Digital Government Authority
هيئة الحكومة الرقمية

Digital Transformation Strategies Across Saudi Arabia

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Contents

1. Executive Summary

This study, titled "Digital Transformation Strategies Across Saudi Arabia" provides an overview of digital transformation efforts within Saudi Arabia's government as part of Vision 2030, highlighting the goal to become one of the top 5 digital governments globally. The executive summary outlines the approach, scope, key findings, and recommendations of the study. The findings identify areas where government entities should collectively focus their efforts, positioning the public sector to achieve their specific goals and advance towards becoming a leading digital nation.

The study followed a structured approach of data collection, analysis, synthesis, and validation within the following scope: 8 Government Sectors, 31 Digital Strategies, 235 Strategic Objectives, 490 Transformation Initiatives, and 506 Pain points, starting from 2022.

After mapping the three main dimensions—Pain Points, Strategic Objectives, and Transformation Initiatives—onto a comprehensive list of 7 categories and 19 subcategories, the analysis yielded the following key findings:
The findings, along with the close percentages shown in Figure 1, demonstrate that a proactive approach is being taken to address pain points and implement strategic objectives in the digital transformation journey. Each color on the chart below represents one of the three main dimensions, as indicated in the legend, with the distribution of each dimension shown across the 7 categories.

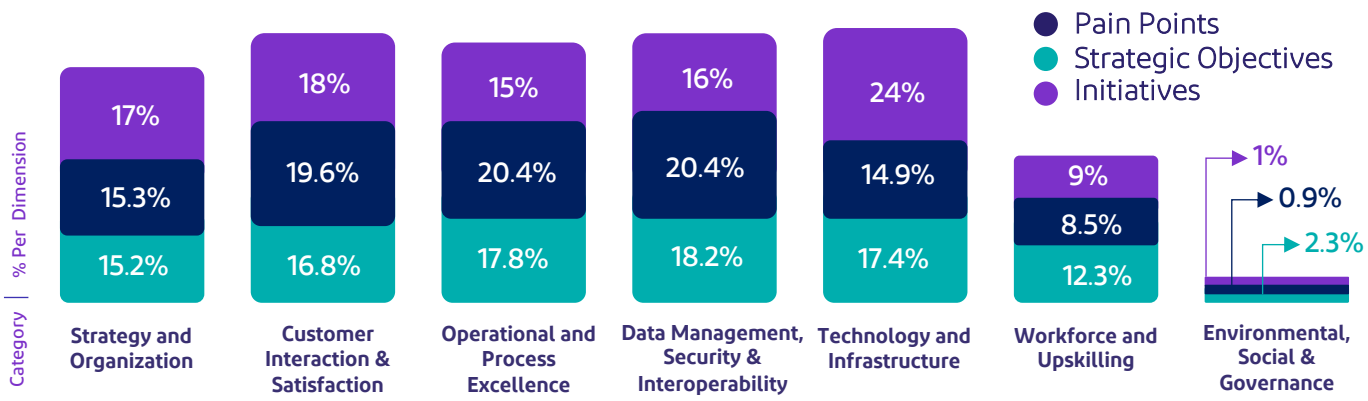


Figure 1: Analysis of objectives, pain points and initiatives across key digital transformation areas

However, through analyzing the findings above, a set of recommendations has been identified to address the pain points and guide future transformational efforts. These are outlined below and detailed in the conclusion section.

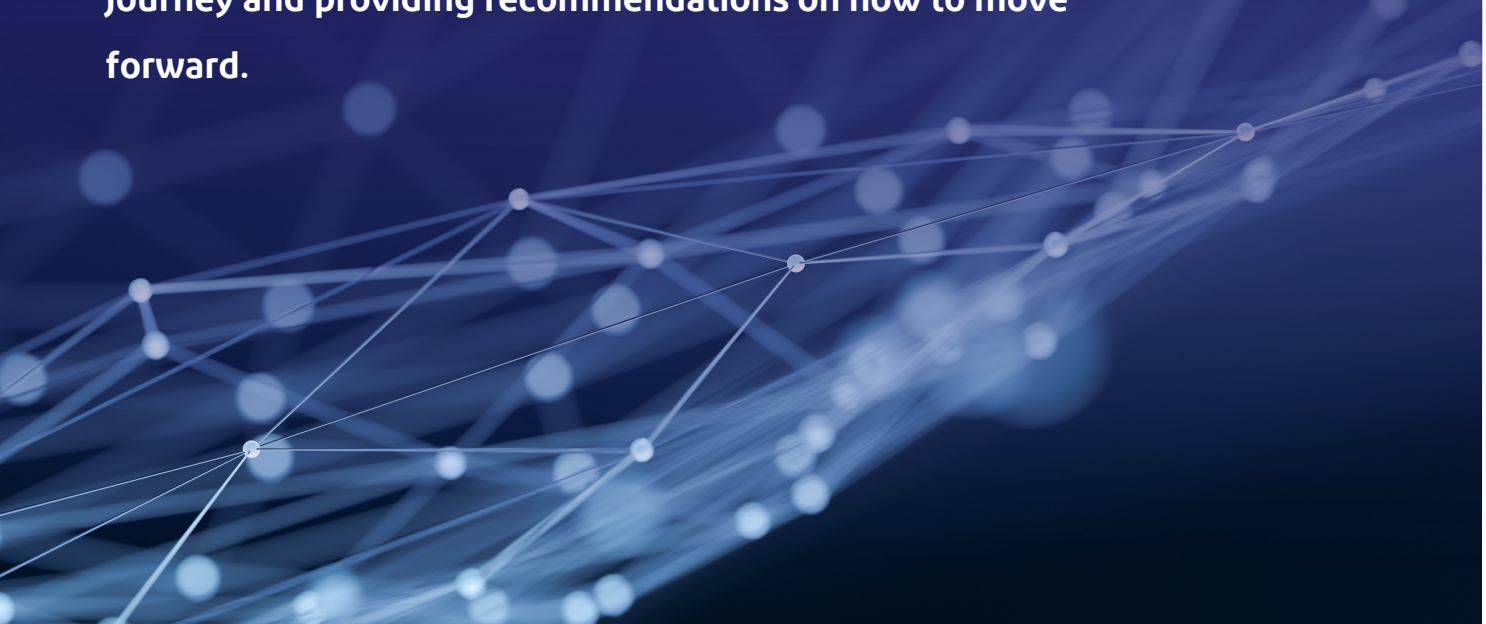
- Enhancing Data Governance
- Continue to Enhance Customer-Centric Services.
- Streamline Process Automation
- Monitor and Adapt to Global Trends
- Enhance Digital Infrastructure
- Workforce development
- Creating Effective Channels for Gathering User Feedback
- Facilitating Digital Access for All
- Implementing (ESG) Principles for Achieving Sustainable and Responsible Digital Transformation

2. Introduction

At the heart of the Meta Study of Digital Transformation Strategies Across Saudi's Government Entities study lies the pivotal role within the Digital Government Authority in facilitating government entities' digital transformation. Through a comprehensive array of advisory services, the Digital Government Authority supports developing and reviewing digital transformation strategies, ensuring alignment with national goals.

In a world experiencing rapid digital transformations, Saudi Arabia aims to be at the forefront of leading nations in digital transformation. In this context, the research study published by the Digital Government Authority offers one perspective on the efforts made within government entities in the Saudi Arabia.

In alignment with Vision 2030's goal of becoming one of the top 5 leading countries in digital transformation, the Digital Government Authority aims to coordinate with government entities to achieve these objectives. From this perspective, this study highlights the main pain points, strategic priorities, and common elements in digital transformation initiatives, offering an overview of where Saudi Arabia's government stands in its transformational journey and providing recommendations on how to move forward.



Based on Saudi Arabia's vision to be among the top ten digital governments by 2030, the Digital Government Authority seeks to align with government entities to achieve these targets. The Meta Study plays a key role in analyzing digital efforts across government digital transformation strategies. The focus on common goals aims to identify shared objectives that can unify efforts and drive collective progress. Pain points were analyzed to understand the challenges that hinder digital transformation, allowing for targeted interventions. Digital initiatives were examined to highlight successful practices and innovative solutions that can be replicated or scaled. This approach provides decision-makers in various entities with a comprehensive view of common goals, pain points, and digital initiatives, enabling them to formulate more coordinated and efficient digital transformation efforts.

The scope of the analysis covers 31 digital transformation strategies implemented by government entities across various sectors in Saudi Arabia from 2022 to 2024. It examines three main dimensions: Pain Points, Strategic Objectives, and Initiatives, ensuring alignment with the Strategy House framework shown in Figure 2 through a systematic categorization. The assumption is that effective digital transformation strategies should address specific pain points by aligning strategic objectives with targeted initiatives, ultimately leading to improved government efficiency and service delivery. This study aims to provide comprehensive insights and recommendations to enhance digital transformation efforts within the Saudi government.

