DIGITAL TRANSFORMATION
IN THE KINGDOM OF SAUDI ARABIA

The Kingdom of Saudi Arabia has taken leaps in incubating digital technologies into various aspects of the country's economy, society, and government, ensuring a development in the technological strategies adopted by governmental entities. These strategies aim to enable and accelerate the government's transformation efficiently and effectively. In line with Vision 2030, the digital transformation of the Saudi government is an integral, conclusive, and pragmatic strategy that aims to lead a change in the market. We will explore the Kingdom's fundamental strategies and policies set out in order to incubate digital transformation in KSA, highlighting the challenges and future projects implemented into the Kingdom.

Growth of the Digital Sector
in the Kingdom of Saudi Arabia

MINISTRY OF COMMUNICATIONS
AND INFORMATION TECHNOLOGY
وزارة الاتـــصـــالات
وتقنيــة المعلـــومـــات

The Kingdom's goal since 2019 was to grow the information technology and communication sector by 50% and increase its contribution to the GDP by SAR 50 billion (as per the Strategy of the Ministry of Communications and Information Technology Report). In addition, the government of the Kingdom has invested in digital infrastructure, including high speed internet, data capacity, and mobile technology. The internet penetration in the Kingdom reached 98% (as per the CITC report in 2021).

The steps taken by the Kingdom is reflected in the overall score of the Digital Experience Maturity Index for Government Services, reaching 77.26% at the Competent Level which was included in its first cycle in 2022, assessing twelve priority government platforms in accordance with the perspectives and themes in this report. This reveals that these platforms are progressing in most themes of digital experience and have the readiness to advance towards an integrated digital experience (Digital Government Authority – Digital Experience Maturity Index for Government Services 2022).

By incubating these necessary platforms and infrastructure, the Kingdom has already begun its preparation in achieving the overall goal set to be achieved in Vision 2030, for a successful digital transformation.

Fundamental
Strategies and Policies

The Kingdom has set out six fundamental strategies, which are: Saudi Vision 2030, Digital Inclusion, E-Participation, Data Protection and Privacy, National Strategy for Data and AI, and National Cybersecurity Strategy. These fundamental policies are aimed to be implemented through a dynamic shift of the Saudi government previously acting as an enabler, to now changing their methods in order to achieve successful implementation and adoption.

Vision 2030

Vision 2030 is a strategic roadmap, outlining a comprehensive plan to transform the Kingdom's economy and society. To achieve digital transformation, the Saudi government has implemented various initiatives and programs, including, the National Transformation Program ("NTP") and the Saudi Vision 2030 Realization Program, which is an economic action plan put in place by the government of Saudi Arabia to focus on developing areas such as e-government services, digital infrastructure development, cybersecurity, and fostering innovation and entrepreneurship. This was reflected in the launch of several digital platforms and services to enhance citizen engagement and improve efficiency of public services, such as 'Absher' and 'Tawakkalna', which aim to give citizens access to a wide range of governmental services and information.

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Digital Inclusion

Digital inclusion is a key objective to provide integrated digital services to the government sector in Saudi Arabia, conducted through the launch of the "Inclusive Government Program" by the DGA in 2022. The DGA Governor of the Authority has stressed that the "Inclusive Government Program" seeks to provide a better digital experience for the beneficiary through unified platforms and applications, in addition to developing and operating comprehensive government platforms through a set of technologies that enable the authorities to develop, exchange, and link services without the need to redesign, test, and run the same platforms, as published in February 2024 on the DGA platform.

The ICT Sector Strategy published in 2023 encompasses the need for digital inclusion, with a direct reference to the need for advanced technology, digital knowledge, and awareness among citizens and residents.

E-Participation

E-Participation holds great importance to encourage and initiate communication channels with citizens in order to express their opinions, ideas, and suggestions on specific topics relevant to the Saudi society. Through these ideas, opinions, and suggestions the government is able to construct and enact appropriate legislation, policies, strategies, initiatives, and services.

