



Digital Transformation in Vietnam: Opportunities, Barriers, and Policy Implications for Sustainable Development

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ABSTRACT: This structured narrative review examines the opportunities, barriers, and policy implications of digital transformation in Vietnam during 2020–2026. It integrates peer-reviewed studies of organizational change and digital strategy with Vietnamese policy instruments, official economic statistics, the United Nations E-Government Survey, and regional digital-market reports. The National Statistics Office estimated that digital-economy value added accounted for 14.02% of GDP in 2025 (approximately US\$72.1 billion), while Vietnam ranked 71st of 193 countries in the 2024 UN E-Government Development Index. Major enabling conditions include sustained policy commitment, expanding digital connectivity, and demand for online services. Principal barriers include uneven digital capabilities, fragmented data governance, limited small and medium-sized enterprise (SME) resources, cybersecurity exposure, and disparities in meaningful access. The review proposes a six-domain policy framework combining institutional coordination, interoperability, human capital, SME support, trust and security, and outcome-based evaluation. As a narrative synthesis, it does not claim systematic coverage or causal identification.

KEYWORDS: digital transformation, Vietnam, digital economy, digital government, digital inclusion, SMEs, data governance.

1. INTRODUCTION

Digital transformation is not synonymous with converting paper records into electronic files. It involves technology-enabled changes to organizational structures, processes, capabilities, and value creation (Vial, 2019). Digital technologies can also reshape business models and customer interactions, creating a need for integrated strategy rather than isolated IT investment (Verhoef et al., 2021). Systematic evidence emphasizes continuous organizational adaptation within evolving digital ecosystems (Hanelt et al., 2021). Vietnam has articulated national ambitions for digital government, the digital economy, and digital society through Decision No. 749/QĐ-TTg (2020), Decision No. 942/QĐ-TTg (2021), and Decision No. 411/QĐ-TTg (2022). The central policy challenge is no longer merely expanding the number of digital systems; it is determining whether these systems produce measurable improvements in service quality, productivity, inclusion, and public trust (Prime Minister of Vietnam, 2020, 2021, 2022; World Bank, 2021). This paper asks which conditions enable transformation, which constraints impede it, and which interventions are most likely to convert digital readiness into durable outcomes.

2. REVIEW METHOD AND SCOPE

A structured narrative review was undertaken, retaining the organization and principal evidence of the source manuscript. Sources include peer-reviewed conceptual and empirical reviews, Vietnamese government decisions, national statistics, UN e-government data, OECD policy publications, ITU statistics, and the e-Conomy SEA market report. Priority was given to publications from 2019–2026, supplemented by foundational strategy literature. The approach is interpretive rather than a PRISMA-based systematic review; no exhaustive database search, risk-of-bias scoring, or meta-analysis was conducted (Vial, 2019; Kraus et al., 2022). Evidence was grouped into six domains: institutions and implementation capacity; infrastructure and connectivity; skills and leadership; data governance and interoperability; finance and business models; and cybersecurity, trust, and inclusion. Quantitative indicators are presented with their reporting years and definitions. In particular, national-accounts digital value added and platform-market gross merchandise value (GMV) are analytically distinct and cannot be summed (National Statistics Office of Vietnam, 2026; Google et al., 2025).

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3. THEORETICAL FOUNDATIONS AND ANALYTICAL FRAMEWORK

3.1. From digitization to organizational transformation

Digitization converts analogue information into machine-readable form; digitalization applies digital tools to existing activities; digital transformation entails more fundamental changes in how an organization operates and generates value. These distinctions help prevent the mistaken equation of software deployment with improved institutional performance (Vial, 2019; Verhoef et al., 2021).

Hanelt et al. (2021) conceptualize digital transformation as continuous organizational adaptation rather than a one-off technology project. Consequently, performance assessment should include redesigned workflows, changed decision rights, data quality, user uptake, and the capacity to adapt to new technologies, not simply procurement expenditure.

