

Public-sector Digital Transformation in a New Governance Context: a Conditional Maturity Framework

Dr. Nguyen Dang Quang

quang.apollo@gmail.com

Ohio University, United State

Abstract: This article examines public-sector digital transformation at the organizational level through the lens of capability dependencies. Drawing on an integrative conceptual synthesis of three streams of literature digital transformation and maturity models; platform architecture and interoperability; and data governance and artificial intelligence - the study proposes a seven-stage framework linked by four types of relationships: hard prerequisites, soft dependencies, parallel capabilities, and feedback loops. Six propositions specify the mechanisms and boundary conditions governing transitions between stages. The analytical framework does not assume a single linear temporal sequence; instead, it treats artificial intelligence as a conditional advanced capability and public value as the ultimate outcome criterion. The article discusses implications for government agencies and higher education institutions in Viet Nam and proposes directions for future empirical validation.

Keywords: *Public-sector digital transformation; conditional maturity framework; platform architecture; data governance and artificial intelligence; digital university.*

JEL Classification: H83; O33.

1. Introduction

Digital transformation in the public sector is often assessed through multidimensional digital maturity models, in which an organization is assigned an aggregate score, or level based on multiple parallel criteria. In practice, however, this approach sometimes coexists with another tendency: many agencies and organizations reduce digital transformation to purchasing software, building web portals, or digitizing previously paper-based forms. A common consequence is that, after several years of implementation, an organization has more systems, yet those systems cannot exchange data with one another, and managers still have to consolidate reports manually.

One factor that may reduce the effectiveness of digital transformation is misalignment among strategic objectives, data architecture, and the sequence in which digital capabilities are developed. This article treats that relationship

as a central assumption to be examined rather than as the sole cause of digital-transformation outcomes. Accordingly, it asks the following research question: What capability dependencies shape digital transformation at the organizational level in the public sector, and how can those relationships be structured into a conditional maturity framework?

To answer this question, the article makes four contributions. *First*, it synthesizes and compares three streams of literature that are often discussed separately: research on digital transformation and digital maturity models; research on platform architecture and enterprise integration; and research on data governance and artificial intelligence in the public sector. *Second*, it proposes a seven-stage analytical framework in which relationships between stages fall into four types rather than following a single linear sequence. *Third*, it formulates six propositions that can be tested or challenged with respect

to transitions between stages. *Fourth*, it discusses the framework's applicability to government agencies and higher education institutions in Viet Nam in relation to the new legal framework on digital transformation and artificial intelligence introduced during 2025 - 2026.

2. Theoretical review and research gap

2.1. *Digital transformation as the reconfiguration of the value-creation model*

Drawing on a synthesis of 282 studies, Vial (2019) defines digital transformation as a process in which digital technologies create disruptions that compel organizations to respond strategically by altering their pathways to value creation while addressing the barriers and structural changes that accompany this process. This definition emphasizes the reconfiguration of the value model rather than the adoption of any particular technology. Digital transformation, understood as an organizational journey to reconfigure value creation in the digital age, provides the conceptual foundation for this article.

2.2. *Digital maturity models: contributions and limitations*

Alongside conceptual studies, another stream of literature has developed digital maturity models to help organizations locate themselves along the transformation journey. Reviewing 22 models, Teichert (2019) found that most maturity models list levels across dimensions such as strategy, technology, culture, and processes in relatively separate ways. More recent studies have further criticized the linearity of this approach. Through a structured literature review of multidimensional maturity models, Sprengel & Ulrich (2025) found that most models still portray maturity as a single linear ladder, whereas empirical evidence indicates that organizational capabilities may develop at different speeds and asynchronously. More specifically, in the public sector, Mendoza

Dionicio et al. (2026), in a systematic review of digital maturity models applied to public administration from 2020 to 2024, identified a recurring set of dimensions - technology, processes, data, people, and governance - but also found substantial heterogeneity across models and two notable gaps: the internal structural relationships among dimensions remain insufficiently specified, and the degree of empirical validation varies across models.