The study adopted a comprehensive analytical methodology to ensure alignment with Saudi Arabia's Vision 2030 targets. This involved systematic data collection and evaluation of the submitted digital transformation strategies from various government entities. The analysis was structured using a classification system that covers several critical dimensions, including strategy formulation, beneficiary experience, operational processes, data management, technological adoption, workforce development, and sustainability practices.

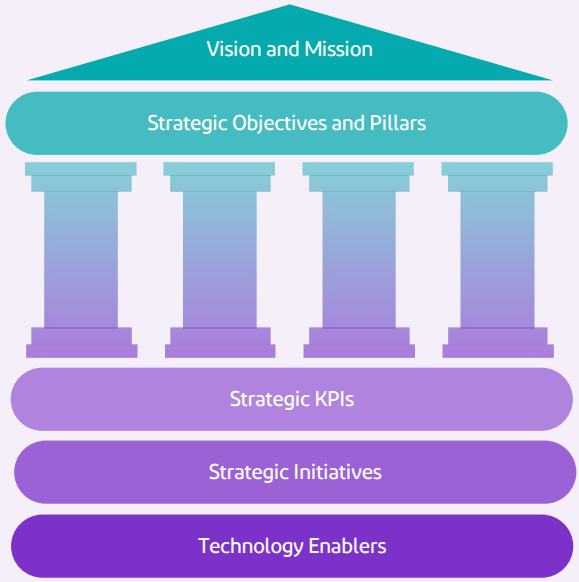


Figure 2: Strategy House Framework

These dimensions were selected to provide a holistic understanding of the digital transformation efforts and identify areas needing improvement to meet the Vision 2030 objectives.

By examining the transformation strategies adopted across Saudi's government entities, the findings will provide strategic operational recommendations to enhance the digital transformation efforts across Saudi Arabia. Ultimately, the aim is to contribute to the current efforts by offering actionable insights to guide future initiatives, ensuring alignment with Vision 2030.

3. Approach and Methodology

3.1 Approach:

For each Digital Transformation Strategy that was analyzed, three key dimensions were identified: Pain Points, Strategic Objectives, and Initiatives. These dimensions were chosen because they provide a holistic view of the entities' main areas of concern and strategic focus, which are essential for achieving the Vision 2030 targets. These dimensions were then mapped onto a comprehensive list of categories and subcategories based on common core elements of strategic guidance, methodology, and clustering methods. This approach provides a clear understanding of the government entities' primary concerns, priorities, and direction. Further insights on these dimensions are shown below:

01 **Pain Points**
This included Challenges, Gaps, Weaknesses, & Threats

02 **Strategic Objectives**
This included Digital Transformation Strategic Objectives and their alignment with NDGS and the institutional objectives.

03 **Initiatives**
This included the initiatives undertaken as part of the entity's digital transformation strategy and their focus areas.

Notably, as a secondary reference included the review of other statistics including the number of projects and KPIs per strategic objective, as well as the strategy evaluations previously conducted by DGA on these digital transformation strategies.

The methodology encompasses the following key steps: a structured approach that enables us to present a well-rounded analysis of the digital transformation efforts within the Saudi government, offering valuable insights and actionable recommendations for stakeholders involved in or interested in digital governance.

Data Collection

Information from 31 digital transformation strategy documents implemented by local government entities is systematically gathered, focusing on three dimensions: pain points, strategic objectives, and initiatives. This data is extracted and stored in a database, undergoing thorough quality checks to ensure accuracy, relevance, and completeness.

Data Analysis

Using quantitative data analysis, complemented by visualizations through multiple dashboards, the collected data is systematically examined to uncover patterns, trends, and significant insights regarding digital transformation efforts within government entities.

Validation

The findings undergo continuous validation to ensure accuracy and reliability. Through conducting through self-validation and numerous reviews on the data to ensure consistency and accuracy, including verifying that all numerical data aligns correctly and revisiting earlier steps when needed.

Synthesis

After reviewing the data from multiple perspectives, including strategic, consumer, operational, data, technology, workforce, and sustainability, the findings are categorized into distinct categories and subcategories. This synthesis process enables us to construct a cohesive understanding of digital transformation strategies, identifying common themes, challenges, focus areas, and areas for improvement.

These steps were applied to each dimension in 31 digital transformation strategies across all 8 government sectors from 2022 to 2024, yielding the following key figures:

506 Pain Points & Gaps

235 Strategic Objectives

490 Transformation Initiatives

3.2 Study Dimensions:

This Categorization Framework encompasses all dimensions analyzed in this study, including the examination of 506 pain points, 235 strategic objectives, and 490 initiatives. Through a detailed analysis of these diverse data points, valuable insights are gained into the multifaceted challenges, goals, and actions undertaken in the digital transformation journey. The initial data analysis resulted in a comprehensive list of categories and subcategories, covering a broad scope of digital transformation areas:

Strategy and Organization:

- Strategic Direction and Policies
- Organization Structure & Operating Model
- Business Model & Ecosystem (Partnerships)

Customer Interaction & Satisfaction:

- Digital Platforms, Products & Services
- Customer Experience

Operational & Process Excellence:

- Operational Efficiency & Excellence
- Risk Management & Business Continuity
- Performance Management

Data Management, Security & Interoperability:

- Data Management & Governance
- Data Privacy & Protection (Cyber Security)
- Digital Interoperability

Technology and Infrastructure:

- Core Systems
- Infrastructure Modernization
- Emerging Technologies & Innovation

Workforce and Upskilling:

- Technical Upskilling / Education
- Talent Acquisition
- Knowledge Management & Awareness

Environmental, Social & Governance (ESG):

- Environment & Sustainability
- Social Responsibility

The categorization system offers a clear framework for analyzing digital transformation strategies, covering key areas from strategy to sustainability. This approach provides insights into aligning overall strategies, optimizing processes, leveraging technology, and ensuring governance responsibilities, guiding the study's analysis and recommendations.

3.3 Methodology:

Following identifying the three key dimensions and the categorization framework, the methodology begins with a thorough data collection process, systematically gathering information from 31 digital transformation strategies executed by government entities. This step is followed by a comprehensive data analysis phase, focusing on three critical dimensions: pain points, strategic objectives, and initiatives.

Subsequently, during the synthesis phase, the data from the Pain Points, Strategic Objectives, and Initiatives dimensions are meticulously categorized according to predefined sets of categories and subcategories found in the next section. This process enables the construction of a structured understanding of the digital transformation landscape, identifying common themes, successful practices, and areas for improvement.

To ensure the accuracy and reliability of the findings, rigorous validation procedures are implemented. Expert reviews are conducted, and cross-referencing with established benchmarks and best practices in digital governance is undertaken. This validation step serves as a crucial checkpoint, affirming the integrity of the insights and analysis.