3.2. Six complementary dimensions of digital capacity

The proposed framework combines (1) institutional coordination, (2) infrastructure, (3) human capital and leadership, (4) data and interoperability, (5) finance and business-model innovation, and (6) trust, security, and inclusion. These dimensions are complementary: infrastructure without digital literacy, or advanced analytics without interoperable data, may generate limited value (Kraus et al., 2022; OECD, 2021).

The framework is an analytical synthesis rather than a statistically validated index. It offers a common structure for comparing public agencies, SMEs, educational institutions, and households while recognizing that their objectives and constraints differ (Hanelt et al., 2021; OECD, 2021).

4. DIGITAL TRANSFORMATION IN VIETNAM: CURRENT EVIDENCE

4.1. Policy architecture and digital government

Decision No. 749/QĐ-TTg established the national digital transformation program; Decision No. 942/QĐ-TTg articulated the transition from e-government to digital government; and Decision No. 411/QĐ-TTg addressed digital economy and society development. Together, these instruments demonstrate policy continuity, although implementation effectiveness varies across institutions (Prime Minister of Vietnam, 2020, 2021, 2022).

Vietnam’s E-Government Development Index (EGDI) increased from 0.6787 in 2022 to 0.7709 in 2024, with its rank improving from 86th to 71st among 193 countries. EGDI integrates online services, telecommunications infrastructure, and human capital; it should not be interpreted as a direct estimate of productivity gains or citizen satisfaction (UN DESA, 2024; Ministry of Information and Communications, 2024).

4.2. Digital-economy scale and measurement

The National Statistics Office reported that digital-economy value added reached an estimated 14.02% of Vietnam’s GDP in 2025, equivalent to approximately US\$72.1 billion. This measure is based on value added within the national-accounts framework and captures a broader economic contribution than platform transaction values (National Statistics Office of Vietnam, 2026).

The e-Conomy SEA 2025 Vietnam report estimated GMV of approximately US\$39 billion for its covered digital sectors in 2025. GMV represents transaction value under the report’s sectoral coverage, not GDP value added; the two indicators are neither directly comparable nor additive (Google et al., 2025).

Indicator	Value	Reference year	Source
Digital-economy value added / GDP	14.02%	2025	NSO (2026)
Digital-economy value added	~US\$72.1 billion	2025	NSO (2026)
e-Conomy SEA digital-sector GMV	~US\$39 billion	2025	Google et al. (2025)
Vietnam EGDI score / rank	0.7709 / 71 of 193	2024	UN DESA (2024)
Vietnam EGDI score / rank	0.6787 / 86 of 193	2022	UN DESA (2024)

4.3. ASEAN comparison using e-government indicators

The 2024 UN survey placed Singapore third globally, Thailand 52nd, Malaysia 57th, Indonesia 64th, Vietnam 71st, and the Philippines 73rd. Vietnam therefore occupied a middle position within this selected ASEAN comparison, behind four of the listed countries and ahead of the Philippines (UN DESA, 2024; Ministry of Information and Communications, 2024).

These ranks describe e-government development according to the UN composite index. They do not rank countries by digital-economy size, corporate digital maturity, or household welfare. Cross-country interpretation must therefore remain indicator-specific (UN DESA, 2024).

ASEAN country	EGDI global rank (2024)
Singapore	3
Thailand	52
Malaysia	57
Indonesia	64
Vietnam	71
Philippines	73

4.4. Sectoral patterns: public administration, business, education, and health

In public administration, digital identification, electronic records, and online services can reduce repeated transactions, but benefits depend on end-to-end process redesign and interoperability. In businesses, e-commerce, digital payments, and analytics can expand market access, although adoption capacity differs by firm size. OECD (2021) identifies skills, finance, and complementary organizational capabilities as important SME constraints; the World Bank (2021) similarly highlights the need to convert connectivity into productive adoption in Vietnam.

