but on factual data that can be verified.

In addition, digital systems facilitate periodic evaluation of individual and work-unit performance. PTKIN can easily access dashboards that display ASN performance in terms of task completion speed, output quality, and the outcomes of completed work. Strong accountability is important for creating a more disciplined and professional work culture.

Through transparent and structured data, PTKIN leaders can also apply reward and punishment systems more fairly. ASN who demonstrate excellent and consistent performance may receive awards or incentives, whereas ASN who fail to meet performance targets may receive coaching or sanctions in accordance with applicable regulations. This also motivates ASN to continue improving their performance and responsibility in supporting institutional goals.

Performance accountability is strengthened not only at the individual level but also at the organizational level. PTKIN, as institutions under the Ministry of Religious Affairs, can more easily account for their performance achievements to the public and other stakeholders. By utilizing digital technology, institutions can present performance reports that are more comprehensive, accurate, and accessible to external parties.

Ultimately, strengthening ASN performance accountability through digitalization is a strategic step toward realizing result-oriented bureaucratic reform and supporting the creation of PTKIN governance that is efficient, transparent, and accountable.

c. Support for the Ministry of Religious Affairs Priority Programs

The digitalization of ASN governance within PTKIN plays a strategic role in supporting the success of the eight priority programs of the Ministry of Religious Affairs (Kemenag/MoRA) (Tim, 2020). One of the main dimensions promoted is the creation of public services that have a direct impact on society and the strengthening of modern and adaptive institutional governance.

First, in the area of impactful religious services, digital systems help accelerate and simplify public service administration provided by ASN in PTKIN, including personnel, academic, and general administrative services. Through digitalization, services become more efficient, accessible, and transparent for the entire academic community and the wider public, thereby increasing public satisfaction and trust in the institution.

Second, digitalization also supports the Ministry's priority program for excellent, inclusive, and integrated education. Through the use of information technology in ASN governance, PTKIN can strengthen educational services that focus not only on academic output but also on the integration of religious values, ethics, and professionalism among ASN who manage educational processes. Digitalized ASN will develop a more modern and accountable work culture and will be better able to adapt to the evolving needs of students and society.

Third, from the perspective of governance digitalization, the implementation of technology-based personnel systems is aligned with the direction of the Ministry of Religious Affairs' bureaucratic reform, which emphasizes efficiency, effectiveness, and transparency in institutional governance. Through digitalization, PTKIN can integrate various personnel services, such as personnel information systems (SIMPEG), e-office, and digital-based performance monitoring systems. This creates synergy between central policy and implementation at the work-unit level.

In addition, digitalization also supports other Ministry of Religious Affairs programs, such as pesantren empowerment and eco-theology strengthening, by accelerating coordination, information distribution, and reporting of program achievements by ASN within PTKIN, which are often directly connected to community service programs.

Thus, digitalization functions not only as an administrative tool but also as an important pillar in realizing ASN services that are impactful and oriented toward public needs. Effective digital implementation will strengthen PTKIN as religious higher education institutions that are responsive, professional, and relevant to the current dynamics of Indonesian society.

d. Development of Data-Based Systems

One major opportunity offered by ASN governance digitalization in PTKIN is the ability to develop data-driven management systems (Abidin, 2007). Through digitalization, every personnel process, from recruitment and competency development to performance appraisal, generates structured data that can be easily processed.

The implementation of data-based systems enables PTKIN to build a strong information base to support strategic human resource planning. Through accurate and real-time data analysis, PTKIN leaders can identify competency needs, map ASN potential, design career patterns, and manage ASN distribution more effectively according to institutional needs.

In addition, through digitally connected systems, ASN data can be accessed in an integrated manner between PTKIN and the central Ministry of Religious Affairs. This can accelerate bureaucratic processes such as transfers, promotions, promotion proposals, and future workforce planning.

Another advantage of data-based systems is the increased ability to evaluate organizational and individual performance objectively. PTKIN can use personnel data to evaluate the effectiveness of human resource development programs, identify competency gaps that need improvement, and make more accurate evidence-based decisions.

Moreover, such systems can serve as an important tool in institutional risk management, for example by detecting potential low productivity, disciplinary violations, or mismatches between ASN competencies and job requirements. All this information can be processed into strategic recommendations for PTKIN management to improve institutional performance.

Through the development of data-based systems, PTKIN are expected to be better prepared to face contemporary challenges, create a work culture that is adaptive to technology, and support the implementation of ASN governance that is professional, transparent, and accountable. This represents a concrete step toward realizing good governance within Islamic religious higher education in Indonesia.

3. Strategic Solutions for ASN Governance Digitalization

a. Strengthening ASN Digital Capacity

One strategic solution for addressing the challenges of ASN governance digitalization in PTKIN is to strengthen the digital capacity of ASN. This capacity development aims to ensure that all apparatus personnel possess adequate abilities to operate and manage technology-based personnel systems.

The first step that can be taken is to conduct regular digital literacy training, particularly for ASN who are still accustomed to manual work patterns or are not yet familiar with using information technology in their daily duties (Suseno, 2023). This digital literacy training includes an introduction to the basics of information technology, an understanding of the personnel application systems used, and training in the use of digital media to support administrative processes.

In addition, special workshops are needed on the use of personnel information systems implemented within PTKIN. These workshops should focus on hands-on simulations of applications such as e-office, electronic attendance systems, promotion proposal applications, and digital-based performance monitoring systems.