These findings point to a specific gap: existing maturity models describe where an organization is, but they rarely explain why one capability depends on another or what form that dependency takes. This article addresses this gap, not by adding another model that merely lists maturity levels, but by theorizing the dependencies among constituent capabilities.

2.3. *Platform architecture and enterprise integration*

A separate stream of literature originating in enterprise architecture provides the theoretical basis for the technical-capability component of the analytical framework. In their seminal work on enterprise integration patterns, Hohpe & Woolf (2003) show that, in the absence of a shared data model serving as an intermediary, the number of connections that must be built among systems tends to increase rapidly as the number of participating systems grows, making maintenance costs increasingly difficult to control over time. At the public-sector level, the GovStack Global Initiative (2024) provides a building-block reference architecture for digital government, with key characteristics including technological neutrality and no presumption in favor of any particular type of software license.

2.4. *Data governance and artificial intelligence in the public sector*

Based on a survey of 330 North American companies, McAfee & Brynjolfsson (2012) reported an association between organizations' self-reported extent of data-

driven operation and their productivity and profitability, which is often regarded as early empirical evidence of the economic value of data-driven decision-making. At the technical layer of artificial intelligence, Lewis et al. (2020) introduced retrieval-augmented generation, which combines a language model's parametric memory with a retrievable, non-parametric knowledge source. Their work demonstrates a specific technical mechanism; it does not imply that organizational AI deployment must await the establishment of a fully centralized data system.

In Viet Nam, the legal framework for this governance layer took shape during 2024 - 2026. *Data Law* No. 60/2024/QH15 (National Assembly, 2024), effective from July 1, 2025, establishes the foundational legal framework for data collection, connection, sharing, and governance among state agencies, thereby providing a legal basis for the shared master-data platform components described in Section 4.4. *Artificial Intelligence Law* No. 134/2025/QH15 (National Assembly, 2025a), further specified by Decree No. 142/2026/ND-CP (Government of Viet Nam, 2026b), establishes a risk-classification mechanism and compliance obligations for AI systems. Decision No. 33/2026/QD-TTg (Prime Minister, 2026b) subsequently promulgated the list of high-risk AI systems, with education included among the six listed sectors. In parallel, *Personal Data Protection Law* No. 91/2025/QH15 (National Assembly, 2025b) sets requirements for processing personal data that directly concern behavioral data on learners and staff in higher education. This body of regulation is rarely incorporated into existing digital maturity models, yet it is directly relevant to the AI-application stage of the framework proposed in this article.

2.5. The public governance theoretical perspective: Organization, users, and public value

The analytical framework situates technical capabilities within organizational

transformation and public governance. Mergel et al. (2019) view digital transformation in the public sector as an organization-wide process that changes processes, culture, and stakeholder relationships. OECD (2020) identifies the principles of government as a platform and a data-driven public sector, together with being open by default, user-driven, and proactive. Architecture, platforms, and data are therefore intermediate capabilities rather than ends in themselves.

Public value is the social benefit public organizations create, reflected in service quality and accessibility, efficiency and equity, transparency and accountability, trust and legitimacy, and adaptability. OECD (2019) emphasizes that data create value when used for anticipation and planning, delivery, evaluation, and monitoring. Public value is therefore the outcome criterion, while governance and accountability; human capability and change management; safety, security, privacy, and legal compliance; and user orientation and public-value orientation constitute four cross-cutting conditions throughout the analytical framework.

2.6. Comparison with existing frameworks and the research gap

Table 1 positions the proposed framework alongside directly comparable frameworks in digital government and public governance. Janowski (2015) provides a stage-based evolutionary logic; OECD (2020) and the World Bank (2025) provide dimensions for assessing maturity; and the Public Administration Interoperability Capability Model (PAICM) of Cestari et al. (2020) focuses in depth on interoperability capabilities. The novelty of this article lies not in proposing another maturity scale, but in classifying dependency relationships into hard prerequisites, soft dependencies, parallel capabilities, and feedback loops and converting them into propositions with specified mechanisms and boundary conditions.

