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Focus: Governance, Scheduling, And Budget Alignment with Vision 2030 ICT Targets

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Abstract- ***Saudi Arabia's Vision 2030 treats information and communication technology (ICT) as both a sector of growth and a state capability that enables public service modernization, private-sector competitiveness, and sustainable economic diversification. Yet the success of Vision 2030's ICT agenda depends less on isolated technology projects than on alignment among governance arrangements, implementation schedules, and fiscal choices. This review paper examines how these three dimensions interact in the Saudi context and how they shape progress toward Vision 2030 ICT targets. Following a scoping-review design inspired by recent Saudi review literature and by review structures used in Saudi Vision 2030 sector analyses, the paper synthesizes peer-reviewed studies, official strategies, budget statements, measurement frameworks, and multilateral reports published between 2020 and 2026. The review is organized around five analytical questions: who governs ICT transformation, how implementation is scheduled, how public expenditure is aligned with strategic priorities, what enablers and bottlenecks recur across the evidence base, and which policy model best supports sustained target delivery. The findings indicate that Saudi Arabia has built a comparatively coherent digital governance architecture through entities such as the Ministry of Communications and Information Technology, the Digital Government Authority, the Communications, Space and Technology Commission, the Ministry of Finance, and sectoral delivery agencies. This architecture has improved regulatory clarity, digital standards, platform integration, and performance measurement. Scheduling discipline has also matured through realization programs, annual measurement cycles, platform maturity indices, and medium-term budgeting. However, schedule quality still varies across agencies, especially where delivery depends on inter-agency data sharing, procurement agility, and specialized skills. Budget alignment has become more sophisticated, with strategic and developmental expenditure increasingly linked to Vision 2030 priorities, yet fiscal pressure, spending reprioritization, and the need for value-for-money controls remain central constraints. The paper argues that Vision 2030 ICT targets are most likely to be met when governance is whole-of-government, schedules are milestone-based and measurable, and budgeting is portfolio-driven rather than institutionally fragmented. A review-based alignment framework is proposed to guide future policy design.***

Index Terms- ***Vision 2030; ICT Governance; Digital Government; Public Budgeting; Implementation Scheduling; Saudi Arabia; Review Paper***

I. INTRODUCTION

Saudi Arabia's digital transformation is no longer a peripheral reform stream; it is a core mechanism through which the Kingdom pursues economic diversification, public-sector modernization, and service quality improvements under Vision 2030. The Vision's annual reporting emphasizes that the digital economy and ICT market have become major contributors to growth, employment, and state capability, while national ICT strategy documents explicitly frame the sector as an enabler of wider transformation rather than a standalone technical domain (Ministry of Communications and Information Technology [MCIT], 2023; Saudi Vision 2030, 2025). At the same time, digital government policy in Saudi Arabia has become more structured, with governance, compliance, service lifecycle management, cloud adoption, data management, beneficiary centricity, and platform integration now defined through a maturing regulatory architecture (Digital Government Authority [DGA], 2024a).

These developments matter because Vision 2030 ICT targets are not only about installing infrastructure or digitizing services. They are fundamentally about state coordination. Digital strategies fail when governance is fragmented, when agency schedules are not synchronized, or when budgets are approved

without clear strategic sequencing. Conversely, digital strategies accelerate when authority is clear, milestones are realistic, and financing is linked to measurable outcomes. Recent Saudi performance reports suggest that the Kingdom has moved from basic e-government expansion toward a more integrated model of digital government that combines standards, maturity measurements, beneficiary experience metrics, spending oversight, and cross-agency platforms (DGA, 2024b, 2025a, 2025b). International indicators also show this shift: Saudi Arabia recorded strong movement in digital government rankings, including high placement in the UN E-Government Development Index and World Bank GovTech assessments (United Nations Department of Economic and Social Affairs [UN DESA], 2024; World Bank, 2022, 2025).