Technical training should also be complemented by digital competency certification programs for ASN in PTKIN. Such certification will ensure that ASN meet recognized competency standards and are ready to perform bureaucratic duties integrated with technology. This program can be carried out in collaboration with official training institutions or human resource development units under the Ministry of Religious Affairs.

Through systematic and continuous digital capacity building, ASN within PTKIN are expected to become better prepared for the digitalization process, adapt quickly to technological development, and support the creation of a more modern, efficient, and professional work culture. Ultimately, this will accelerate the realization of ASN governance that is accountable and aligned with good governance principles.

b. Strengthening Regulations and SOPs for Digitalization

For the implementation of ASN governance digitalization in PTKIN to run optimally, stronger regulations and integrated Standard Operating Procedures (SOPs) are required. To date, one of the challenges faced is the absence of regulations that are truly holistic and uniform, both at the level of the Ministry of Religious Affairs as the central authority and within each PTKIN as the policy implementer at the work-unit level.

Therefore, the Ministry of Religious Affairs needs to establish a national policy that clearly regulates the governance of personnel information systems within PTKIN. This policy should cover aspects such as the use of digital-based personnel applications, the standards for personnel data used, and access management and ASN data security in accordance with the principles of personal data protection.

In addition to national policy, SOPs for digitalization at the institutional level of PTKIN are also necessary (Fauzi et al., 2024). These SOPs will serve as operational guidelines for all ASN in carrying out digital-based personnel administration processes, ranging from data input procedures and administrative service processes, such as online attendance, leave applications, and promotion proposals, to system-based monitoring and evaluation of ASN performance.

Regulatory harmonization between the central and regional levels is also important to prevent overlapping policies or differences in system implementation among PTKIN. Integrated regulations and SOPs will create procedural uniformity and facilitate coordination between the Ministry of Religious Affairs and PTKIN in the digital management of ASN.

With strong regulations and clear SOPs, the digitalization process will not only run more orderly and efficiently but will also improve accountability and transparency in ASN management within PTKIN. Ultimately, this will support the realization of modern and responsive ASN governance that is in line with the demands of bureaucratic reform in the digital era.

c. Development of Integrated Systems

An important strategic step in supporting ASN governance digitalization in PTKIN is the development of integrated information systems (Harahap, 2015). These systems should be designed on a cloud-based architecture in order to provide flexible access, scalability, and ease of data storage and maintenance. Cloud-based systems also enable PTKIN to reduce dependence on local infrastructure, which often becomes an obstacle for institutions with limited technological facilities.

In addition to being cloud-based, ASN information systems need to be designed as mobile-friendly platforms so that ASN can access and use personnel services anytime and anywhere through mobile devices. Given the increasingly dynamic nature of ASN work, flexible access has become an unavoidable need in supporting their performance.

These integrated systems must connect various work units within PTKIN, such as the Bureau of General Administration, Personnel, and Finance (BAUK), academic units, and other technical work units related to ASN management. Integration among these units is intended to make personnel administration flows more effective, avoid data redundancy, and accelerate service processes.

In addition, the systems must be designed to connect directly with systems used by the Ministry of Religious Affairs so that reporting, data validation, and ASN performance evaluation in PTKIN can be conducted in real time and centrally. Consequently, decision-making at the central level can be conducted more quickly and based on accurate data.

The development of integrated and user-friendly systems will support the realization of good governance, improve ASN work efficiency, and strengthen accountability and transparency within PTKIN. At the same time, these systems will serve as an important foundation for creating a work

culture that is more adaptive to technology and preparing ASN to face the challenges of modern bureaucracy in the digital era.

d. Assistance and Monitoring

The successful implementation of ASN governance digitalization in PTKIN depends not only on infrastructure provision and system development but also on continuous assistance and structured monitoring (Pradana & Gamaputra, 2025). Digitalization requires changes in work culture and continuous adaptation; therefore, special teams are needed to serve as facilitators and mentors for ASN at every stage of transformation.

These assistance teams are responsible for providing technical guidance, helping solve operational problems, and ensuring that all ASN understand and are able to operate digital systems optimally. They also function as a bridge between system developers and users (ASN) in the field, so that user feedback can be followed up immediately to improve system quality.

In addition to assistance, periodic monitoring is needed to evaluate the extent to which digitalization implementation proceeds according to predetermined targets and standards. Monitoring should cover not only technical aspects, such as system performance and the use of digital services, but also organizational culture aspects, such as ASN adaptation to new systems and the effectiveness of work processes resulting from digitalization.

Regular monitoring will provide an overview of the remaining challenges while also opening space for continuous improvement. Monitoring results will also serve as important evaluation material for PTKIN leaders and the Ministry of Religious Affairs in formulating subsequent policies that are more adaptive and responsive to field needs.

Through effective assistance and monitoring, the digitalization of ASN governance within PTKIN can proceed more optimally, in a more directed manner, and in accordance with the principles of accountability, transparency, and efficiency in human resource management within Islamic religious higher education institutions.

CONCLUSIONS

The digitalization of ASN governance within PTKIN is inevitable in supporting bureaucratic reform and improving technology-based public services. Although it faces challenges related to infrastructure, human resource competencies, and organizational culture resistance, digitalization also creates significant opportunities to improve efficiency, transparency, and accountability. The implementation of digitalization must be carried out gradually, systematically, and integratively with the support of policies, training, and systems that are adaptive to the needs of PTKIN. Through these strategic measures, PTKIN can play a more optimal role in producing professional and excellent ASN while also supporting the achievement of the Ministry of Religious Affairs' eight priority programs.

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