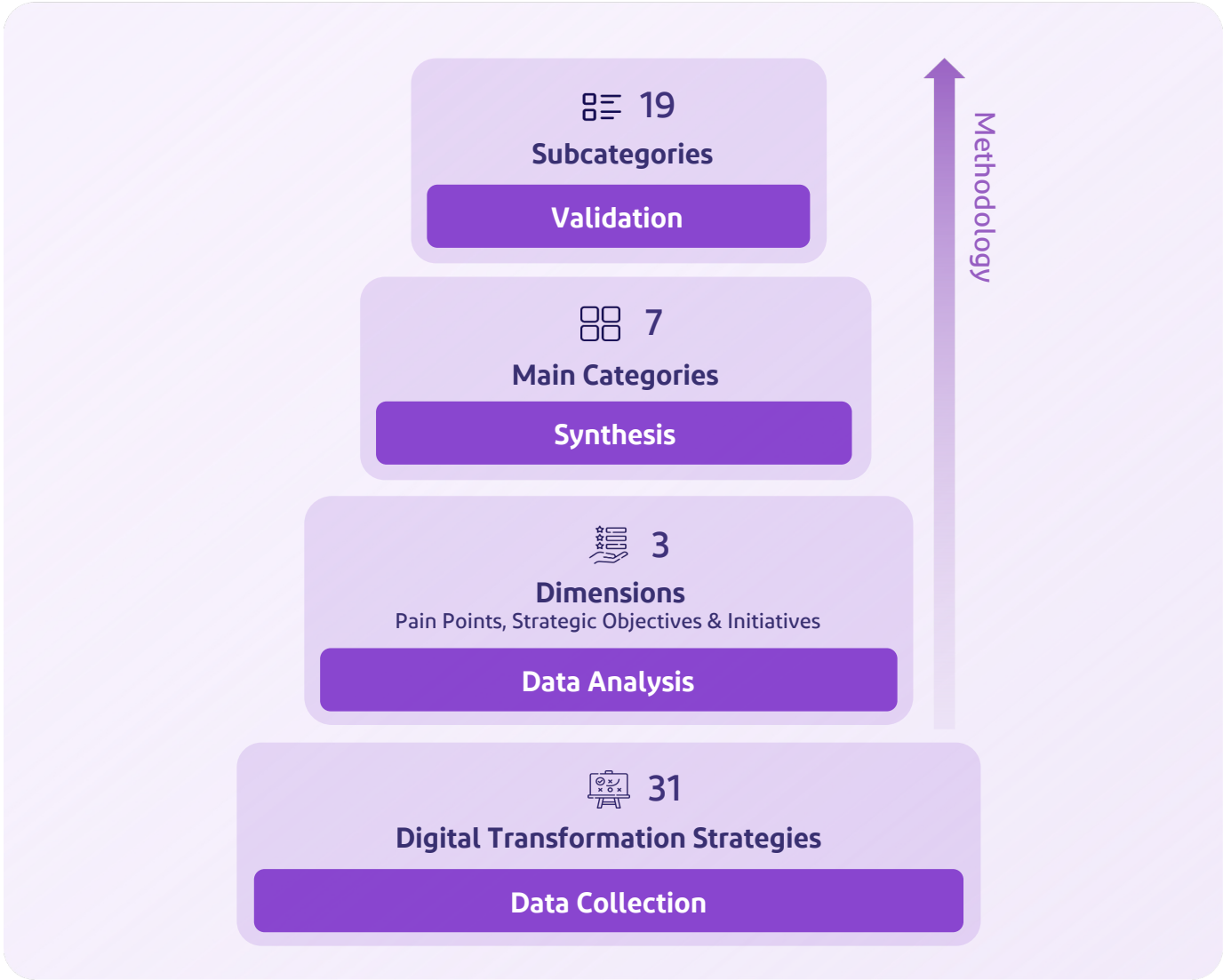


Figure 3: Methodology for analyzing digital transformation strategies

4. Analysis of Pain Points

Through reviewing digital transformation strategies within government entities, particularly SWOT and Gap Analysis, revealed numerous pain points hindering effective transformation. Shown below in Figure 4 shows the distribution of these pain points across categories:

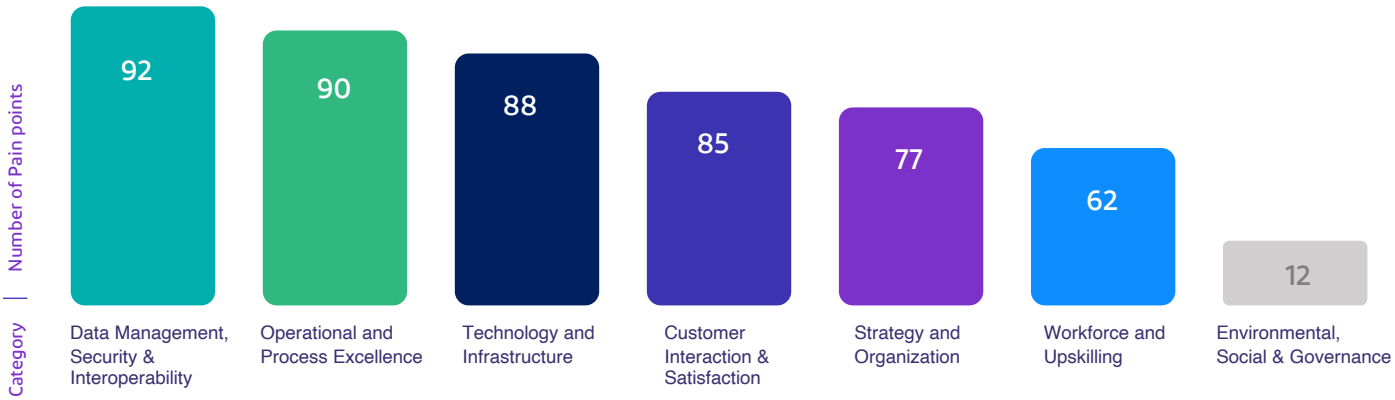


Figure 4: Number of pain points per category

Data Management, Security & Interoperability

was observed to be the primary pain point, constituting 18.2% of the total pain points. This category highlighted challenges pertaining to robust data governance, cybersecurity, and seamless digital interoperability, underlining the critical importance of data integrity, integration & security in the digital era.

Operational and Process Excellence

constituted 17.8% of the total pain points. This category encompasses challenges related to optimizing operational efficiency, implementing best practices, mitigating risk, and enhancing performance management practices to ensure streamlined and effective business operations.

Technology & Infrastructure

accounted for 17.4% of the total pain points, shedding light on the pressing need for modernizing IT infrastructure, enhancing core systems, the adoption of emerging technologies & empowering innovation to support digital transformation initiatives effectively.

Customer Interaction & Satisfaction

constituted 16.8% of the total pain points. This category covers the development of digital platforms, products, and services to meet evolving customer expectations, while also emphasizing the imperative of improving overall customer experience.

Strategy and Organization

Amounted to 15.2%. This category examines the challenges government entities are facing within their strategic direction, policies, internal operating model and organizational structure, and external business model and ecosystem, including partnerships.

Workforce and Upskilling

Accounted for 12.3% of the total pain points, underscoring the significance of technical upskilling, talent acquisition, and knowledge management and awareness practices in fostering a digitally adept workforce.

Environmental, Social & Governance (ESG)

Represented 2.3% of the total pain points, making it the category with the least number of pain points, it highlights the emerging importance of environmental sustainability and social responsibility considerations in digital transformation strategies.

Overall, there is a mostly even split among the top 5 categories. The number of pain points in the remaining 2 categories drops drastically.

A deeper analysis of subcategories was conducted to derive further insights as shown in Figure 5:

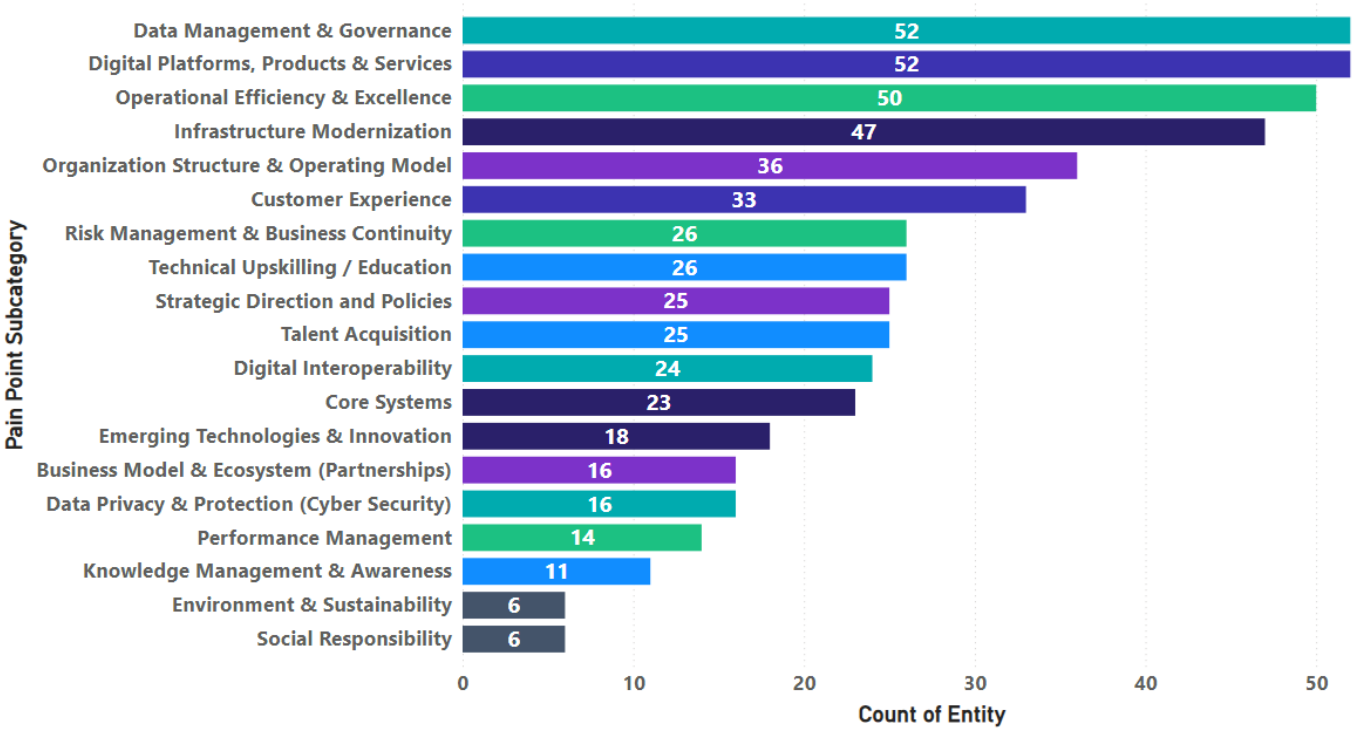


Figure 5: Number of pain points per subcategory

1. Most Common Sub-Pain Points::

The top 6 subcategories – Data Management and Governance; Digital Platforms, Products & Services, Operational Efficiency and Excellence; Infrastructure Modernization; and Organization Structure & Operating Model, Customer Experience – present the highest number of pain points, collectively amounting to over 50% of the total pain points (53.4%). As shown in Table 1

2. Relatively Common Sub-Pain Points:

The next 6 subcategories – Risk Management & Business Continuity, Technical Upskilling/Education, Strategic Direction and Policies, Talent Acquisition, Core Systems and Digital Interoperability had close percentages ranging from 4.5% to 5.1% of the total, and collectively adding up to over 25% of all pain points. (29.4%)

3. Less Common Sub-Pain Points:

Moving onto the 5 subcategories which posed lesser challenges - Emerging Technologies & Innovation, Business Model & Ecosystem (Partnerships), Data Privacy & Protection (Cybersecurity), Performance Management, Knowledge Management & Awareness amounted to the smaller range of percentages from 2.2% to 3.6% of the total. Collectively amounting to 14.8%.

