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Chain Decisions in Digital Government: Between Validity, Integration, and Legal Consequences

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Abstract: The development of digital government in Indonesia presents a new paradigm in administrative decision-making through integrated electronic systems. Decisions in digital government often have a cascading nature, where initial decisions form the basis for subsequent decisions. This study analyzes the validity of cascading decisions and the legal consequences of digital system integration, focusing on how flaws at one stage can affect the validity of subsequent decisions, and how system synchronization determines the legal consequences of data or procedural inconsistencies. The research methods used are literature review and normative analysis of national regulations, including Presidential Regulation No. 95 of 2018 concerning Electronic Systems and Transactions (SPBE) and Government Regulation No. 82 of 2012 concerning the Implementation of Electronic Systems and Transactions. The results show that the validity of cascading decisions is highly dependent on compliance with legal procedures, data integrity, and the application of administrative law principles. Meanwhile, good digital system integration can ensure consistency, legal certainty, and accountability, while integration failures have the potential to create legal uncertainty and administrative disputes. This study emphasizes that digital government is not merely a technological transformation, but also a legal transformation that requires strict system and procedural management.

Keywords: Digital Government; Chain Decisions; Legal Validity; System Integration; Legal Certainty; SPBE

1. Introduction

The development of information technology has brought about a significant transformation in governance through the concept of digital government (e-government).(Susilawati, Yanti, & Erni, 2023),(Rachmad et al., 2024)The use of digital technology is not only transforming the way the government delivers public services but also impacting internal bureaucratic processes, including apparatus work patterns, administrative mechanisms, and decision-making systems. Digital systems enable faster, more transparent, and more efficient decision-making, enabling the government to respond to public needs more adaptively and accurately. This transformation also presents an opportunity to improve the accountability of state administration through the use of structured, systematic, and digitally documented data.(Susilawati et al., 2023),(Kencono, Putri, & Handoko, 2024).

However, this progress is accompanied by new and increasingly complex legal challenges, especially in the context of cascade decisions.(Salsabila, Indrawati, & Fitrie, 2024),(Syafe'ie et al., 2025)A chain decision is a series of interrelated administrative decisions, where each decision stage forms the basis for the next decision stage. Therefore, the quality and validity of each decision determine the validity of the entire series of decisions.(Kozioł-Nadolna & Beyer, 2021)In the context of digital government, a flaw in one decision stage—for example, a data input error, an inaccurate electronic verification, or a digital procedural inconsistency—can have a domino effect that undermines the validity of all connected decisions.(Bernardo, São Mamede, Barroso, &

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dos Santos, 2024)This situation raises fundamental questions in administrative law: does a flaw in one stage necessarily invalidate subsequent decisions, and how does the law assess the consequences of such errors in increasingly complex digital systems?

In addition, the integration and synchronization of digital government systems are key factors that determine legal risks in the chain decision-making process.(Kassen, 2025)A well-integrated digital system has the potential to minimize administrative errors through data consistency, automated verification mechanisms, and standardized and documented digital workflows. This can increase legal certainty and reduce the potential for administrative disputes.(Thalia et al., 2025)Conversely, an unsynchronized or poorly integrated system can lead to data discrepancies between agencies, inconsistent procedures, or technical obstacles that impact the quality of administrative decisions.(Sudira, 2025)explains that disharmony in digital systems can have serious legal consequences, both for government administrators and the public as service recipients. Therefore, understanding the extent to which digital system integration impacts legal consequences is crucial in formulating modern administrative policies.

Against this backdrop, analyzing the validity of chain decisions and the role of digital system integration in determining the legal consequences of errors or discrepancies is both academic and practical. Digital government requires a legal framework that guarantees that every administrative decision has a strong legal basis, while also ensuring the security, accuracy, and consistency of the underlying digital processes. This research aims to gain a deeper understanding of both aspects within the context of modern digital government.

Based on the background description, the problem formulations studied in this research are: (a) How is the validity of each decision in a chain decision series in digital government, and how do defects at one stage affect the validity of subsequent decisions? (b) How does the integration and synchronization of digital government systems determine the legal consequences of errors or discrepancies in the chain decision process?