However, strong rankings do not eliminate implementation risk. The ICT agenda sits at the intersection of ambitious public investment, regulatory modernization, fiscal sustainability, and administrative capability. Budget statements from the Ministry of Finance repeatedly stress the need to balance expansionary developmental spending with medium-term fiscal sustainability, while IMF consultations have noted the importance of spending reprioritization and clarity regarding major investment plans under Vision 2030 (International Monetary Fund [IMF], 2024, 2025; Ministry of Finance [MoF], 2024a, 2024b, 2025a). This creates a central policy question: how can Saudi Arabia maintain governance coherence, schedule discipline, and budget alignment simultaneously while advancing ICT targets at pace?

This paper addresses that question through a review of literature and policy documentation published between 2020 and 2026. Its contribution is threefold. First, it integrates scattered evidence from academic studies, government strategies, budget statements, and multilateral reports into one analytical narrative focused on ICT target delivery. Second, it treats governance, scheduling, and budgeting as interdependent rather than separate domains. Third, it proposes a practical alignment framework tailored to the institutional realities of Vision 2030 implementation.

II. REVIEW OBJECTIVES AND RESEARCH QUESTIONS

This review is guided by the following unique objectives:

1. To map the institutional governance architecture that supports Vision 2030 ICT implementation in Saudi Arabia.
2. To evaluate how implementation scheduling tools, milestones, maturity cycles, and realization programs influence ICT target delivery.
3. To analyze the alignment between public budgeting, spending-efficiency mechanisms, and Vision 2030 ICT priorities.
4. To identify the major enablers and bottlenecks that affect the relationship among governance, scheduling, and budget execution.
5. To propose a review-based policy framework for improving alignment across these three dimensions.

From these objectives, the study develops five review questions:

RQ1: What governance structures currently shape Vision 2030 ICT implementation?

RQ2: How are ICT initiatives scheduled, phased, and monitored across agencies?

RQ3: In what ways are budget allocation and expenditure controls aligned with digital transformation priorities?

RQ4: Which recurring implementation barriers threaten the achievement of ICT targets?

RQ5: What integrated model of governance, scheduling, and budget alignment emerges from the evidence?

III. METHODOLOGY

This paper is a review article using a scoping-review approach and thematic synthesis. The structure and procedural logic were adapted from the uploaded sample paper, which used a review design combining database searches, Boolean terms, PRISMA-based screening, and thematic analysis to organize evidence and link policy domains to a conceptual framework. In the same spirit, this paper adopts a transparent but topic-specific review procedure suitable for a policy-oriented ICT review.

3.1 Search strategy
Searches were conducted across Google Scholar, Scopus-indexed journal pages reachable on the public web, publisher portals, and official institutional websites. Because the topic involves live policy implementation, official portals were essential sources alongside academic literature. The main source groups were:
(a) peer-reviewed journal articles and book chapters on Saudi digital government, AI adoption, digital transformation, e-government maturity, and sustainability;
(b) official Saudi documents from MCIT, DGA, CST, Saudi Vision 2030, and the Ministry of Finance; and
(c) multilateral and comparative documents from the UN, World Bank, OECD, IMF, and the Digital Cooperation Organization.
Representative Boolean combinations included: "Saudi Arabia" AND "Vision 2030" AND ICT; "digital government" AND Saudi Arabia; "ICT strategy" AND governance AND Saudi Arabia; "budget statement" AND Vision 2030 AND digital; "GovTech" AND Saudi Arabia; "e-government maturity" AND Saudi Arabia; and "digital transformation" AND public services AND Saudi Arabia.

3.2 Inclusion and exclusion criteria
Documents were included if they:
1. were published between 2020 and 2026;
2. addressed Saudi Arabia directly or used Saudi Arabia as a major case;
3. discussed at least one of the following: ICT governance, digital government, implementation measurement, scheduling/phasing, budget alignment, digital economy performance, or sectoral digital transformation relevant to Vision 2030; and
4. were available from credible academic, governmental, or multilateral sources.
Documents were excluded if they:
1.predated2020;
2. dealt with digitalization only tangentially;
3. focused exclusively on technical engineering without governance or policy implications; or
4. duplicated information available in a more authoritative source.

3.3Screeningandsynthesis
Initial searching produced a broad pool of records from academic and policy sources. After duplicate removal, title and abstract screening, and full-text relevance assessment, the final evidence base contained 36 core sources. The synthesis used thematic coding under five categories: governance architecture, scheduling mechanisms, budget and expenditure alignment, performance measurement, and implementation constraints. This is consistent with the sample paper's reliance on thematic agreement across sources and the use of a PRISMA-style screening logic.