4. Rare Sub-Pain Points:

Lastly, the 2 subcategories which had minimal pain points - Environment & Sustainability and Social Responsibility amounted to a percentage of 1.2% each. Collectively adding up to 2.4%.

Subcategory	% of Category	% of Total
Data Management & Governance	56.5%	10.3%
Digital Platforms, Products & Services	61.2%	10.3%
Operational Efficiency & Excellence	55.6%	9.9%
Infrastructure Modernization	53.4%	9.3%
Organization Structure & Operating Model	46.8%	7.1%
Customer Experience	38.8%	6.5%
Risk Management & Business Continuity	28.9%	5.1%
Technical Upskilling / Education	41.9%	5.1%
Talent Acquisition	40.3%	4.9%
Strategic Direction and Policies	32.5%	4.9%
Digital Interoperability	26.1%	4.7%
Core Systems	26.1%	4.5%
Emerging Technologies & Innovation	20.5%	3.6%
Data Privacy & Protection (Cyber Security)	17.4%	3.2%
Business Model & Ecosystem (Partnerships)	20.8%	3.2%
Performance Management	15.6%	2.8%
Knowledge Management & Awareness	17.7%	2.2%
Environment & Sustainability	50.0%	1.2%
Social Responsibility	50.0%	1.2%

Table 1: Distribution of Pain Points Across Subcategories

5. Global Pain Points:

From the global perspective, several common challenges have been identified that governments and organizations worldwide encounter during their digital transformation journeys[1]:

- **Cybersecurity Risks:**
The omnipresent risk of cyber threats as every connected entity is vulnerable to hacking. Governments and organizations face the inherent impossibility of achieving full-proof security. The strength of a network's security is only as robust as its weakest link. Ensuring robust cybersecurity measures is essential for protecting sensitive data and maintaining trust.

- **Technological Integration Challenges:**
Difficulties in merging legacy systems with cutting-edge technologies impact operational flow and innovation. The integration of new technologies with existing systems can be complex and costly, requiring careful planning and execution.

- **Human Capital and Organizational Culture:**
There is a critical need for skilled talent versed in digital technologies. Establishing a culture that fosters digital literacy and embraces digital changes is vital for the successful implementation of digital strategies.

- **Organizational and Strategic Issues:**
The necessity of a well-defined digital transformation strategy to guide the change process cannot be overstated. Organizations face challenges with change management and driving the adoption of new tools and processes. Dealing with siloed structures hinders integrated decision-making and collaboration, limiting the potential for innovation and efficiency.

- **Financial and Operational Constraints:**
Budget limitations can restrict the scope and scale of digital transformation initiatives. The ongoing need to measure return on investment (ROI) to justify and guide digital expenditures is crucial for maintaining financial sustainability and demonstrating the value of digital projects.

- **Market and Customer Dynamics:**
Adapting to the continuously evolving needs and behaviors of customers in a digital-first market is imperative for organizations. Understanding market trends and customer preferences allows for the development of targeted strategies that enhance customer satisfaction and loyalty.

6. Solutions to Global Pain Points

Internationally, various solutions have been adopted to address these challenges through implementing the following strategies[2][3]:

- **Technology and security investments**
focus on utilizing digital adoption platforms to streamline and secure the integration of new technologies.

- **Strategic and organizational change management:**
involves forming a dedicated change leadership team to steer digital transformation efforts effectively, aligning digital transformation objectives with overarching business goals to ensure strategic coherence, and breaking down silos to enhance collaboration and decision-making across departments.

- **Talent management and cultural shifts**
are also crucial, with organizations considering hiring or consulting with digital transformation experts to infuse new thinking and skills, and cultivating a culture that values agility, continuous learning, and open feedback to stay adaptive and innovative.

- **Operational and financial planning:**
emphasizes fostering agility in operations to quickly respond to market changes and technological advancements, encouraging ongoing employee feedback and participation in the transformation process, and implementing continuous monitoring and adaptation mechanisms to align initiatives with dynamic market and customer needs.

5. Analysis of Strategic Objectives

Following the analysis of pain points, the study delved into the second dimension: Strategic Objectives. Figure 6 below shows the categorization of strategic objectives:

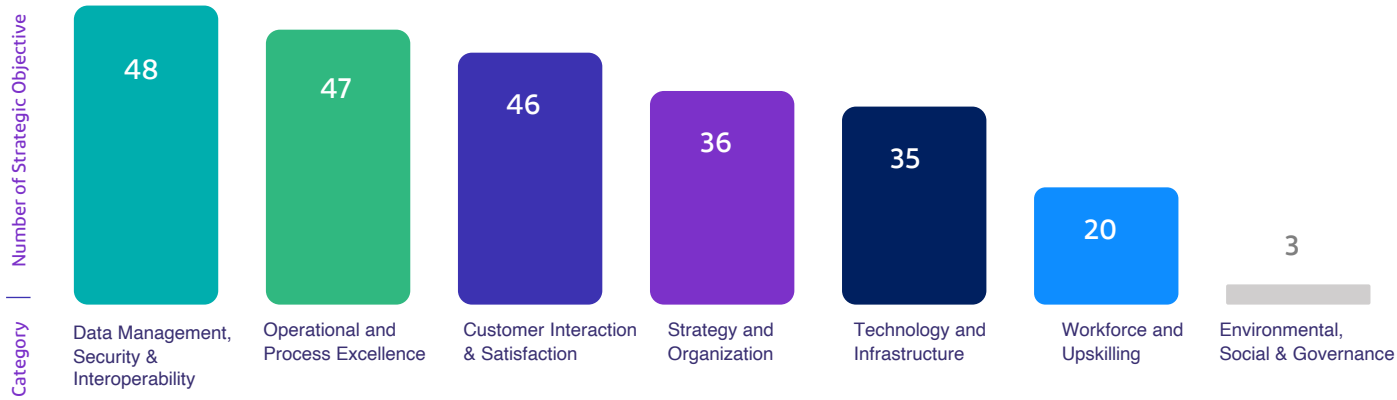


Figure 6: Number of strategic objectives per category

Data Management, Security & Interoperability:

There is a significant emphasis on data management, security, and interoperability, constituting 20.4% of the total strategic objectives. This reflects the country's commitment to ensuring the integrity, security, and accessibility of government data while fostering interoperability across systems to facilitate efficient information exchange.

Operational and Process Excellence:

accounts for 20% of the total strategic objectives in governmental entities. This highlights the government's focus on streamlining administrative processes, enhancing operational efficiency, and optimizing resource utilization to deliver seamless government services.

Customer Interaction & Satisfaction:

Constitute 19.6% of the total strategic objectives, underscoring the efforts to improve citizen engagement and enhance the overall satisfaction of users interacting with government services. This aligns with the country's goal of providing accessible, user-centric, and responsive digital services.

Strategy and Organization:

Represent 15.3% of the total strategic objectives, reflecting the government's commitment to strategic planning organizational alignment, and effective governance structures to drive successful digital transformation initiatives across government entities.

Environmental, Social & Governance (ESG):

Represent 1.3% of the total strategic objectives. While not as prominent, this reflects the government's growing awareness of the importance of incorporating ESG principles into digital transformation initiatives to promote sustainability and social responsibility.

Workforce and Upskilling:

Workforce development and upskilling constitute 8.5% of the total strategic objectives, highlighting governmental entities recognition of the importance of building a skilled workforce capable of driving digital innovation.

Technology & Infrastructure:

Account for 14.9% of the total strategic objectives, indicating a focus on modernizing technology infrastructure to support digital transformation efforts. This includes investments in IT infrastructure, adoption of emerging technologies, and development of digital platforms to enable innovative government services.

Overall, and as was observed in the pain points, there is a mostly even split among the top 5 categories. There is then a considerable drop in focus for the last 2 categories. It is worth noting that the top 5 categories remain the same compared to the pain points – indicating a strong alignment, as the pain points to be address fall in the same categories as the strategic priorities.