In education, learning management systems and digital content may improve access and administration, but effective use requires teacher competence, inclusive design, and reliable connectivity. In healthcare, electronic records and telehealth offer service opportunities alongside substantial privacy and data-sharing challenges. These are potential mechanisms, not quantified impacts established by this review (World Bank, 2021; ITU, 2025).

5. MAJOR OPPORTUNITIES

5.1. Policy commitment and cross-agency coordination

A national strategic framework can establish common objectives, mobilize funding, and reduce duplication of digital platforms. Vietnam's decisions on national transformation, digital government, and digital society offer an institutional basis for coordination across sectors (Prime Minister of Vietnam, 2020, 2021, 2022).

Nevertheless, policy commitment translates into measurable outcomes only when it is accompanied by implementation capacity, clear responsibilities, interoperable standards, and monitoring mechanisms. Organizational-change research cautions against treating formal strategy adoption as proof of realized transformation (Hanelt et al., 2021; Vial, 2019).

5.2. Connectivity and growing digital demand

Broadband connectivity and mobile digital services enable wider access to e-commerce, digital finance, remote services, and public-sector platforms. Vietnam's growing digital-market transaction value is consistent with substantial demand for digitally mediated services (Google et al., 2025; World Bank, 2021).

Connectivity, however, should be assessed in terms of affordability, reliability, accessibility, and meaningful use rather than subscriptions alone. The ITU (2025) identifies persistent global gaps in digital connectivity and skills, a reminder that infrastructure expansion does not automatically deliver inclusion.

5.3. Innovation ecosystems and business-model renewal

Digital platforms, cloud services, and AI applications allow firms to test new products, automate routine tasks, and engage customers through multiple channels. Research on digital business strategy suggests that such opportunities depend on integrating technology decisions with the wider business model (Verhoef et al., 2021; Kraus et al., 2022).

The increase in platform GMV is evidence of transaction activity, not direct evidence of higher profitability or labor productivity. Policymakers should therefore complement market indicators with firm-level outcome measures and adoption-quality metrics (Google et al., 2025; OECD, 2021).

5.4. Human-capital development and managerial modernization

Universities, vocational institutions, and enterprises can jointly expand training in data analytics, cybersecurity, digital operations, and responsible AI. Skills development is especially valuable when combined with domain knowledge and change-management capabilities (OECD, 2021; Hanelt et al., 2021).

A practical implication is to evaluate training through demonstrated task performance and workplace application rather than the number of certificates awarded. Digital leadership also requires allocating decision rights and redesigning processes around reliable information flows (Vial, 2019; Kraus et al., 2022).

6. MAJOR BARRIERS AND CHALLENGES

6.1. Digital skills gaps and organizational inertia

A shortage of digital capability extends beyond software engineering to data stewardship, process redesign, cybersecurity awareness, and evidence-based management. SMEs may lack staff who can translate business needs into viable technology projects, while public agencies may retain paper-era procedures in electronic form (OECD, 2021; World Bank, 2021).

Resistance to organizational change can arise when roles, accountability, and incentives remain misaligned with new workflows. Literature on transformation stresses that implementation requires sustained adaptation, management commitment, and institutional learning (Hanelt et al., 2021; Vial, 2019).

6.2. Digital divides and unequal benefits

Digital inequality encompasses physical access, effective usage skills, and the social or economic returns obtained from digital participation. People who have a connected device may still struggle with electronic authentication, fraud detection, or complex online administrative procedures (ITU, 2025; World Bank, 2021).

The ITU's global estimates of people remaining offline describe the worldwide situation and must not be represented as Vietnam-specific figures. Country-level assessment requires disaggregated evidence by location, income, age, disability, and education (ITU, 2025).