Table 1. Comparison of the proposed framework with digital-government and public-sector capability frameworks/models

Framework /model	Unit of analysis	Main structure	Architecture/ interoperability	Users/public value	Classification of dependency relationships
Janowski (2015)	Digital government	4 evolutionary stages	Yes	Yes, more explicit in the engagement and contextualization stages	Does not classify the four types
OECD DGPF (2020)	Government/ public sector	6 dimensions of digital government	Strong	Strong: user-driven, open, proactive	Does not classify the four types
World Bank GTMI (2025)	Country/ government	4 capability groups	Strong	Strong: service delivery and citizen engagement	No; it is a measurement framework
PAICM - Cestari et al. (2020)	Public administration agency	Interoperability capability levels	Very strong	Includes organizational/ legal elements	Does not distinguish among digital-transformation domains
Framework proposed in this article	Public-sector organization/ university	7 conditional capability states	Strong	Public value is the outcome criterion	Hard prerequisite; soft dependency; parallel capability; feedback loop

Source: Author's synthesis based on Janowski (2015), OECD (2020), World Bank (2025), and Cestari et al. (2020).

3. Method for developing the conceptual framework

This article is a conceptual study, specifically a “model” type in Jaakkola's (2020) classification of approaches to designing conceptual articles: it develops a new theoretical framework by connecting existing theoretical streams into a more coherent relational structure. In this type of research,

the contribution lies not in the generation of new empirical data, but in the transparency of the theoretical-synthesis process and the testability of the proposed propositions.

The article conducts an integrative conceptual synthesis across three streams of literature: (1) Digital transformation and maturity models; (2) Enterprise architecture, platforms, and interoperability; and (3) Data

governance, advanced analytics, and artificial intelligence in the public sector. Sources were selected according to their theoretical role: foundational concepts, recent literature reviews, directly comparable frameworks in public governance and digital government, or sources supporting the mechanisms underlying propositions P1-P6. We coded concepts into five groups: capability, antecedent, output, dependency, and governance requirement. The seven states were created by grouping capabilities with similar antecedents and outputs; dependency types were assigned according to the definitions presented in *Table 3*. This procedure creates an audit trail for

the conceptual reasoning process and should not be interpreted as a systematic literature review (*Table 2*).

The study was motivated by practical observations of digital transformation in Vietnamese higher education institutions. These observations provide reflective context and motivation for formulating the research problem; they are not empirical data or evidence used to establish P1-P6. The article does not conduct structured interviews or analyze project documents through a qualitative coding procedure and therefore makes no claims of generalization from the observed cases.

Table 2. Audit trail for the conceptual-synthesis process

Synthesis step	Reported content
Identification of literature streams	Digital transformation/maturity models; enterprise architecture, platforms, and interoperability; data governance/artificial intelligence in the public sector
Search sources	Relevant academic databases and scholarly search tools, combined with official repositories of government documents
Time scope	Priority given to foundational works and recent literature reviews through 2026
Search keywords	Public-sector digital maturity; digital-government maturity; interoperability capability; government as a platform; data governance; artificial-intelligence readiness/governance
Selection criteria	Foundational theoretical value; currency; public-sector relevance; ability to explain architecture or dependency relationships
Concept coding	Capability; antecedent; output; dependency; governance requirement
Rule for creating stages	Group capabilities with similar antecedents and outputs
Rule for assigning dependency relationships	Assign one of four types (hard prerequisite/soft dependency/parallel capability/feedback loop) according to the definitions presented in <i>Table 3</i>

Source: Developed by the author (2026).

4. Seven-stage analytical framework

In this article, a “conditional maturity framework” represents capability states in which progression and scalability are constrained by different types of dependency relationships rather than by a single universal temporal sequence. Accordingly, a “stage” is an analytical state of capability, not a temporal phase that every organization must complete in the same order. Four cross-cutting conditions

govern the entire framework: governance and accountability; human capability and change management; safety, security, privacy, and legal compliance; and user orientation and public value.