Next, the focus area of the strategic objectives is examined in greater detail to gain further visibility, as shown in the graph below:

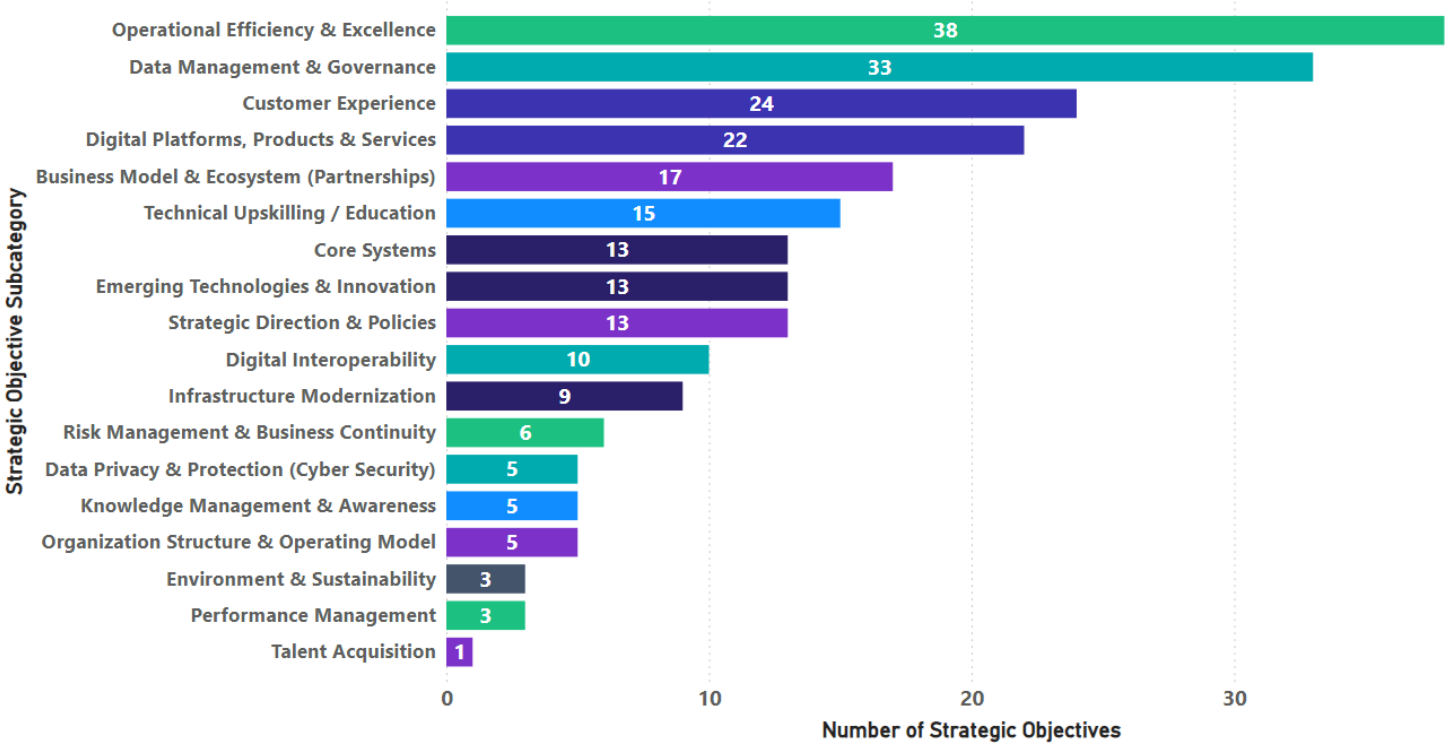


Figure 7: Number of strategic objectives per subcategory

1. Primary Goals:

The top 5 focus areas of the strategic objectives were found to be Operational Efficiency & Excellence; Data Management & Governance; Customer Experience; Digital Platforms, Products & Services; and Business Model & Ecosystem (Partnerships). Collectively, these top 5 accounted for more than half the total focus across all subcategories. (57.0%). As shown in Table 2.

2. Secondary Targets:

The following 5 focus areas Technical Upskilling, Education, Core Systems / Emerging Technologies & Innovation, Strategic Direction & Policies, and Digital Interoperability were found to be of similar importance ranging from 4.3% to 6.4% to totaling over 25% (27.2%).

3. Lesser Strategic Emphasis:

The following 5 focus areas: Infrastructure Modernization, Risk Management & Business Continuity, Privacy & Protection (Cyber Security), Knowledge Management & Awareness and Organization Structure & Operating Model constituted smaller percentages ranging from 2.1% to 3.8%. Totaling 12.7%.

4. Emerging & Long-term Considerations:

The 4 subcategories with the least strategic focus are Environment & Sustainability, Performance Management, Talent Acquisition, and Social Responsibility, totaling 3%. This suggests room for growth, especially in integrating environmental, social, and talent-related aspects into long-term strategic objectives.

Subcategory	% of Category	% of Total
Operational Efficiency & Excellence	80.9%	16.2%
Data Management & Governance	68.8%	14.0%
Customer Experience	52.2%	10.2%
Digital Platforms, Products & Services	47.8%	9.4%
Business Model & Ecosystem (Partnerships)	47.2%	7.2%
Technical Upskilling / Education	75.0%	6.4%
Core Systems	37.1%	5.5%
Emerging Technologies & Innovation	37.1%	5.5%
Strategic Direction & Policies	36.1%	5.5%
Digital Interoperability	20.8%	4.3%
Infrastructure Modernization	25.7%	3.8%
Risk Management & Business Continuity	12.8%	2.6%
Privacy & Protection (Cyber Security)	10.4%	2.1%
Knowledge Management & Awareness	25.0%	2.1%
Organization Structure & Operating Model	13.9%	2.1%
Environment & Sustainability	100%	1.3%
Performance Management	6.4%	1.3%
Talent Acquisition	2.8%	0.4%
Social Responsibility	0%	0%

Table 2: Distribution of Strategic Objectives Across Subcategories

5. Global Strategic Objectives:

From the previously analyzed data, a clear alignment is observed between Saudi's government entities' strategic objectives and global trends in digital transformation, highlighting their commitment to staying informed of international best practices and standards:

- **Data Management, Security & Interoperability:**

This emphasis reflects a global trend where governments prioritize data integrity, security, and accessibility while promoting interoperability for efficient information exchange. Countries like the United States[5], Singapore[6], and Australia[7] have also placed significant focus on data management and security, implementing initiatives such as digital identity platforms and central data portals to enhance transparency and accountability. Additionally, regulations like the General Data Protection Regulation (GDPR)[8] in the European Union have further underscored the importance of robust data management practices and security measures to protect individual privacy rights and mitigate data breaches.

- **Operational and Process Excellence:**

The focus on this category aligns with global efforts to streamline administrative processes, enhance operational efficiency, and optimize resource utilization. Governments worldwide, including those in the European Union and Estonia[9] in particular, have implemented strategic frameworks and initiatives to modernize governance structures, improve service delivery, and drive operational excellence. In line with this, Saudi Arabia's National Digital Government Strategy (NDGS) emphasizes the importance of Effective Government & Efficient Investment, highlighting a strategic alignment with global trends in enhancing operational processes for better government performance.

- **Customer Interaction & Satisfaction:**

The prioritization of this category underscores the global recognition of the importance of citizen engagement and user satisfaction in digital transformation initiatives. Countries like the United States and Estonia[10] have established digital service teams and user-centered design approaches to deliver better digital experiences for citizens, reflecting a shared commitment to providing accessible and responsive government services. Similarly, the NDGS consists of the pillar of Satisfied Citizens, emphasizing the significance of citizen-centric approaches in the digital transformation journey.

- **Technology & Infrastructure:**

The emphasis placed on this category proves entities' dedication to modernizing its technological framework to facilitate digital transformation endeavors. For instance, South Korea's Digital New Deal initiative exemplifies this global trend, prioritizing investments in 5G networks, artificial intelligence, and cloud computing to accelerate digitalization efforts.[11] This international example mirrors the local commitment to advancing its technology infrastructure in alignment with its digital transformation agenda. Just as the National Digital Government Strategy (NDGS) prioritizes robust technology infrastructure in enabling the delivery of efficient and innovative government services, underscoring Saudi governments' journey towards digital modernization through the pillar of Expedited Transformation.

- **Environmental, Social, and Governance (ESG) & Workforce and Upskilling:**

While the government entities' strategic objectives closely align with global trends, there is also room for further integration of Environmental, Social, and Governance (ESG) considerations, as well as Workforce and Upskilling initiatives. Countries like Germany[12] and Denmark[13] have prioritized environmental sustainability and workforce development in their digital transformation agendas, showcasing the importance of these areas in driving long-term growth and resilience.

By aligning its strategic objectives with global best practices and leveraging lessons learned from successful digital transformation projects worldwide, the government of Saudi Arabia can accelerate its digital capabilities and contribute to the global advancement of digital governance and innovation.

6. Analysis of Initiatives

The focus and density of initiatives within the mentioned categories are shown in figure 8 below:

Figure 8: Number of Initiatives per Category

Technology and Infrastructure & Infrastructure:

The primary focus area, accounting for approximately 23.7% of all initiatives, the analyzed entities realize that technology and the underlying infrastructure is at the heart of digital transformation, as indicated by the notably higher density of initiatives in this category.

Customer Interaction & Satisfaction:

Representing 18.2% of the total initiatives, this category directly aligns with the Satisfied Citizens pillar of the National Digital Government Strategy.

Strategy and Organization:

With 16.7% of the total initiatives, this category directly aligns with the Regulated Ecosystem pillar of the National Digital Government Strategy.