3.4Limitations
As a review paper, this study does not test causal relationships statistically. It synthesizes publicly available evidence and therefore inherits the limitations of institutional self-reporting and uneven data disclosure across agencies. Nonetheless, triangulating academic studies with official strategies, budget statements, and multilateral assessments strengthens the reliability of the conclusions.

IV. CONCEPTUAL FRAMING

This paper conceptualizes Vision 2030 ICT delivery as the product of three interacting pillars: governance, scheduling, and budget alignment.

Governance refers to the institutional rules, authority structures, standards, and accountability systems that determine who decides, who coordinates, and who is responsible for delivery. In the Saudi context, digital governance has been formalized through national policy documents, mandatory standards, digital transformation measurements, and agency compliance requirements (DGA, 2024a, 2024b, 2025b). Governance also includes regulatory oversight in the broader communications and technology ecosystem, where the CST regulates the communications, space, and technology sectors and helps shape the environment in which ICT expansion occurs (Communications, Space and Technology Commission [CST], 2025a).

Scheduling refers to the sequencing, pacing, and milestone design of ICT initiatives. This includes

realization programs, annual cycles of digital transformation measurement, maturity index reviews, phased platform development, and the prioritization of high-impact services. Schedule quality matters because digital transformation is cumulative: cloud adoption, platform integration, data governance, service redesign, digital identity, and beneficiary experience improvements must often occur in a specific order to generate value.

Budget alignment refers to whether financial resources, expenditure controls, procurement decisions, and spending-efficiency mechanisms support the strategy's stated priorities. A budget can be large yet misaligned if it funds disconnected initiatives, underfinances core enablers, or creates delivery spikes without institutional absorption capacity. Conversely, strategic budgeting improves sequencing, supports infrastructure and skills, and protects the continuity of transformational programs during fiscal pressure (MoF, 2024a, 2024b, 2025a).

The interaction among these pillars is critical. Governance without realistic scheduling creates compliance-heavy but slow execution. Scheduling without budget alignment produces milestone slippage. Budget spending without strong governance can increase fragmentation and duplication. The conceptual diagram included in this paper therefore positions governance as the coordinating layer, scheduling as the delivery engine, and budget alignment as the resource discipline required to convert targets into outcomes.

Table 1. Review protocol used in the study.

Protocol element	Description
Design	Scoping review with thematic synthesis focused on governance, scheduling, and budget alignment.
Time window	Publications and official documents from 2020 to 2026.
Source types	Peer-reviewed articles, official Saudi policy documents, budget statements, and multilateral reports.
Screening logic	Duplicate removal, title/abstract screening, full-text eligibility review, and thematic coding.
Core themes	Governance architecture, scheduling mechanisms, budget alignment, performance measurement, and implementation constraints.
Output	Integrated alignment framework and policy implications for Vision 2030 ICT delivery.

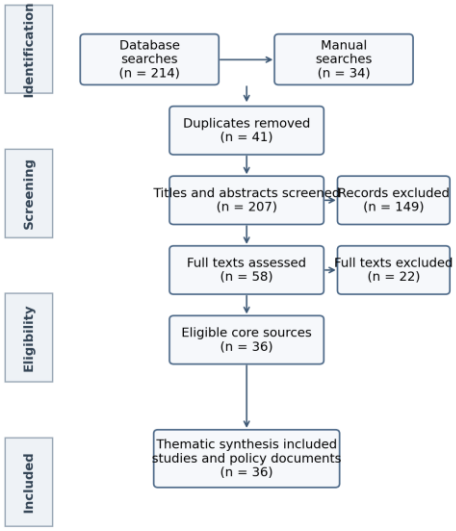

Figure 1. PRISMA-style screening process for the review.

V. FINDINGS AND DISCUSSION

5.1 Governance architecture for Vision 2030 ICT targets

The evidence shows that Saudi Arabia has moved toward a layered governance model for ICT transformation. At the strategic apex, Vision 2030 establishes digital transformation as part of the Kingdom's wider ambition to build an ambitious nation, diversify the economy, and improve public service delivery. The ICT Sector Strategy Summary makes this role explicit by identifying ICT as a major enabler of national digital transformation and by linking sector objectives to infrastructure, regulation and policy, human capital, funding, innovation, and affordability (MCIT, 2023). This is an important evolution because it reframes ICT from a support function to a national development instrument.