The analytical framework distinguishes four types of relationships among capabilities rather than assuming a single linear sequence. *Table 3* presents the definition of each type and an illustrative example.

Table 3. Four types of capability dependencies in the analytical framework

Relationship type	Meaning	Example in the framework
Hard prerequisite	Without capability A, capability B is difficult to operate at the target scale	Organization-wide single sign-on requires identity governance to have reached a certain level of maturity
Soft dependency	Capability A makes capability B more reliable and easier to govern, but B can still operate at limited scale without A	Standardized semantics and data governance make organization-wide artificial intelligence more reliable
Parallel capability	Can be developed concurrently with other capabilities, but convergence is required before scaling	AI experimentation and AI-risk governance capabilities can begin early, in parallel with completion of the integration architecture
Feedback loop	Needs arising at a later stage may alter the design of an earlier stage	Large-scale AI application needs may require the organization to revise its data architecture or access-governance policies

Source: Author’s synthesis (2026).

Each proposition in the analytical framework states a relationship between two concepts, abstracted from a specific organizational context, and differs from ordinary interpretive statements in two ways (Whetten, 1989). *First*, each proposition is accompanied by an explanation that specifies the mechanism mediating the proposed relationship rather

than merely observing that two phenomena tend to co-occur. *Second*, each proposition includes a boundary condition that defines its scope of application, allowing it to be falsified by specific evidence. To keep each proposition concise and independently citable, the statement of the relationship (what/how) is separated from the explanation

of the mechanism and boundary condition (why, when, and where), which is presented immediately below each proposition.

On the basis of this classification, the seven

stages below describe successive groups of capabilities, accompanied by six propositions (P1-P6) for the transitions between stages (Table 4).

Table 4. Evidence-proposition matrix for the analytical framework

P	Pillar sources	Mechanism	Relationship type	Boundary condition/falsification
P1	Mergel et al. (2019); OECD (2020)	Vision guides priorities	Soft dependency	Resources/institutions may alter the relationship
P2	OECD (2020); enterprise-architecture theory	Strategy creates common constraints	Soft dependency	Strong technical governance may compensate for an unclear strategy
P3	GovStack (2024); Hohpe & Woolf (2003)	Architecture establishes boundaries/interfaces	Soft dependency, approaching a threshold condition	Small organizations may require less formal architecture
P4	Hohpe & Woolf (2003); Cestari et al. (2020)	Shared components reduce bilateral dependencies	Close to a hard prerequisite, with a threshold	An unstable platform increases risk
P5	Data/AI governance; Lewis et al. (2020)	Data quality, provenance, and access control support scaling	Soft dependency, approaching a threshold when scaling	Small-scale experimentation may precede organization-wide integration
P6	OECD (2019); Mergel et al. (2019)	Technical capability must be connected to processes, users, and accountability	Configurational relationship	High public value can be created without deploying artificial intelligence

Note: Dependency labels use the same four types defined in Table 3. “Threshold” denotes a soft dependency that approaches a hard prerequisite as scale increases; “configurational” denotes an outcome that depends on a combination of multiple conditions rather than on a single causal relationship.

Source: Author’s synthesis (2026).

4.1. Awareness and vision

The first stage concerns how organizational leaders understand digital transformation. Leaders must fully recognize that digital transformation is a journey to reconfigure how the organization creates value, not an information-technology procurement project.

The expected output at this stage is a digital-vision statement endorsed by the highest level of leadership, together with a target value model describing how the organization intends to serve its users in the future. *Figure 1* presents the seven stages of the analytical framework and the four types of dependency relationships introduced in *Table 3*.

Figure 1. Seven-stage analytical framework and types of dependency relationships



Source: Author's synthesis (2026).

4.2. Digital platform strategy

P1 (Awareness & Vision → Strategy): A coherent leadership vision increases the organization's ability to establish appropriate objectives, values, and priorities for digital capabilities. This is a soft dependency because vision guides choices and resource allocation but does not by itself guarantee implementation capability (Mergel et al., 2019; OECD, 2020).