Data Management, Security & Interoperability:

Comprising 16.1% of the total initiatives, this category signifies efforts to address data management, security, and interoperability challenges crucial for digital transformation.

Operational and Process Excellence:

Accounting for 15.1% of the total initiatives, not only does this category focus on optimizing operational processes to enhance overall efficiency and effectiveness, it also directly aligns with several pillars of the NDGS, namely Effective Government & Efficient Investment.

Environmental, Social & Governance:

Representing only about 1.2% of the total initiatives, this disparity indicates potential for improvement in integrating sustainability, social responsibility, and governance considerations into digital transformation strategies.

Workforce and Upskilling:

Representing 9% of the total initiatives, this category indicates a lesser focus on upskilling the workforce to meet the demands of digital transformation.

This placement of initiatives reinforces that, after assessing the current state of governmental entities and identifying their pain points, the strategic objectives and corresponding initiatives were specifically designed to address these challenges. The distribution of initiatives across various focus areas in the entities' digital transformation strategies highlights a primary emphasis on technology infrastructure, customer interaction, organizational strategy, data management, and operational excellence. While workforce upskilling is also evident, the data suggests this is a secondary focus area.

This overarching approach highlights the government's commitment to enhancing digital capabilities and service delivery while gradually incorporating broader societal impacts.

Next, the initiatives are examined in greater detail to gain visibility on how efforts are allocated, considering the distribution of pain points and strategic objectives, as shown in figure 9 below:

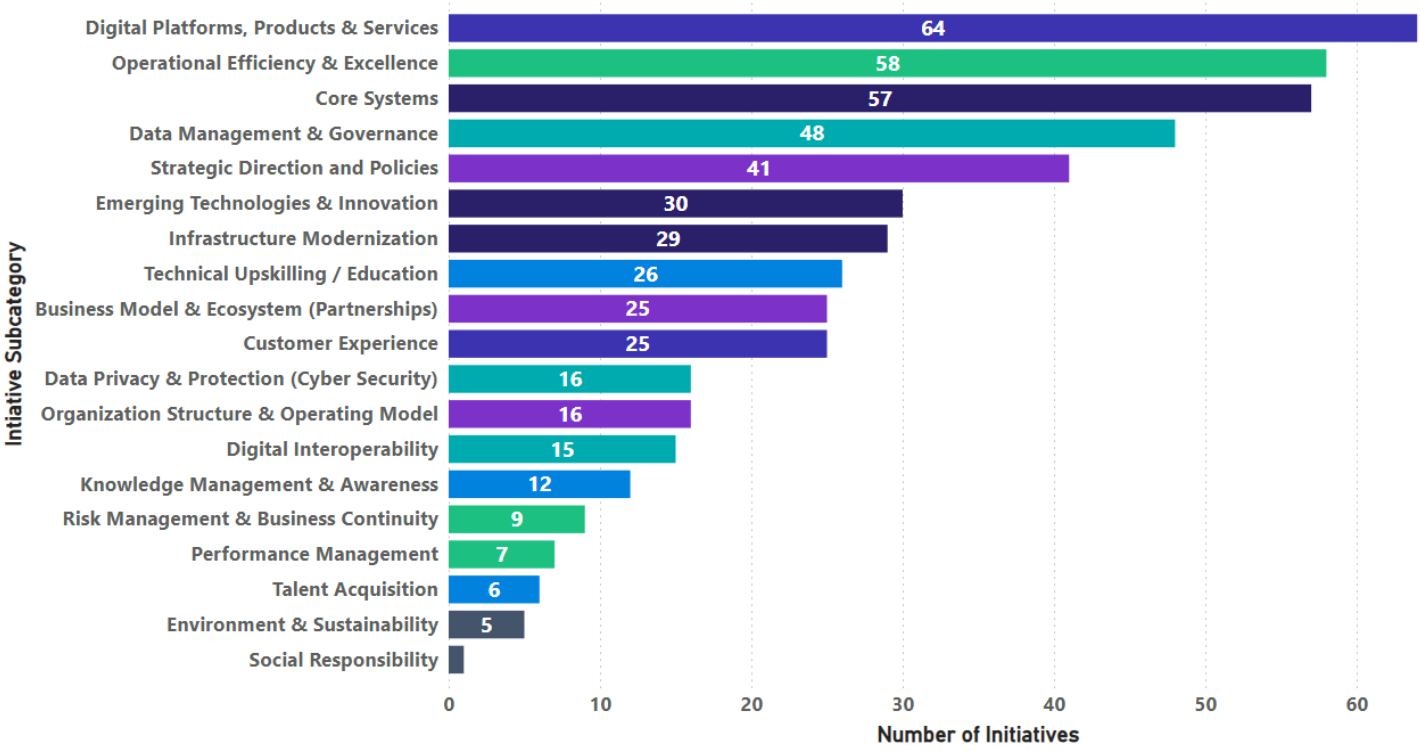


Figure 9: Number of Initiatives per subcategory

1. Primary Focus Areas:

The top 5 focus areas of the initiatives were found to be: Digital Platforms, Products & Services, Operational Efficiency & Excellence, Core Systems, Data Management & Governance, and Strategic Directions & Policies. Collectively, these top 5 accounted for more than half the total number of initiatives across all subcategories (54.7%). As shown in Table 3.

2. Secondary Focus Areas:

The allocation of digital initiatives was relatively lower in the focus areas of Emerging Technologies & Innovation, Infrastructure Modernization, Technical Upskilling / Education, Customer Experience, and Business Model & Ecosystem (Partnerships).

3. Lesser Strategic Emphasis:

There was less strategic focus in initiatives related to the Organization Structure & Operating Model, Data Privacy & Protection (Cyber Security), Digital Interoperability, Knowledge Management & Awareness, and Risk Management & Business Continuity. These areas represented a low focus, ranging between 1.8% and 3.3% and collectively accounted for 13.9%.

4. Emerging & Long-term Considerations:

The 4 subcategories with the least number of initiatives are Performance Management, Talent Acquisition, Environment & Sustainability, and Social Responsibility, totaling 3.8%.

Subcategory	% of Category	% of Total
Digital Platforms, Products & Services	71.9%	13.1%
Operational Efficiency & Excellence	78.4%	11.8%
Core Systems	49.1%	11.6%
Data Management & Governance	60.8%	9.8%
Strategic Direction and Policies	50.0%	8.4%
Emerging Technologies & Innovation	25.9%	6.1%
Infrastructure Modernization	25.0%	5.9%
Technical Upskilling / Education	59.1%	5.3%
Customer Experience	28.1%	5.1%
Business Model & Ecosystem (Partnerships)	30.5%	5.1%
Organization Structure & Operating Model	19.5%	3.3%
Data Privacy & Protection (Cyber Security)	20.3%	3.3%
Digital Interoperability	19.0%	3.1%
Knowledge Management & Awareness	27.3%	2.4%
Risk Management & Business Continuity	12.2%	1.8%
Performance Management	9.5%	1.4%
Talent Acquisition	13.6%	1.2%
Environment & Sustainability	83.3%	1.0%
Social Responsibility	16.7%	0.2%

Table 3: Distribution of Initiatives Across Subcategories

As mentioned in the previous page, the primary focus area of the initiatives was Digital Platforms, Products & Services. Over the past few years this has been evident with the emergence of various applications and platforms providing services to citizens and residents of Saudi Arabia, examples of these are provided in figure 10 below:[14]

Figure 10: Applications and platforms providing citizens with services across Saudi Arabia

Other primary focus areas included Operational Efficiency & Excellence, Core Systems, Data Management & Governance, and Strategic Directions & Policies. All these areas were significantly impacted by the emergence of numerous applications, platforms, and the services provided within them. These developments facilitated data-driven decision-making, enabling Saudi government entities to operate in more efficient, citizen-centric, and transparent ways.