6.3. Fragmented data and insufficient interoperability

Separately developed databases may employ inconsistent identifiers, formats, permissions, and quality controls, limiting the value of cross-agency services and advanced analytics. Such fragmentation is particularly consequential when a service requires repeated citizen submissions or manual reconciliation (World Bank, 2021; OECD, 2021).

Data governance should therefore specify custodianship, metadata standards, quality checks, exchange protocols, and lawful access controls before scaling AI applications. Interoperability is an institutional and procedural challenge as well as a technical one (Vial, 2019; UN DESA, 2024).

6.4. SME financing and implementation constraints

SMEs may face substantial initial and recurrent costs for software, staff training, security, and system maintenance. Uncertainty about returns, limited bargaining power, and insufficient internal expertise can discourage adoption or result in fragmented investments (OECD, 2021).

Support instruments should be matched to digital maturity: diagnostic assistance and foundational tools for early adopters, followed by integration, analytics, and cybersecurity measures for more advanced firms. Uniform technology subsidies may be less effective than needs-based assistance with measurable outcomes (OECD, 2021; Kraus et al., 2022).

6.5. Cybersecurity, privacy, and public trust

As public services and commerce depend increasingly on connected systems, organizations face phishing, ransomware, data breaches, and vendor-dependency risks. These threats can undermine service continuity and user confidence, especially where cybersecurity capabilities are limited (OECD, 2021; World Bank, 2021).

A security-by-design approach requires risk assessment, access controls, incident response, backup procedures, staff awareness, and privacy safeguards throughout the system lifecycle. Trust should be treated as a condition for sustainable uptake rather than a secondary technical concern (Vial, 2019; OECD, 2021).

6.6. Environmental sustainability and responsible AI

Digital infrastructure and AI-enabled services require electricity, computing resources, and equipment that must ultimately be maintained and disposed of. The net environmental effect depends on whether digital efficiency gains outweigh the resource requirements and rebound effects associated with expanded usage (Kraus et al., 2022).

Responsible AI also raises issues of data quality, bias, explainability, and accountability. Vietnam's digital development agenda would benefit from integrating environmental indicators and human oversight into procurement and performance assessment; this is a policy recommendation rather than an empirical estimate derived from the present review (UN DESA, 2024; Vial, 2019).

7. DISCUSSION AND POLICY IMPLICATIONS

The evidence reveals a gap between digital readiness and realized outcomes. An improved EGDI ranking indicates progress in the components of e-government development, but it does not establish that administrative transactions have become faster or more equitable. Similarly, rising GMV signals platform activity but cannot establish productivity growth without firm-level data (UN DESA, 2024; Google et al., 2025). The central policy implication is to evaluate transformation through service completion, user effort, cost savings, productivity, data portability, and distributional effects (OECD, 2021; Vial, 2019).

A phased policy sequence follows: first inventory and standardize data; second redesign high-friction workflows; third train personnel for defined tasks; fourth implement pilots with transparent baselines; fifth scale only when independently assessed outcomes justify doing so; and sixth conduct periodic security and inclusion audits. This sequence reflects the literature's emphasis on organizational adaptation and complementary capabilities (Hanelt et al., 2021; Kraus et al., 2022).

Stakeholder	Priority intervention	Suggested outcome measure
Government agencies	Interoperability and once-only data submission	Completed online cases; processing time
SMEs	Maturity-based advisory and technology packages	Productivity; transaction costs
Universities/vocational schools	Applied data, AI and cybersecurity skills	Demonstrated skills; actual usage
Local authorities	Assisted access for vulnerable groups	Uptake by demographic group
Platform providers	Portability and security-by-design	Incidents; data migration capability

8. IMPLEMENTATION ROADMAP AND FUTURE RESEARCH

In the short term, organizations should audit data assets, assess digital maturity, remove duplicated workflows, and deliver essential training. Medium-term priorities include interoperable shared services and SME assistance based on pilot evaluations. Longer-term priorities should include trusted data ecosystems, responsible AI deployment, and sustained measurement of productivity, service quality, and inclusion (OECD, 2021; UN DESA, 2024).