The assumed mechanism is that vision provides a common criterion for evaluating and allocating resources among competing options; without such a criterion, digital investment decisions tend to become fragmented in response to the short-term pressures of individual units. This proposition describes a facilitating condition, not a sufficient condition: a viable strategy also depends on the organization's implementation capacity and available resources.

Once the organization has agreed on a vision, the next step is to identify the digital capabilities needed to realize that value model, typically through a capability-gap analysis. This stage produces a digital platform strategy that sets constraints for the design of data, identity, integration, and services in the next stage.

4.3. Platform architecture design

P2 (Strategy → Architecture): A clear platform strategy increases the likelihood that technical design decisions will converge on common capability objectives and data principles. This is a soft dependency; architecture still requires its own coordination mechanism.

The assumed mechanism is that strategy provides a shared set of constraints - capability objectives and data priorities - that different technical teams can reference when making independent decisions, thereby reducing divergence in technology choices and data models. The proposition does not

imply that strategy alone is sufficient to ensure technical consistency; it reduces, but does not eliminate, the risk of divergence among teams and must be accompanied by an architectural coordination mechanism in the next stage to be effective.

Before becoming an operational system, a digital platform is an architectural problem. The organization needs to describe its business capability map, data-domain architecture, shared standard data model, application programming interface catalog, integration and event architecture, identity architecture, data-platform architecture, and security and governance architecture. This blueprint need not be perfectly complete from the outset, but it must be sufficiently detailed for different technical teams to build interoperable systems, consistent with the logic established in enterprise integration theory (Hohpe & Woolf, 2003).

4.4. Building the platform based on open standards

P3 (Architecture → Platform): A clear target architecture increases the likelihood that platform building blocks will be constructed consistently in terms of boundaries, interfaces, identity, and data. The relationship approaches a threshold condition when multiple systems or contractors are involved.

The assumed mechanism is that the architectural blueprint functions as an implicit technical contract among teams, defining data-domain boundaries, interfaces, and responsibilities in advance and thereby reducing the need for renegotiation during later integration. The proposition applies most clearly to organizations implementing multiple systems in parallel or through multiple independent contractors. For a small organization with only one development team, the formal benefits of an architectural blueprint may be lower.

Once the organization establishes the target architecture, it can implement

platform building blocks according to open standards, ensuring interoperability and technological neutrality. Open-source solutions are considered based on fit, security, maintainability, and total cost of ownership rather than as a mandatory requirement. This formulation is consistent with the product-agnostic principle applied by the GovStack Global Initiative (2024) to its building blocks. Capability groups to prioritize include identity and access management, application programming interface management, messaging and event infrastructure, shared master-data governance, and business-process orchestration. Identity governance is often the starting point because most digital services require a unified mechanism for authentication, authorization, and user-lifecycle management.

4.5. Organization-wide system interoperability

P4 (Platform → Integration): Shared platform building blocks that reach a minimum operational threshold increase the likelihood of sustainable interoperability and reduce dependence on bilateral point-to-point connections (Hohpe & Woolf, 2003; Cestari et al., 2020). At the organization-wide scale, this relationship comes closest to a hard prerequisite.

The assumed mechanism is that platform building blocks serve as common integration intermediaries, allowing each system to be compatible with the platform rather than with every other system. Consequently, the number of connections that must be built tends to grow with the number of systems rather than at a faster rate as the number of systems increases, consistent with enterprise integration logic (Hohpe & Woolf, 2003). The proposition assumes that the platform building blocks have reached a minimum level of operational maturity; if the platform itself is unstable, early integration may increase rather than reduce operational risk.

With a shared platform in place, the next step is to bring existing systems - such as

enterprise resource management, relationship management, learning management, human resources, library, or finance systems - into a unified architecture through shared identity standards, application programming interfaces, notification mechanisms, and standardized data semantics. The objective is not to connect every pair of systems point-to-point, but to establish a loosely coupled architecture in which each system communicates with others through a common platform. At this stage, the organization must ensure common governance principles and data semantics, but it does not necessarily need to store all data in a single centralized physical data warehouse.