The figure above shows approximately 100 applications and platforms that are available on the GOV.SA Unified National Platform, with 2000+ services provided to 36M+ daily users.[14]

5. Global Initiatives:

From the previously analyzed data, there is a clear alignment between Saudi Arabia's government entities' strategic initiatives and global trends in digital transformation, highlighting the nation's commitment to international best practices and standards:

Technology & Infrastructure

This emphasis mirrors a global trend where governments prioritize modernizing their technological framework to facilitate digital transformation. The focus on technology and infrastructure, which accounts for approximately 23.7% of all initiatives, demonstrates a significant investment in this area. Countries like South Korea, through its Digital New Deal, emphasize investments in 5G networks, artificial intelligence, and cloud computing to accelerate digitalization efforts [15] [16]

Customer Interaction & Satisfaction

About 18.2% of initiatives fall within this category, which aligns with the global emphasis on citizen engagement and user satisfaction in digital transformation. Countries like the US and Estonia have adopted digital service teams and user-centered design to enhance digital experiences and provide accessible, responsive government services.[15]

Data Management, Security & Interoperability

Comprising 16.1% of the total analyzed initiatives, these efforts signify the importance of ensuring data integrity, security, and accessibility. Globally, countries like the United States, Singapore, and Australia have emphasized data management and security, implementing digital identity platforms and central data portals to enhance transparency and accountability. Additionally, regulations like the General Data Protection Regulation (GDPR) in the European Union underscore the importance of robust data management practices and security measures to protect individual privacy rights. [15] [17]

Strategy and Organization

This category, accounting for 16.7% of the total initiatives in this study, mirrors the strategic frameworks and initiatives implemented by governments worldwide to modernize governance structures and improve service delivery. This approach aligns with the European Union's efforts to enhance operational efficiency through strategic policy frameworks.[16]

Operational and Process Excellence

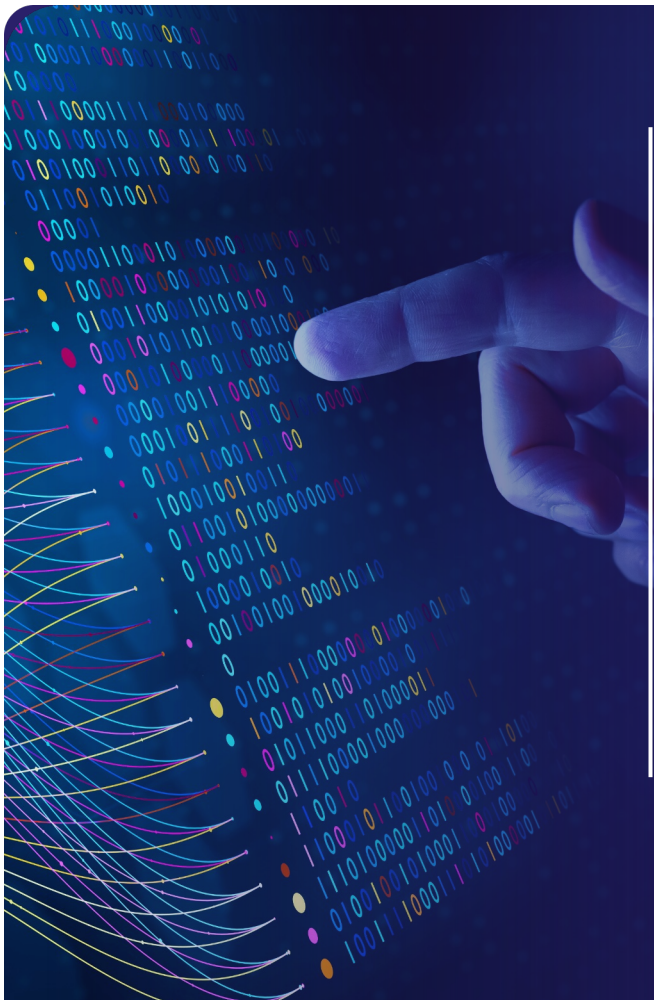
About 15.1% of the initiatives focused on this category which aligns with global efforts to streamline administrative processes and optimize resources. Governments in the EU and Estonia have adopted strategic frameworks to modernize governance and drive operational excellence, reflecting a global trend towards improved government performance. [15] [16]

Workforce and Upskilling

This category, consisting of 9% of the initiatives, highlights the need for upskilling the workforce to meet the demands of digital transformation. Countries like Germany and Denmark have prioritized workforce development in their digital transformation agendas, showcasing the importance of these areas in driving long-term growth and resilience [15] [17]

Environmental, Social & Governance (ESG)

These considerations, though currently representing only about 1.2% of the analyzed initiatives, indicate a potential for future integration. Globally, there is a growing trend towards incorporating sustainability, social responsibility, and governance considerations into digital transformation strategies, as seen in countries like Germany and Denmark [15]



By aligning their strategic initiatives with global best practices and leveraging lessons learned from successful digital transformation projects worldwide, these entities can accelerate their digital capabilities & contribute to the global advancement of digital governance and innovation.

7. Conclusion & Recommendation

In conclusion, the meta-study conducted by the Digital Government Authority of Saudi Arabia provides a comprehensive analysis of the digital transformation efforts within government entities, its scope covered 31 Digital Transformation Strategies, 506 Pain Points, 235 Strategic Objectives, 490 Transformation Initiatives across all 8 government sectors, starting from 2022.

7.1 Main Conclusions:

The study identified a set of key findings, highlighting the challenges and opportunities in the digital transformation journey of Saudi Arabia's governmental entities. The findings offer a comprehensive insight into the current landscape and future prospects in the Kingdom of Saudi Arabia. By addressing these challenges, the government entities can develop well-established strategies that shape its digital future.

Category	% Pain Points	% Objectives	% Initiatives
Strategy and Organization	15.2%	15.3%	16.7%
Customer Interaction & Satisfaction	16.8%	19.6%	18.2%
Operational and Process Excellence	17.8%	20%	15.1%
Data Management, Security & Interoperability	18.2%	20.4%	16.1%
Technology & Infrastructure	17.4%	14.9%	23.7%
Workforce and Upskilling	12.3%	8.5%	9%
Environmental, Social, and Governance (ESG)	2.3%	1.3%	1.2%

The data above displays the frequency of occurrences of pain points, strategic objectives, and initiatives— the three main dimensions of the study— confirming the proactive approach taken to address pain points due to the closeness of the percentages.

7.2 General Recommendations of the Study:

Considering the findings from this meta-study, it can be considered that the efforts made by government entities are being strategically allocated, aligned with global trends, aiming to achieve Saudi Arabia's ambitious goals in digital transformation.

▪ Enhancing data governance

Data governance is the foundation upon which digital transformation is built. It ensures the integrity and integration of data and enhances collaboration between government entities. Through establishing a robust data governance framework, information becomes more accurate, secure, and easily accessible, contributing to more precise decision-making and increasing trust in digital government services. Achieving data governance is not merely about infrastructure development; it is a journey towards greater integration between government entities, stronger protection against cyber threats, and establishing a solid foundation for data-driven policies and public services.

Enhancing Data Governance: The Key to Security in the Digital Age (Continued)

Why does data governance need enhancements?

Studies show that "data management and integration" are the biggest challenges in digital transformation, making up 18.2% of the total. International experiences, like those in Singapore and Australia, highlight the importance of data governance. In the analyzed entities, improving "data management and governance," which accounts for 10.3% of the challenges, will enhance data security and exchange between entities, laying a strong foundation for Saudi Arabia's digital government future.

Continue to Enhance Customer-Centric Services:

Utilizing advanced technologies to refine customer interactions ensures that digital solutions are designed with the end-user in mind, improving accessibility and addressing specific needs. This focus on customer-centric services makes interactions with the government more efficient and pleasant, leading to increased engagement and satisfaction from beneficiaries. Additionally, it reduces service delivery costs and boosts public perception of government efficiency.

Why does customer service need enhancements?

Countries like Estonia and the United States have succeeded in implementing citizen-centric digital strategies, achieving tangible improvements in service delivery. The study shows that "customer interaction and satisfaction" represent 16.8% of the challenges and 18.2% of the initiatives, underscoring its significant importance. Enhancing "digital platforms, products, and services" (13.1% of initiatives) and "customer experience" (5.1%) will enhance the quality of government services directed towards customers, aligning with the goals of Vision 2030.

Monitor and Adapt to Global Trends:

Regularly aligning with global digital trends and best practices ensures dynamic and effective strategies while fostering collaborations between government entities, the private sector, and academia to cultivate innovation in digital services. This proactive approach enables government entities to implement best practices, leverage emerging technologies, and anticipate shifts in the digital landscape. Consequently, government entities can remain competitive on the international stage, adapt to global changes in technology and governance, and potentially lead in certain areas of digital innovation.

Why do governments need to keep up with global trends?

It is worth mentioning that leading countries like the United States and South Korea heavily invest in emerging technologies such as 5G networks and Artificial Intelligence (AI), setting benchmarks and indicators that the entities can emulate. According to the study, "technology and infrastructure" constitute 23.7% of all initiatives, underscoring their pivotal role in maintaining global competitiveness. Enhancing initiatives in "emerging technologies and innovation" (6.1%) will assist the government of Saudi Arabia in leveraging global trends in innovation.

Workforce development: Supporting transformation and investing in the future

As Saudi Arabia steadily progresses toward a prosperous digital future, workforce development emerges as a fundamental factor in digital transformation and in building a prosperous digital future. Enhancing digital skills and empowering government employees, through continuous upskilling and training, to keep pace with rapid technological advancements is essential to fostering innovation and supporting modern digital solutions. This development opens doors to improving public services and increasing their efficiency. It not only reduces the digital skills gap but also promotes a culture of continuous learning and adaptation within government entities, leading to a more innovative and productive work environment.

Why is workforce development needed?

According to the study, "workforce development" accounts for only 9% of initiatives and 8.5% of strategic objectives, indicating a wide area for improvement. Models like Germany's Digital Strategy 2025 and Denmark's Digital Transformation Strategy underscore the importance of education and technical training in achieving digital transformation. Addressing challenges in skill acquisition (4.9%) and technical education and training (5.1%) can bridge the digital skills gap, positioning government entities to leverage technological innovations effectively.