Future research should combine multi-province surveys with longitudinal administrative and firm-level data. Technology–organization–environment (TOE) models, panel regressions, and mixed-method designs could test whether managerial capabilities mediate the relationship between technology investment and outcomes. Studies should account for firm size, regional conditions, and institutional quality, rather than treating digital adoption as a homogeneous national phenomenon (Vial, 2019; Hanelt et al., 2021).

9. LIMITATIONS

This article is a structured narrative review, not a systematic review or causal empirical study. It does not claim exhaustive retrieval, independent primary-data collection, or pooled effect-size estimation. Some 2025 figures are official estimates or industry-report estimates; the underlying measurement frameworks differ. The ASEAN comparison uses only the 2024 EGDI and cannot stand for every dimension of national digital development. Policy recommendations are analytical inferences that require field validation (National Statistics Office of Vietnam, 2026; Google et al., 2025; UN DESA, 2024).

10. CONCLUSION

Vietnam has made measurable progress in digital-government readiness and has a growing digital economy, supported by policy continuity, connectivity, and market demand. Yet these advantages do not automatically translate into better services or higher productivity. Digital transformation will be more sustainable when investment in technology is coupled with workforce capability, interoperable data, institutional accountability, cybersecurity, and inclusive access. The recommended policy shift is from input-oriented digitalization toward verifiable public and economic outcomes (Vial, 2019; OECD, 2021; UN DESA, 2024).

REFERENCES

- Google, Temasek, & Bain & Company. (2025). e-Conomy SEA 2025: Vietnam country report. https://services.google.com/fh/files/misc/vietnam_e_conomy_sea_2025_report.pdf
- Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>

3. International Telecommunication Union. (2025). Measuring digital development: Facts and Figures 2025. <https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>
4. Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
5. Ministry of Information and Communications. (2024). Viet Nam rises 15 places in the UN e-government rankings [Press release, in Vietnamese]. <https://mst.gov.vn/thong-cao-bao-chi-bao-cao-khao-sat-chinh-phu-dien-tu-cua-lien-hiep-quoc-nam-2024-197240918214719337.htm>
6. National Statistics Office of Vietnam. (2026). Press release on digital-economy value added as a share of GDP and GRDP, 2021–2025 [In Vietnamese]. <https://www.nso.gov.vn/tin-tuc-thong-ke/2026/01/thong-cao-bao-chi-ty-trong-gia-tri-tang-them-cua-kinh-te-so-trong-gdp-grdp-giai-doan-2021-2025/>
7. Organisation for Economic Co-operation and Development. (2021). The digital transformation of SMEs. OECD Publishing. <https://doi.org/10.1787/bdb9256a-en>
8. Prime Minister of Vietnam. (2020). Decision No. 749/QĐ-TTg of June 3, 2020, approving the national digital transformation programme to 2025, with orientations to 2030. <https://vanban.chinhphu.vn/>
9. Prime Minister of Vietnam. (2021). Decision No. 942/QĐ-TTg of June 15, 2021, approving the strategy for e-government development towards digital government in 2021–2025, with orientations to 2030. <https://vanban.chinhphu.vn/>
10. Prime Minister of Vietnam. (2022). Decision No. 411/QĐ-TTg of March 31, 2022, approving the national strategy for digital economy and digital society development to 2025, with orientations to 2030. <https://vanban.chinhphu.vn/>
11. United Nations Department of Economic and Social Affairs. (2024). United Nations e-government survey 2024: Accelerating digital transformation for sustainable development. United Nations. <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2024>
12. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
13. Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
14. World Bank. (2021). Digital Vietnam: The path to tomorrow. <https://documents1.worldbank.org/curated/en/522031629469673810/pdf/Taking-Stock-Digital-Vietnam-The-Path-to-Tomorrow.pdf>