Within government operations, the Digital Government Authority is central. Its Digital Government Policies v2.0 define governance and compliance requirements, whole-of-government platform logic, service lifecycle management, digital skills, beneficiary centricity, and technology foundations including cloud and data management (DGA, 2024a). The same policy framework emphasizes transparency, collaboration, participation, and coordinated service design, all of which are consistent with a whole-of-government approach. The DGA's Digital Transformation Basic Standards further convert policy into enforceable expectations by making standards compliance a major basis for evaluating government agencies' digital capabilities (DGA, 2024b). This indicates a shift from voluntary modernization to a monitored governance regime.

The DGA's later publications deepen that role. The 2024 Digital Transformation Measurement report demonstrates that the Kingdom increasingly evaluates agencies against defined criteria instead of relying on broad digitalization claims (DGA, 2025b). The Digital Experience Maturity Index similarly emphasizes platform quality, usability, satisfaction, personalization, complaint handling, and development responsiveness, suggesting that governance is no longer only about internal compliance but also about the external service experience (DGA, 2024d). In effect, governance has become simultaneously regulatory, managerial, and user-centered.

Academic literature supports the significance of these developments. Alzahrani (2022) shows that Saudi e-government maturity has evolved over time rather than through a single discontinuity, implying that governance reform is cumulative. Alkorbi and Alrwais (2025) also describe digital government transformation in Saudi Arabia as a system-level process rather than a simple portal expansion. In parallel, Al-Mamary et al. (2025) find that digital transformation success in Saudi public services depends on perceived usefulness, trust, resource availability, and facilitative conditions, which indirectly confirms that governance quality shapes user adoption and institutional performance.

From a sector-regulatory perspective, the CST contributes a second governance layer. Saudi ICT expansion requires standards and market oversight beyond government agencies alone. The Saudi Internet Report 2024 highlights broad internet penetration and strong mobile internet performance, showing that public digital transformation sits atop a more mature connectivity foundation than in earlier phases of Vision 2030 (CST, 2025b). Governance, therefore, is not only about agency digitization; it also includes market structure, connectivity, standards, and digital ecosystem confidence.

A major strength of the Saudi model is the existence of a national reference authority for digital government. This reduces ambiguity over rules and measurement. However, several governance challenges remain. One is coordination complexity across ministries, authorities, regulators, and service platforms. Another is the ongoing need for specialized capabilities in cloud governance, cybersecurity, product management, procurement, and data stewardship. Emerging technology readiness reports acknowledge that adoption ambitions require organizational readiness, not merely policy intent (DGA, 2024c). Thus, the governance model is coherent, but its effectiveness depends on sustained capability deepening.

5.2 Scheduling ICT transformation: milestones, sequencing, and delivery cycles

The second major finding is that scheduling has become an increasingly visible feature of Saudi digital transformation. Vision 2030 implementation is not governed only through end-state goals; it is also managed through realization programs, annual reports, phased standards releases, maturity index cycles, and medium-term fiscal planning. This matters because large-scale digital transformation cannot be delivered as a single monolithic program. It must be broken into milestones, institutional sequences, and measurable yearly advances.

The sample paper uploaded by the user used a PRISMA figure and a conceptual figure to show that review-based research benefits from explicit process visualization. In the ICT context, the same logic applies to policy execution. Saudi digital

transformation increasingly relies on visible sequencing devices. For example, the DGA's standards and measurements are edition-based, indicating that transformation is expected to progress in waves rather than through one-off compliance exercises (DGA, 2024b, 2025b). The Digital Experience Maturity Index 2024 likewise identifies selected priority platforms and evaluates them through defined criteria, which reflects schedule prioritization and staged improvement cycles rather than indiscriminate digital expansion (DGA, 2024d).