4.6. Advanced analytics and governed artificial intelligence capabilities

P5 (Data/Interoperability → Advanced Analytics and Governed AI): When data quality, accessibility, provenance, access control, and accountability reach a minimum threshold, the organization is better able to scale analytics and artificial intelligence into mission-critical processes. The relationship is a soft dependency for small-scale experimentation but may approach a threshold condition when scaling or when high-risk systems are involved.

The assumed mechanism is that techniques such as retrieval-augmented generation (Lewis et al., 2020) depend directly on the quality and accessibility of the retrieved data source. When data are fragmented or access governance is weak, the AI system's reliability and the ability to control its risks decline accordingly. The proposition does not imply that small-scale AI experimentation should be prohibited before organization-wide integration is complete; rather, it applies to scaling AI into mission-critical business processes across the organization, consistent with the risk-classification requirements of *Artificial Intelligence Law* No. 134/2025/QH15.

AI experimentation capabilities may begin

to develop at earlier stages, consistent with the “parallel capability” principle in Table 3. This stage should be viewed as comprising two distinct layers. The technical-capability layer (AI capability) includes language-model routing and management, retrieval-augmented generation, semantic search, knowledge graphs, and operating environments for automated agents. The governance layer (AI governance) includes inventories of AI systems in operation, risk classification, access control, traceability of training data and input-data provenance, continuous testing and monitoring, human-oversight mechanisms, incident-response procedures, and vendor accountability. Separating these two layers has direct practical significance in Viet Nam: *Artificial Intelligence Law* No. 134/2025/QH15 and Decree No. 142/2026/ND-CP establish risk-classification mechanisms and compliance obligations, while Decision No. 33/2026/QĐ-TTg, issued on June 30, 2026 and effective from August 15, 2026, lists education as one of six sectors in which high-risk AI systems are identified. The AI-governance layer in the analytical framework is therefore not an optional add-on but a compliance condition for universities deploying learning assistants, automated grading systems, or learner-behavior analytics tools.

4.7. Adaptive data-driven operations toward public value

P6 (Integrated Digital Capabilities → Public Value): Data, platform, advanced analytics, and artificial-intelligence capabilities translate into public value only when connected to business processes, user needs, accountability, and workforce capability (OECD, 2019; Mergel et al., 2019). Artificial intelligence is a conditional advanced capability, not a mandatory prerequisite for public value.

The assumed mechanism is that the technical capability of artificial intelligence becomes organizational value only when its outputs

are incorporated into decision points and subject to human oversight and feedback. Without these organizational conditions, technical capability may exist without producing measurable changes in operational performance. The proposition does not imply that AI always creates positive value; where appropriate oversight or workforce capability is lacking, integrating AI into processes may create operational risk rather than value.

The final stage is not a fixed technological destination but a state in which the organization can continuously reconfigure services, processes, and decision-making mechanisms based on data, advanced analytics, and, where appropriate, artificial intelligence to create public value. In this framework, public value is considered through observable outcomes such as efficiency and cost performance; service quality and speed; accessibility and equity; transparency and accountability; trust; anticipatory and proactive capacity; and user experience. An organization can therefore reach a high level of maturity and create substantial public value without necessarily deploying artificial intelligence, provided that its data, interoperability, and governance capabilities already enable improvements in these public outcomes.

5. Discussion and implications for the public sector and higher education in Viet Nam

The proposed framework assumes that scaling capabilities at later stages depend on establishing certain minimum capabilities at earlier stages. This dependency does not preclude parallel pilots; rather, it implies that organization-wide scaling and sustained interoperability require foundational conditions to reach a certain maturity threshold. This formulation aligns with Sprengel and Ulrich’s (2025) finding that digital transformation does not necessarily progress synchronously along a single ladder, while retaining the practical value of recommending a reasonable sequence of

organizational priorities.