This study aims to analyze the validity of each decision in the chain of decisions in digital government and evaluate the role of digital system integration and synchronization in determining the legal consequences of such errors or discrepancies. The results of this study are expected to provide an in-depth understanding of the legal risks arising from chain decisions in digital government, serve as a reference for policymakers and government officials to develop legal and digitally integrated decision-making procedures, and provide an academic basis for further research related to digital system integration and its legal implications in public administration.

This study addresses the main legal issues and risks of chain decisions in SPBE implementation, particularly the domino effect of initial errors, data inconsistencies, weak electronic verification, and poor inter-agency system integration that can undermine the legal validity of subsequent decisions and create legal uncertainty and administrative disputes. The novelty of this article lies in filling a research gap left by previous studies that mainly focus on the legality of individual electronic decisions or the technical aspects of digital system integration, without examining the normative linkage between chain decisions, system integration failures, and their legal consequences. By emphasizing this interdependence, the study offers a new perspective that digital governance is not merely a technological transformation but also a legal one, where decision validity depends on both legal control and the integrity of interconnected digital systems.

2. Method

This research uses a normative legal approach with qualitative methods. Normative law was chosen because the focus of this research is to analyze legal rules, principles of decision validity, and the legal implications of chain decisions in digital government. This research also utilizes a case study approach, namely examining concrete examples of the implementation of chain decisions in digital government systems to assess their

validity, system integration, and legal consequences. This approach allows the research to link the problem formulation to real-world practices and the resulting legal consequences.

The data in this study is divided into two categories. Primary data comes from laws and regulations related to government administration and digital governance, relevant court decisions, and official government documents regarding digital decision-making. Secondary data is obtained from academic literature, legal journals, books, scientific articles, and previous research discussing chain decisions, legal validity, digital system integration, and potential legal impacts.

Data collection was conducted through the study of legal documents and literature in several steps, namely identifying relevant laws and regulations, including the Law on Government Administration, the Law on Information and Electronic Transactions, and regulations related to digital governance; collecting court decisions and official government documents that reflect the implementation of chain decisions in digital systems; and reviewing legal literature and previous research to obtain theoretical perspectives and practical analysis.

The collected data was analyzed using qualitative analysis methods. The analysis was conducted by examining the validity of each decision in the chain of decisions and assessing how flaws at one stage affect the validity of subsequent decisions; examining the role of digital system integration and synchronization in regulating the legal consequences of errors or discrepancies in the chain of decisions; and compiling a legal synthesis that connects empirical findings with applicable legal theory and principles, thereby providing clear recommendations regarding legal and secure digital decision-making.

Each stage in this research method is designed to answer two research questions: first, how is the validity of each decision in a chain of decisions in digital government, and how defects in one stage affect the validity of subsequent decisions; second, how the integration and synchronization of digital government systems determine the legal consequences of errors or inconsistencies in the chain of decisions. With this method, the research is expected to provide a comprehensive picture of the legal risks of chain decisions and the importance of digital system integration in the context of modern government.

3. Results and Discussion

The implementation of digital government in Indonesia, through Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE), has brought significant changes to the administrative decision-making mechanism.(Nurfadillah, 2025)With the presence of SPBE, the decision-making process, data management, and public services are promised to be more efficient, transparent, and accountable.(Syafaat, Azhar, Aminah, & Zakiyabarsih, 2025)However, behind the promise of efficiency, there are normative and practical challenges that cannot be underestimated: digital systems will only truly provide legal certainty if the system's integration, procedures, and security are consistently maintained.(Hendra & Fahlevi, 2024). When there are technical, procedural, or legal failures—especially in a chain of decisions—the consequences can be very serious for the legality of decisions and citizens' legal rights. Therefore, it is important to discuss in depth how the validity of chain decisions and the integration of digital systems affect legal consequences in digital government.(Fan, Wang, & Wang, 2024).

In this context, two main aspects emerged that became the focus of discussion. First, the validity of chain decisions: how digital administrative decisions—especially those formed through a series of interconnected decisions—retain their legal force when one stage experiences procedural or technical flaws. Second, the integration and synchronization of digital government systems: how system structure, data interoperability, and system consistency affect the reliability of decisions, as well as the

legal consequences of synchronization failures. These two aspects are important foundations for understanding whether digital government can truly guarantee legal certainty and accountability, or whether it actually opens up space for legal uncertainty if systems and procedures are not properly managed.