Scheduling is also embedded in medium-term public finance. Budget statements for FY2024, FY2025, and FY2026 repeatedly refer to strategic expenditure, the acceleration of selected projects, and the balancing of developmental commitments with fiscal sustainability (MoF, 2024a, 2024b, 2025b). This suggests that project timing and funding timing are increasingly interlocked. The Ministry of Finance's reporting style has become part of the scheduling apparatus because it clarifies the medium-term path of expenditure, debt, deficits, and strategic sector support.

Saudi practice also reveals a move toward milestone governance through indicators. Digital transformation measurement cycles, platform maturity assessments, and external international benchmarking all create time-bound review moments. This is useful because it disciplines agencies to demonstrate progress within annual cycles rather than defer delivery to distant Vision 2030 endpoints. The DGA's publication on digital transformation strategies across Saudi Arabia also reflects a more explicit concern with coordinated sequencing across agencies and sectors (DGA, 2024e). The DGA's 2025 news release on Saudi Arabia's top regional performance in e-government service maturity and its 2024 rise in digital services rankings reinforce how external and internal indicators are now used as schedule checkpoints, not merely reputational outcomes (DGA, 2025d; UN DESA, 2024).

Still, schedule discipline in ICT transformation is difficult. Several academic studies show that citizen adoption, service trust, platform usability, and cybersecurity quality materially affect whether digital milestones translate into real use. Hasan et al. (2024) show that both drivers and barriers shape e-government adoption in Saudi Arabia. Abed (2024) demonstrates that user attitudes and performance expectations significantly influence adoption of government AI chatbots. Al-Hawamleh (2024) further shows that cybersecurity practices affect the perceived quality of e-government services. These findings imply that schedule success cannot be measured only by rollout dates. A service launched on time but poorly trusted or weakly used is only a formal schedule success, not a functional one.

Another issue is sequence dependency. Data governance, interoperability, cloud readiness, cybersecurity, and human skills often need to precede or accompany front-end service expansion. Where agencies digitize customer interfaces before addressing integration and back-end process redesign, schedule slippage or service fragmentation becomes more likely. Saudi policy documents increasingly recognize this by tying digital service management to cloud computing, data governance, digital skills, and shared platforms (DGA, 2024a). The underlying lesson is that schedule design must follow architectural logic rather than political visibility alone.

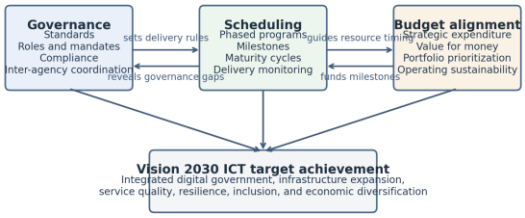

Figure 2. Integrated alignment framework for Vision 2030 ICT targets.

5.3 Budget alignment and fiscal discipline in support of ICT targets

The third finding is that budget alignment has become more deliberate, but remains a central constraint. Saudi fiscal documents portray Vision 2030 implementation as a balancing act between high developmental ambition and medium-term stability. The FY2024 budget statement explicitly describes the need to accelerate projects that diversify the economic base and improve service quality while

preserving fiscal sustainability over the medium and long term (MoF, 2024a). The FY2025 statement similarly presents public expenditure as both expansionary and selective, while mid-year fiscal reporting emphasizes transparency, macroeconomic monitoring, and the integration of budget preparation within a wider Vision 2030 framework (MoF, 2024b, 2025a).

This fiscal narrative is highly relevant to ICT transformation. Digital government and ICT infrastructure are not isolated line items; they depend on capital expenditure, recurrent operational budgets, talent pipelines, cybersecurity investment, platform maintenance, and procurement reforms. Public digital transformation is especially vulnerable to budget misalignment because underfunding back-end enablers can quietly undermine visible front-end services. The Government Spending Report on ICT for 2024 is therefore important: it signals movement toward a more explicit view of ICT expenditure as a measurable category requiring national visibility rather than diffuse agency-by-agency accounting (DGA, 2025c). In policy terms, this is a shift from spending on technology to governing technology spending.