Streamline Operational Processes Automation:

Accelerating the adoption of process automation in government operations increases efficiency, reduces human error, and frees up resources for more complex tasks requiring human oversight. This greater operational efficiency can be achieved through automation technologies such as Robotic Process Automation (RPA), leading to faster service delivery times and reduced operational costs. Ultimately, this benefits the public through quicker and more reliable government services.

Why is operational processes automation an important step for governments?

The study indicates that "Operational Excellence and Operations" represent 17.8% of challenges and 15.1% of initiatives, highlighting the critical need for process improvement. International practices show that automation is a key driver for efficiency gains. Streamlining "Operational Efficiency and Excellence" (11.8% of initiatives) will contribute to enhancing government operations, aligning with Vision 2030 goals to achieve effective governance and efficient investment.

Enhance Digital Infrastructure:

Investing in robust digital infrastructure is crucial as it serves as the backbone for effective digital transformation. It supports the scalability and integration of future technologies, ensuring reliability and security while enabling the adoption of advanced innovations. This investment prepares government entities to meet future digital demands, supports sustained economic growth, and enhances resilience against potential digital disruptions. By building a strong digital foundation, government entities can better withstand and adapt to the rapid changes in the digital landscape.

Why is enhancing digital infrastructure needed?

The study indicates that "technology and infrastructure" constitute 23.7% of all initiatives, highlighting its critical importance. Aligning with globally leading countries like South Korea which prioritizes infrastructure heavily in their digital agendas. Investing in "infrastructure upgrades" (5.9% of initiatives) and "core systems" (11.6%) will enhance the strength of digital infrastructure in Saudi Arabia, making it prepared to address any digital challenges or future developments effectively.

Priority of Implementing Environmental, Social, and Governance (ESG) Principles for Achieving Sustainable and Responsible Digital Transformation

Implementing ESG principles in digital strategies is essential for sustainable transformation, meeting current needs while ensuring future generations' needs. Integrating these principles achieves sustainable development and responsible governance, demonstrating Saudi Arabia's commitment to global best practices in sustainability. Adhering to ESG principles will enhance the government's commitment to sustainability.

Why is it necessary to implement ESG principles?

The study indicates that ESG principles currently represent only 1.2% of strategic objectives and digital transformation initiatives, signaling the need for more focus in this area. Globally, countries like Germany and Denmark have successfully integrated these principles into their digital strategies, offering models for the analyzed entities to follow. Commitment to these principles will bolster Saudi Arabia's pursuit of Vision 2030 regarding environmental sustainability and social responsibility, which currently account for 1.2% of the challenges. Addressing challenges is crucial to keeping pace with developments and achieving the objectives of a sustainable and more adaptable digital transformation.

Facilitating Digital Access: Innovative Partnerships and Solutions for the Future

Achieving a positive impact of digital transformation on all citizens requires facilitating access to digital services, especially for less developed communities. Innovation ecosystems can connect government entities, academia, the private sector, and innovators, enabling the creation of collaborative and creative solutions. This cooperation enhances technological development and accelerates the provision of necessary solutions in response to current and future challenges. Establishing such partnerships can lead to innovative solutions that simplify government processes and improve services needed by users, positioning Saudi Arabia as a leader in digital innovation.

Why is it necessary to facilitate digital access?

The study shows that "business models and the ecosystem (partnerships)" make up only 5.1% of initiatives, indicating significant growth potential. Addressing challenges here will enhance collaboration, innovation, and access to digital services. This approach fosters creative solutions and strengthens efforts between government entities, the private sector, and academia for a prosperous digital future.

Establishing Effective and Regular Channels for Collecting User Feedback: The Path to Exceptional Digital Services

Continuous development requires listening to diverse opinions to meet user needs quickly. Establishing effective feedback channels aims to continuously improve governmental digital services, ensuring user expectations are met and their changing needs are addressed. Implementing these feedback channels will enhance the quality of digital services, increase user satisfaction, and boost public trust by committing to transparency and ensuring rapid and effective responses.

- **Establishing Effective and Regular Channels for Collecting User Feedback: The Path to Exceptional Digital Services (Continued)**

    - **Why is it necessary to establish effective and regular channels for collecting user feedback?**

    The study indicated that "customer engagement and satisfaction" represents a significant strategic goal at 19.6%. Establishing regular channels for collecting user opinions and suggestions in Saudi Arabia will enhance the "customer experience" (5.1% of initiatives), contributing to the delivery of government services that prioritize users. This approach aligns with global best practices followed by leading countries such as Estonia and the United States, where these channels are effectively used to improve their digital services.

7.3 Recommendations for Future Research

In line with enhancing the comprehensiveness and applicability of future studies, this section provides recommendations to improve the methodology and scope of similar studies and suggests directions for leveraging current findings for further research.

7.3.1. Enhancements for Future Studies

- **Expand the Number of Entities Studied:**

Future research should consider including a larger number of government entities to provide a more holistic view of digital transformation efforts across the country. Increasing the sample size can lead to more generalized findings and help identify broader trends and unique challenges faced by different types of entities.

- **Incorporate Longitudinal Data**

To capture the evolution of digital transformation efforts, future studies could benefit from a longitudinal approach, tracking the progress of digital initiatives over time. This would provide insights into the effectiveness of strategies and the impact of adjustments made in response to emerging challenges and opportunities.

- **Utilize Mixed-Methods Research**

Combining quantitative data with qualitative insights from interviews and case studies can enrich the analysis. This mixed-methods approach would allow for a deeper understanding of the contextual factors influencing digital transformation and the experiences of various stakeholders involved in these initiatives.

- **Leverage Advanced Analytics**

Employing advanced analytical techniques, such as machine learning and big data analytics, could enhance the ability to identify patterns and predict outcomes. These technologies can help uncover hidden insights and provide more accurate forecasts for future digital transformation trends.

- **Benchmark Against International Standards**

Including more comparative analyses with international benchmarks can highlight best practices and areas for improvement. This would involve systematically comparing the digital transformation strategies of Saudi government entities with those of leading countries in digital governance, such as Estonia, Singapore, and South Korea.

- **Presenting Case Studies & Success Stories Addressing Similar Challenges**

To further enrich the analysis and make the findings more practical, future studies should consider incorporating case studies or practical examples. By presenting how other government entities have successfully addressed similar challenges related to data management, security, interoperability, operational excellence, and customer satisfaction, the study can offer concrete solutions and actionable insights.

- **Identifying Root Causes of Pain Points**

By establishing direct communication channels with the entities, the study can further be enriched by incorporating information on the root causes of challenges and pain points faced by government entities, providing a fuller picture on the obstacles faced throughout the journey, and how they change as the digital transformation progresses.

7.4 Using This Study as a Basis for Future Research

- **Deep Dive into Specific Focus Areas:**

The study highlights key areas: Technology & Infrastructure, Customer Interaction & Satisfaction, and Data Management. Future research could explore these areas in detail to uncover strategies for success.

- **International Comparisons:**

Expanding the scope to include a comparative analysis with other countries can offer valuable insights. Examining how similar digital transformation initiatives are implemented in different cultural and regulatory contexts can provide globally applicable lessons.

- **Impact Assessment of Digital Initiatives:**

Future research could assess the impact of specific digital transformation initiatives by evaluating socio-economic benefits, user satisfaction, and efficiency gains, offering a clearer view of their effectiveness.

- **Exploration of Emerging Technologies:**

As technologies like AI, blockchain, and IoT rapidly advance, future studies should explore their integration into government services, identifying potential applications, benefits, and challenges.

- **Introducing KPI's for measurement**

Future studies should focus on integrating key performance indicators (KPIs) to measure objectives, providing examples within a government context to offer practical insights for better monitoring and evaluation of digital transformation efforts.

- **Focus on Environmental, Social, and Governance (ESG) Factors:**

With the growing focus on sustainability and social responsibility, future research should explore how digital transformation strategies can integrate ESG principles, examining how digital solutions can promote environmental sustainability, social equity, and good governance.

- **Incorporate a SWOT Analysis of Governmental Sectors:**

Future studies should include a SWOT analysis of governmental sectors as the number of strategies increase, highlighting common strengths, weaknesses, opportunities, and threats in the digital transformation journey to produce practical, actionable recommendations

- **Explore Economic Impact and Public-Private Partnerships:**

Future research should explore how public-private partnerships and investments drive digital transformation efforts and explore ways to launch digital initiatives to enhance innovation and economic growth.

By adopting these recommendations, future research can build upon the current study's findings, providing more robust and actionable insights into the digital transformation of government entities. This iterative approach to research will help ensure that digital strategies remain adaptive, effective, and aligned with global best practices.

The Authority expresses its deep gratitude for the significant digital transformation efforts made by government entities in Saudi Arabia. DGA appreciates the dedication and hard work shown by all employees in these entities, recognizing that these achievements would not have been possible without effective collaboration and a firm commitment to achieving Vision 2030.

The Authority look forward to maintaining this positive momentum and are confident that Saudi Arabia will continue to make steady progress towards a bright and prosperous digital future.

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