3.1 Validity of Chain Decisions in Digital Government

In digital government, decision-making is no longer linear and singular as in traditional administration.(Istianto, 2015). Decisions are often formed through a series of interrelated processes, where each decision becomes the basis or reference for the next decision.(Pasolong, 2023)This poses unique challenges regarding legal validity, as a flaw in one stage can impact the validity of the entire chain of decisions. Therefore, analyzing the validity of chain decisions is crucial to ensuring that digital decisions remain legal, fair, and accountable in accordance with applicable laws and regulations.

a. Legal Basis for Electronic Decisions

In the context of Indonesian law, decisions made electronically are recognized as having the same legal force as traditional written decisions, as long as all requirements in the electronic system are met (Septiari & Ujianti, 2025). This demonstrates that digital media can be legally used in government administration, provided that legal procedures and data integrity are maintained. Article 38 of the Government Administration Law (UU AP) stipulates that officials or government agencies are permitted to make decisions in electronic form.(Natalie, Rafiqi, Fernanda, & Janitra, 2025). Thus, digital mechanisms do not diminish the legality of decisions, but instead provide a faster, more efficient, and better-documented alternative.

In addition, Government Regulation Number 82 of 2012 concerning the Implementation of Electronic Systems and Transactions emphasizes the importance of interoperability, security, and system consistency.(Hairunnisa, 2025)These provisions serve as the normative foundation for digital governance, ensuring that every electronic decision, including those that are part of a chain of decisions, can be legally accounted for. By implementing these principles, the government can minimize the risk of technical errors and procedural flaws that could potentially invalidate decisions.

Furthermore, this legal basis emphasizes that the existence of electronic media does not absolve officials from administrative responsibility. The principles of legality, accountability, and transparency must remain upheld, ensuring that every decision made through a digital system meets applicable normative standards.(Galluci, 2025)This is important to ensure that electronic decisions remain legally accountable and avoid potential disputes or cancellation by administrative courts.

Beyond normative aspects, the implementation of electronic decisions also requires robust internal oversight mechanisms. Digital systems must be equipped with audit logs, verification mechanisms, and data security procedures to ensure that each decision stage can be traced and evaluated for discrepancies. This way, government officials maintain control over the quality of decisions while ensuring that the digital medium supports legal objectives and overall public administration.

Overall, the existing legal framework suggests that electronic decisions have the same legitimacy as traditional decisions, but with an emphasis on system integrity, administrative responsibility, and digital accountability. This understanding is crucial in the context of digital government implementation, particularly when chain decisions are used as public policy instruments, as errors at one stage can have legal implications for the entire decision chain.

b. Early Defect Risk and Domino Effect on Decision Chain

Chain decisions are complex because each stage is interdependent. If an initial stage is flawed, such as a data input error, failed identity verification, or improper procedure,

that decision can invalidate subsequent decisions. This domino effect poses significant legal risks, as a single error can lead to the entire chain of decisions being questioned or invalidated.

In practice, many digital government systems automatically process decisions based on previously inputted data (Kurniawan et al., 2025). If the initial data is flawed or the system fails to verify it accurately, subsequent decisions will follow suit, leaving their legality unclear. Therefore, it is crucial for government officials to conduct substantive controls and internal audits at every stage, not just the final decision, to ensure the validity of the entire decision chain (Hendra & Fahlevi, 2024).

Furthermore, the risk of a domino effect also impacts public legal certainty. Citizens or third parties subject to a chain of decisions could be disadvantaged if one stage is flawed. The impact is not only administrative but can also affect legal rights, the authority of officials, and the legitimacy of policies. In-depth analysis of each decision stage is crucial to prevent legal uncertainty and maintain public trust in digital government (Izzati et al., 2025).

c. The Relevance of Administrative Law Principles in a Digital Context

The validity of chain decisions must also always be linked to the legal principles of public administration.(Mustamu, 2011)The principles of legality, transparency, accountability, and legal certainty remain the primary parameters for assessing the validity of a decision, even if it is made electronically (Secretariat General of the Indonesian Judicial Commission, 2024). Each stage in the decision-making process must adhere to these principles to ensure that the decision is not only formally valid but also substantively just and accountable.