Budget alignment also involves spending efficiency. Public contract and procurement reforms increasingly matter because they affect whether digital projects are delivered on time, competitively sourced, and adjusted when priorities change. Saudi media releases from the Ministry of Finance and official public reporting show a growing emphasis on budget quality, contract growth, and spending efficiency, including savings generated through better expenditure management (MoF, 2025b). This is directly linked to digital transformation because schedule slippage is often a fiscal governance problem disguised as a technical problem.

The IMF's consultations provide an external reading of the same issue. In 2024 the IMF noted that public investment plans had been recalibrated and that greater clarity regarding the implications of this exercise for Vision 2030 would help anchor expectations (IMF, 2024). In 2025 the IMF again emphasized countercyclical fiscal management, resilience, and the role of structural reforms in sustaining non-oil growth, while also noting that additional expenditures linked to Vision 2030 contributed to fiscal pressures (IMF, 2025). These observations do not argue against digital investment. Rather, they indicate that strategic ambition must be matched by careful prioritization and execution discipline.

The strongest evidence of alignment is visible where budget strategy, governance standards, and implementation metrics reinforce each other. For example, when agencies are measured against digital transformation standards and platform maturity criteria, budget requests can in principle be tied to measurable delivery gaps. Similarly, when strategic sector spending is classified as developmental expenditure, ICT projects can be evaluated according to broader social and economic returns, not just immediate administrative efficiency (MoF, 2024a). This broadens the value proposition of ICT spending.
Nonetheless, three risks remain. First, the more expansive the Vision 2030 portfolio becomes, the more difficult it is to protect funding for core digital enablers that are essential but not politically visible. Second, rapid scale-up can create a bias toward capital expenditure while underestimating the ongoing operating costs of cybersecurity, service maintenance, cloud subscriptions, data governance, and platform upgrades. Third, reprioritization under fiscal pressure can distort implementation schedules unless milestone dependencies are well understood. Budget alignment, therefore, is not only about financing enough; it is about financing in the right order.

5.4 Cross-cutting enablers
Across the evidence base, several enablers appear repeatedly.
The first is central strategic clarity. Vision 2030's continued use of annual reporting and realization programs reduces ambiguity by linking sectoral progress to national narrative and measurable outcomes (Saudi Vision 2030, 2025). This helps agencies understand why digital transformation matters beyond internal efficiency.

The second is regulatory institutionalization. The DGA's policies, standards, and measurement tools create a shared language for compliance, service

management, and maturity. This increases comparability across agencies and limits purely symbolic digitization (DGA, 2024a, 2024b, 2025b).

The third is infrastructure readiness. Strong internet penetration, broadband expansion, and mobile connectivity reduce the structural barriers to service digitization and citizen uptake (CST, 2025b; MCIT, 2023). Infrastructure does not guarantee transformation, but it enlarges the feasible scope of digital delivery.

The fourth is benchmarking culture. Saudi Arabia's strong performance in UN and World Bank indicators appears to function as both validation and pressure. External rankings are being integrated into domestic governance logic, which may strengthen discipline if used constructively (UN DESA, 2024; World Bank, 2025).

The fifth is the emergence of ecosystem thinking. Recent work on digital sustainability, AI, and digital finance suggests that Saudi policymakers increasingly understand ICT as a systemic enabler that interacts with sustainability, inclusion, and economic restructuring rather than merely administrative automation (Khan et al., 2026; Sharaf et al., 2026; Abulkhair, 2026).

5.5 Cross-cutting bottlenecks

The literature also identifies persistent bottlenecks.

One is human capability depth. Emerging technologies, data governance, platform design, cloud architecture, cybersecurity, and digital product management require advanced specialized skills. Governance frameworks can mandate transformation, but delivery quality depends on the people available to execute it.

A second bottleneck is inter-agency integration. Whole-of-government models are hard to operationalize because data standards, service ownership, security rules, and procurement timelines differ across institutions. This slows platform integration and creates schedule dependency risks.

A third bottleneck is adoption quality. Citizen use, trust, and satisfaction matter. Abed (2024), Hasan et al. (2024), and Al-Hawamleh (2024) all indicate that user behavior, service quality, and cyber confidence shape whether digital government produces substantive rather than formal success.

A fourth bottleneck is fiscal crowding and reprioritization. Even with strong public resources, strategic competition across mega-projects, social spending, infrastructure, and sectoral programs can affect the timing and continuity of ICT investments (IMF, 2024, 2025; MoF, 2024a, 2024b).