This analytical framework is directly relevant to higher education institutions and government agencies in Viet Nam, where information systems are often developed over multiple periods by different vendors. The National Digital Transformation Program to 2025, with orientations to 2030 (Prime Minister, 2020), followed by Politburo Resolution No. 57-NQ/TW (Politburo, 2024), both identify raising awareness and developing digital platforms as foundational tasks that closely correspond to the first two stages of the analytical framework. For universities developing digital-transformation plans, starting with awareness and platform strategy rather than purchasing a specific education-management software system may reduce the risk of having to replace entire systems after several years because they become incompatible with emerging needs.

The policy developments below illustrate the contextual relevance of the analytical framework and should not be regarded as empirical validation of the P1-P6 dependency relationships.

Policy developments in the first half of 2026 indicate that several elements of this analytical framework have appeared in Viet Nam's governance practice. After one and a half years of implementing Resolution No. 57-NQ/TW, the Standing Agency of the Central Steering Committee issued a notice conveying the conclusions of General Secretary and State President To Lam at the national review conference, emphasizing the need to move from institution building to the creation of products and contributions to growth (Standing Agency of the Central Steering Committee, 2026). This policy formulation is consistent with the framework's shift from foundational stages to the value-creation stage in the analytical framework. Regulation No. 08-QC/TW of the Secretariat and Guidance No. 11-HD/VPTW of the Office of the Party Central Committee

established a data-based, real-time system for monitoring, follow-up, and inspection of task implementation (Office of the Party Central Committee, 2026), which may be viewed as an example of data-driven operation (Stage 4.7) applied to the governance of the political system.

At the identity layer, the Project on Developing the National Digital Identity Application VNeID for 2026 - 2030 (Prime Minister, 2026a) aims to make VNeID a shared national digital platform for facilitating data connectivity and authentication across the information systems of ministries, sectors, local governments, and enterprises, corresponding to the role of the identity building block in Stage 4.4. Accompanying this technical infrastructure, the Resolution on Digital Citizen Development, issued on July 9, 2026 and effective from August 15, 2026 (Government of Viet Nam, 2026a), sets out citizens' rights and responsibilities in the digital environment and policies encouraging the use of online public services, reflecting an effort to align platform development with actual adoption at the integration and value-creation stages.

6. Conclusion, limitations, and directions for validation

This article proposes a seven-stage analytical framework for public-sector digital transformation. Its main contribution lies not in the number of stages but in classifying relationships among them into four types - hard prerequisites, soft dependencies, parallel capabilities, and feedback loops - and in formulating six testable propositions for transitions between stages. The approach addresses a question that existing multidimensional maturity models, as noted by Sprengel & Ulrich (2025) and Mendoza Dionicio et al. (2026), leave open: when must one capability precede another, and when can capabilities develop in parallel?

The article has several limitations that should be made explicit. *First*, it is a conceptual

study; propositions P1-P6 are developed through theoretical reasoning from existing literature and have not yet undergone systematic empirical validation. *Second*, the boundary conditions of each proposition may vary according to organizational size, field of activity, and initial level of digital maturity, differences that the article does not examine in depth.

Future validation may follow two paths. *The first* is a multiple-case study of government agencies or higher education institutions that have implemented digital transformation at different levels, using transparently reported sampling, data-collection, and coding procedures. *The second* is a Delphi expert survey to assess agreement with each proposition and its boundary condition. Both approaches could help move the propositions from a theoretical status toward empirical support or falsification.

Declarations:

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References:

- Cestari, J. M. A. P., Loures, E. de F. R., Santos, E. A. P., & Panetto, H. (2020). A capability model for public administration interoperability. *Enterprise Information Systems*, 14(8), 1071-1101. <https://doi.org/10.1080/17517575.2018.1564154>
- Government of Viet Nam. (2026a). *Resolution No. 66.22/2026/NQ-CP dated July 9, 2026 on digital citizen development, effective August 15, 2026*.
- Government of Viet Nam. (2026b). *Decree No. 142/2026/ND-CP dated April 30, 2026 detailing certain articles of, and measures for implementing, the Artificial Intelligence Law*.
- GovStack Global Initiative. (2024). *Architecture specification: Public administration ecosystem reference architecture*. <https://specs.govstack.global/architecture>
- Hohpe, G., & Woolf, B. (2003). *Enterprise integration patterns: Designing, building, and deploying messaging solutions*. Addison-Wesley.
- Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review*, 10(1-2), 18-26. <https://doi.org/10.1007/s13162-020-00161-0>
- Janowski, T. (2015). Digital government evolution: From transformation to contextualization. *Government Information Quarterly*, 32(3), 221-236. <https://doi.org/10.1016/j.giq.2015.07.001>
- Lewis, P., Perez, E., Piktus, A., Petroni, F., Karpukhin, V., Goyal, N., Küttler, H., Lewis, M., Yih, W., Rocktäschel, T., Riedel, S., & Kiela, D. (2020). Retrieval-augmented generation for knowledge-intensive NLP tasks. *Advances in Neural Information Processing Systems*, 33, 9459-9474.
- McAfee, A., & Brynjolfsson, E. (2012). Big data: The management revolution. *Harvard Business Review*, 90(10), 60-68.
- Mendoza Dionicio, M. A., Cano Lengua, M. Á., & Rodríguez, C. (2026). Digital maturity assessment models in public administration: A systematic review. *Bulletin of Electrical Engineering and*

- Informatics*, 15(2), 1283-1300.
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36(4), 101385.
- National Assembly. (2024). *Data Law No. 60/2024/QH15 dated November 30, 2024, effective July 1, 2025*.
- National Assembly. (2025a). *Artificial Intelligence Law No. 134/2025/QH15, effective March 1, 2026*.
- National Assembly. (2025b). *Personal Data Protection Law No. 91/2025/QH15, effective January 1, 2026*.
- OECD. (2019). *The path to becoming a data-driven public sector*. OECD Publishing. <https://doi.org/10.1787/059814a7-en>
- OECD. (2020). *The OECD digital government policy framework: Six dimensions of a digital government*. OECD Publishing. <https://doi.org/10.1787/f64fed2a-en>
- Office of the Party Central Committee. (2026). *Guidance No. 11-HD/VPTW dated June 24, 2026, implementing Regulation No. 08-QC/TW dated November 5, 2025, of the Secretariat on monitoring, follow-up, and inspection task implementation through the real-time, data-based monitoring and evaluation system*.
- Politburo. (2024). *Resolution No. 57-NQ/TW dated December 22, 2024 on breakthroughs in the development of science, technology, innovation, and national digital transformation*.
- Prime Minister. (2020). *Decision No. 749/QD-TTg dated June 3, 2020, approving the National Digital Transformation Program to 2025, with orientations to 2030*.
- Prime Minister. (2026a). *Decision No. 940/QD-TTg dated May 26, 2026, approving the Project on Developing the National Digital Identity Application VNeID for 2026 - 2030, with a vision to 2045*.
- Prime Minister. (2026b). *Decision No. 33/2026/QD-TTg dated June 30, 2026, promulgating the List of High-Risk Artificial Intelligence Systems, effective August 15, 2026*.
- Sprengel, A., & Ulrich, P. (2025). Differentiated or deficient? Perspective on multidimensional maturity models: Evidence from a structured literature review. *Procedia Computer Science*, 270, 164-173.
- Standing Agency of the Central Steering Committee for the Development of Science, Technology, Innovation and Digital Transformation. (2026). *Notice No. 24-TB/CQTTBCD dated July 7, 2026, on the conclusions of General Secretary and State President To Lam at the national conference reviewing one year and six months of implementation of Resolution No. 57-NQ/TW*.
- Teichert, R. (2019). Digital transformation maturity: A systematic review of literature. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 67(6), 1673-1687. <https://doi.org/10.11118/actaun201967061673>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28(2), 118-144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Whetten, D. A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4), 490-495.
- World Bank. (2025). *GovTech maturity index 2025: Tracking public sector digital transformation worldwide*. World Bank.