Furthermore, the application of these legal principles helps identify potential legal risks arising from each stage. By adhering to the principle of legality, for example, officials ensure that digital decisions comply with the authority and procedures stipulated by law.(Habibani & Frinaldi, 2024)The principle of transparency ensures that the decision-making process is accountable and auditable, while the principle of accountability ensures that officials are responsible for the results of the decisions they make.

According to Ikhsan, a concrete example of the relevance of this legal principle is seen in administrative disputes related to digital-based licensing services. In some cases, even though decisions are issued electronically, aggrieved parties can take legal action if administrative or verification procedures are not properly followed. Cases like this emphasize that formal validity is not enough; procedural integrity and adherence to legal principles remain the primary determinants of the validity of chain decisions.

3.2 Digital System Integration and Its Legal Consequences

The implementation of digital government emphasizes not only electronic decision-making but also the integration and synchronization of all digital systems (Firmadi & Nugraha, 2025). This integration encompasses interoperability between modules, data security, technical procedures, and smooth system operation. This is crucial because without coordination and alignment between system elements, decision-making effectiveness can be compromised and the potential for administrative errors increases.

The chain of decisions generated by digital systems is highly dependent on the quality of this integration; if there is a discrepancy or defect at one stage, it can affect the validity of the entire decision chain, thus increasing the risk of legal uncertainty. Therefore, system integration analysis is crucial for assessing the legal consequences of errors or discrepancies in the digital decision chain, while ensuring that each decision stage is legally accountable.

a. The Importance of Digital System Integration

Tri Utami (2025) states that digital system integration serves to ensure data consistency, procedural validity, and interrelationships between decisions in digital

government. This integration encompasses not only technical connectivity between systems but also coordination between various modules and administrative units to ensure consistent information flow and accountable decisions. With effective integration, every decision is based on valid data and procedures, reducing the likelihood of errors that could impact subsequent decisions in the decision chain.

Government Regulation Number 82 of 2012 concerning the Implementation of Electronic Systems and Transactions stipulates that every public electronic system provider is required to guarantee system interoperability, security, and consistency (Hairunnisa, 2025). This provision serves as a normative basis that ensures that every system element can communicate with each other and process information accurately. Failure to meet these standards can result in serious legal consequences, including the cancellation of administrative decisions, sanctions against public officials, or disruptions in the decision-making process that are detrimental to the public.

Furthermore, system integration helps prevent technical errors that can cause a similar domino effect, similar to a flawed chain of decisions (People's Consultative Assembly of the Republic of Indonesia & Brawijaya University, 2024). For example, if the initial data used to base a decision is not synchronized across modules, the entire decision-making process can be distorted. In this context, system integration provides automated validation mechanisms, internal audits, and substantive controls that minimize the risk of errors and ensure that every decision remains legally sound.

Integration is also crucial for ensuring accountability and transparency (Aprilla et al., 2024). With interconnected and auditable systems, government officials can be held accountable for every decision they make, and the public can obtain legal certainty regarding their rights. Internal audits, activity logs, and decision tracking are crucial tools for ensuring that digital processes are not only efficient but also legally monitorable and evaluable.

Thus, digital system integration is not just a technical operational issue, but also part of the legal foundation of digital governance.(Bin Shaharuddin, 2023)An integrated and aligned system ensures data consistency, legitimate procedures, and the interconnectedness of decisions within the digital chain. This enables digital government to operate effectively, accountably, and transparently, while minimizing legal risks arising from technical errors or procedural inconsistencies in the decision-making process.

b. The Impact of Integration Failure on Decision Validity

Failure to integrate digital systems can directly impact the validity of chain decisions. Data asynchronization, incompatible modules, or system failures can result in procedurally or substantively flawed decisions. This can trigger legal disputes, both administratively and judicially, as decisions are deemed to fail to meet applicable legal standards.

In practice, several SPBE implementations at the regional level show a high risk of integration failure.(Hartanto & Fauziati, 2022)Variations in infrastructure, human resource readiness, and uneven digital literacy lead to data input errors or synchronization failures between modules (Hendra & Fahlevi, 2024). Consequently, decisions based on incorrect or inconsistent data can potentially be overturned or legally challenged.