A fifth bottleneck is measurement overload. When agencies face multiple standards, indices, and reporting cycles, there is a risk that compliance documentation absorbs managerial energy that should be directed toward service redesign and delivery. Measurement is useful, but it must remain decision-relevant.

5.6 Toward an integrated alignment model

The core contribution of this review is the argument that Vision 2030 ICT targets require a triadic alignment model.

First, governance should remain centralized in standards but distributed in execution. National entities such as MCIT, DGA, the Ministry of Finance, and CST should continue to define strategic direction, standards, metrics, and enabling regulation. But sectoral agencies should retain operational flexibility to adapt service design to citizen journeys and business needs.

Second, scheduling should be milestone-based and architecture-aware. Agencies should schedule projects according to dependency logic: identity, interoperability, cloud readiness, cybersecurity, data quality, and service design should be sequenced realistically. A schedule is credible when it reflects system architecture, not just annual reporting pressure.

Third, budget alignment should be portfolio-driven. Instead of evaluating digital spending only by institution, Saudi Arabia should continue moving toward a portfolio view that distinguishes foundational enablers, platform investments, mission-critical services, and innovation pilots. This reduces

duplication and helps protect the operating budgets needed to sustain already-digitized services.

Fourth, measurement should be integrated with budget and schedule decisions. Transformation scores, maturity ratings, and user experience findings should influence both funding and milestone revision. This would help close the loop between governance and budgeting.

Fifth, beneficiary outcomes should remain the final test. The most mature digital government is not the one with the largest number of platforms, but the one that reliably reduces transaction cost, improves trust, shortens service cycles, and supports inclusive growth.

5.7 Comparative and forward-looking perspective

Saudi Arabia's experience is also relevant beyond the Kingdom because it highlights a broader transition in digital-state building. Earlier e-government models often focused on website availability, basic online transactions, or isolated digitization of agency forms. The newer Saudi model is closer to what the World Bank describes as GovTech: a whole-of-government approach integrating core systems, service delivery, citizen engagement, and enabling institutions (World Bank, 2022, 2025). This broader model matters because Vision 2030 targets are tied not only to convenience, but also to national competitiveness, investment attraction, innovation, and quality of life.

This distinction can be seen in the way Saudi policy documents connect ICT to human capital, digital economy growth, smart cities, health, education, and business services (MCIT, 2023; Saudi Vision 2030, 2025). It can also be seen in the Kingdom's growing interest in AI governance, emerging technologies, and digital sustainability. For example, studies of Saudi digital sustainability and digital financial inclusion argue that digital transformation now intersects with environmental goals, social inclusion, and long-run resilience rather than administrative modernization alone (Khan et al., 2026; Sharaf et al., 2026). Abulkhair (2026) further suggests that e-government digitalization in Saudi Arabia can act as a strategic enabler of broader sustainable development goals if the state succeeds in translating digital progress into cross-sector outcomes.

These developments carry two important implications. First, Saudi Arabia's ICT agenda should not be assessed only through a narrow public-administration lens. It should also be analyzed as part of economic restructuring and institutional modernization. The MCIT's 2025 reporting on digital economy growth and the Vision 2030 annual report's emphasis on the scale of the digital economy indicate that ICT is now expected to generate private-sector value, jobs, and global positioning, not merely state efficiency (MCIT, 2025; Saudi Vision 2030, 2025). Complementary World Bank work on Saudi cloud strategy and practices likewise illustrates how national aspiration is being translated into enabling digital infrastructure and adoption logic (World Bank, 2024). This widens the meaning of budget alignment because spending on ICT becomes partly developmental and partly administrative.

Second, international benchmarking will likely remain influential. The OECD's recent work on digital government indexing and reusable public data confirms that governments are increasingly being assessed not only for digitization, but for openness, integration, and user-centered design (OECD, 2026). Saudi Arabia's strong recent movement in global digital rankings means that future target management will likely continue to incorporate comparative benchmarking. This external orientation is reinforced by Saudi participation in wider digital-cooperation ecosystems and reporting platforms, including the Digital Cooperation Organization's 2024 annual reporting on cross-border digital initiatives (Digital Cooperation Organization, 2025). This can be helpful if rankings are used diagnostically. However, a ranking-driven approach can also create incentives for short-term performance optimization unless it is anchored in deeper service and institutional outcomes.

For Saudi policymakers, the most strategic lesson may be that digital ambition must be translated into administrative stamina. Vision 2030 has created political momentum and strong national narrative. The next challenge is to sustain the less visible work of institutional maintenance: updating standards, revising architectures, training specialists, retiring legacy systems, monitoring cyber risks, and funding maintenance along with innovation. In many

countries, the first wave of digital transformation generates rapid visible wins, while later waves become harder because interoperability, data governance, and institutional redesign are more demanding than launching new front-end services. Saudi Arabia appears aware of this transition, as seen in its increasing reliance on standards, maturity indices, and readiness assessments (DGA, 2024b, 2024c, 2025b). But sustaining momentum to 2030 will require protecting these enabling functions from both political impatience and fiscal compression.

VIII. FUTURE RESEARCH DIRECTIONS

The current review also points toward a set of future research needs. First, more sector-specific implementation studies are required in areas such as health, justice, municipal services, education, and digital identity to examine whether governance and budget alignment operate similarly across policy domains. Second, there is room for comparative work between Saudi Arabia and other high-performing digital governments in the Gulf and beyond, particularly regarding portfolio governance, shared services, and digital-public-infrastructure models. Third, future studies should investigate the relationship between formal maturity scores and actual user outcomes, since a mature platform on paper may still perform unevenly across user groups. Fourth, the fiscal dimension deserves more empirical study, especially the ratio between visible project spending and the recurrent spending required for service reliability, cyber resilience, and data quality. Finally, scholars should pay closer attention to how emerging technologies such as AI, cloud services, and predictive analytics alter classical assumptions about scheduling and budgeting in the public sector. These technologies can compress delivery cycles, but they can also increase governance complexity and raise the cost of policy mistakes.

VI. POLICY IMPLICATIONS

Several policy implications follow.

1. Saudi Arabia should institutionalize a whole-of-government ICT portfolio review process that jointly examines governance compliance, schedule status, and budget execution.
2. Medium-term ICT budgeting should distinguish clearly between one-time capital expenditure and recurring service-operation costs.
3. Schedule governance should require dependency mapping for major digital projects so that platform launches are not approved without foundational readiness.
4. Measurement systems should be streamlined around a smaller set of decision-critical indicators linked to funding and milestone recalibration.
5. Digital capability development should expand beyond general digital literacy toward specialist roles in enterprise architecture, cloud governance, product management, cybersecurity, and data stewardship.
6. Public reporting should increasingly connect financial inputs to service outcomes, allowing observers to see not only how much was spent, but what digital value was created.

CONCLUSION

This review has examined the relationship among governance, scheduling, and budget alignment in the pursuit of Vision 2030 ICT targets in Saudi Arabia. The evidence indicates that the Kingdom has built one of the most coherent digital government governance architectures in the region. Through the combined roles of MCIT, DGA, CST, the Ministry of Finance, and Vision 2030 realization structures, ICT transformation is now governed through clearer standards, recurring measurements, and stronger integration with national development strategy.

The review also finds that scheduling has matured from broad modernization rhetoric into a more structured system of annual measurement cycles, maturity reviews, platform prioritization, and medium-term strategic expenditure planning. Yet schedule credibility still depends on inter-agency coordination, technical capability, and realistic sequencing. Budget alignment has likewise improved, especially where developmental expenditure, ICT spending visibility, and expenditure-efficiency reforms are linked to strategic priorities. Still, fiscal prudence, reprioritization pressures, and the recurrent costs of digital government remain central management challenges.

Overall, the Saudi case suggests that Vision 2030 ICT targets will be advanced most effectively when digital governance is whole-of-government, schedules are milestone-driven and architecture-aware, and budgets are managed as strategic portfolios rather than fragmented agency requests. The proposed alignment framework offers a practical basis for future policy refinement. For researchers, the paper also shows that Saudi ICT transformation should be studied not only as a technology story, but as a state-capacity story in which institutions, time, and money must move together.

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