Furthermore, integration failures also impact public rights. Decisions generated by unintegrated systems can be detrimental to citizens, for example in public services, licensing, or population data management (Silalahi & Putri, 2025). The resulting legal uncertainty can undermine public trust in the government, increase the risk of litigation, and reduce the effectiveness of digital government implementation (Sauca & Sawitri, 2025).

c. Synthesis between System Integration, Decision Validity, and Legal Consequences

Analysis shows that digital system integration and the validity of chain decisions are closely interrelated (Gusma & Nur, 2025). A well-integrated system strengthens decision validity, reduces the risk of procedural flaws, and ensures legal certainty. Conversely, poor integration increases the likelihood of errors, discrepancies, and legal conflicts.

Beyond technical aspects, system integration also has a normative dimension: regulations such as Government Regulation No. 82 of 2012 and Government Regulation No. 95 of 2018 require that government digital systems support accountability, transparency, and legal certainty. Therefore, good digital system management not only ensures administrative efficiency but also serves as a legal instrument to ensure that decisions are legitimate, fair, and accountable.

This synthesis emphasizes that digital governance is not merely a technological transformation, but also a legal one. The successful implementation of SPBE and the chain decision system depends on how well technical and normative integration is executed, as this determines the validity of decisions and their legal consequences. Therefore, strengthening the digital integration system is a top priority to ensure legitimate and trustworthy governance.

4. Conclusion

Based on the analysis of chain decisions in digital government, several important conclusions can be drawn. First, the validity of chain decisions depends heavily on adherence to legal procedures and system integrity. Any flawed decision in the chain can have a domino effect, potentially rendering subsequent decisions legally ineffective. This demonstrates that digital government requires not only reliable technology but also substantive oversight of every stage of decision-making. Second, the integration and synchronization of digital systems are crucial factors in ensuring the validity of decisions and legal certainty. A well-integrated system ensures data consistency, module interoperability, information security, and operational continuity, thereby minimizing the risk of procedural flaws. Conversely, integration failures can lead to inconsistencies, undermine the validity of decisions, and have serious legal consequences for both the government and the public. Third, the synthesis of decision validity and system integration demonstrates that digital government is not merely a technical transformation, but also a legal one. The successful implementation of an electronic-based government system (ESG) depends on how well the legal and technical aspects are implemented simultaneously, ensuring that chain decisions remain legitimate, fair, and accountable. Based on these conclusions, several recommendations can be made, including: (a) Strengthening internal validation procedures: The government needs to ensure that every decision, including initial decisions in the chain, is thoroughly verified to prevent a domino effect. (b) Improving digital system integration: Modules and databases must be well synchronized, equipped with audit mechanisms, data security, and interoperability between agencies to minimize the risk of technical or procedural errors. Training and digital literacy for officials: Increasing the capacity of human resources in managing digital systems is very important to ensure legal procedures are maintained and the risk of errors can be reduced. Regular monitoring and evaluation: The government needs to conduct regular evaluations of digital decision-making systems and procedures to ensure that all stages are carried out in accordance with regulations, administrative law principles, and the principles of good governance. By implementing these recommendations, it is hoped that chain decisions in digital government will be more legitimate, efficient, and legally secure, while increasing public trust in technology-based governance. This normative study is limited by its doctrinal focus on statutes, administrative law principles, and literature, without empirical observation of how chain decisions and system integration actually function in SPBE practice, so it cannot capture the real frequency, patterns, and practical legal impacts of data errors, desynchronization, or procedural defects. Further research should therefore

adopt empirical approaches—such as case studies of SPBE implementation, analysis of administrative court decisions, system audits, and interviews with officials—to test and validate the legal risks of chain decisions in practice. In terms of policy, the study recommends strengthening mandatory internal validation at every stage of decision-making (especially at the initial decision), developing fully integrated and interoperable SPBE systems with standardized data, real-time synchronization, and audit trails, institutionalizing digital accountability mechanisms such as traceable decision logs and automated verification, enhancing the legal–digital competence of officials through continuous training, and conducting regular monitoring and evaluation to ensure decision validity, system integrity, and legal certainty.

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