The Council of Ministers adopted decision No. (476) dated 15/7/1441 H mandating the National Competitiveness Center to establish the Rules and Regulations Support Unit in the center aiming to perform the following: establish and supervise the unified electronic platform to solicit the opinions of the public, prepare survey forms, evaluating the effects, and circulating them to government agencies,

provide notes and visuals about the survey results to the project owner, and awareness and dissemination of the culture of the survey of the importance of participating in evaluating the regulatory effects on projects of laws and regulations.

Data Protection and Privacy

Data protection and privacy procedures are governed by the Personal Data Protection Law (Royal Decree No. (M/19) dated 1443/2/9), setting the legal basis for the protection of the rights of individuals regarding the processing of personal data by all entities in the Kingdom, as well as entities outside that process personal data related to individuals residing in the Kingdom using any means. The Personal Data Protection Law aims to safeguard privacy rights among technological advancements (as per the article published by Al Ghazzawi & Partners – Personal Data Protection Law).

The National Data Management and Personal Data Protection Standards cover 15 Data Management and Personal Data Protection domains, in which governmental entities must implement the standards in order for compliance to be measured yearly to monitor progress and drive efforts towards a successful implementation. Working alongside the National Cybersecurity Authority acting as the competent security authority for cybersecurity and its affairs in the Kingdom.

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National Strategy for Data and Artificial Intelligence ("AI")

A major milestone was the adoption of a widely anticipated National Strategy for Data and AI ("NSDAI") introduced in the inaugural Global AI Summit, which reiterated Saudi's commitment to leverage responsible AI in achieving its national digital transformation objectives, boosting the ICT sector's contribution to the Kingdom's Gross Domestic GDP. This is reflected in the Kingdom ranking as top digital riser within the Group of 20 ("G20") over the last three years, as referenced from the European Center of Digital Competitiveness.

NSDAI
الاستراتيجية الوطنية
للبيانات والذكاء الاصطناعي
National Strategy for Data & AI

The NSDAI strategy consists of six main pillars including:

1. **Ambition** – to be amongst the top 15 countries in the development and application of AI by 2030.
2. **Skills** – to train and host more than 20,000 data and AI specialists and experts by 2030.
3. **Partnerships** – to partner with leading AI nations, international organizations, and private sector institutions.
4. **Investments** – to invest over USD 20 billion in Data and AI.
5. **Regulation** – to foster a business-friendly regulatory environment, based on international best practices.
6. **Ecosystem** – to allow more than 300 active data and AI start-ups to be hosted in the Kingdom by 2030, and world class regulatory sandboxes for the development and deployment of AI-powered technology.

National Cybersecurity Strategy

The growth of the technological sector and ultimate usage in the Kingdom has introduced new vulnerabilities, related to Cybersecurity and more specifically cyber threats. These threats require effective and efficient protection to ensure full security of networks, information technology, operational technology systems, and related hardware.

The National Cybersecurity Authority ("NCA") enforced the first National Cybersecurity Strategy in the Kingdom, aiming to implement key initiatives to achieve an appropriate balance between enhancing cybersecurity, raising confidence, and contributing to the Kingdom's growth and prosperity.

Challenges of
Digital Transformation

The challenges faced by the Kingdom in the development of digital transformation must be mitigated in order to avoid any potential threats or harm to the Kingdom. The International Journal of Scientific Research and Management has identified key challenges that may be faced by the Kingdom due to the expansion of the digital transformation sector. The challenges are as follows:

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Hacking Crimes

There is an increase in hacking crimes, including a launch of more complex attacks targeting the violation of the main data of institutions, resulting in a loss of millions from each institution. Reflected in the statistics through Saudi Arabia ranking 9th for cybercrime attacks, as presented in the Cybercrimes Forum held in Riyadh. The Director of Administration Development at the Commission of Investigation and Prosecution ("CIP") articulated the inability to completely eliminate fast-developing techniques of cybercrime, making it almost impossible to gain evidence against the internet criminals.

Fraud Crimes

There has been a reported 62% of Saudi citizens exposed to attempts of financial fraud through phone calls or electronic means, according to a poll carried out by the National Center for Public Opinion Surveys in 2022. The fraudulent attack resulted in 14% of surveyors losing financial funds due to financial fraud through phone calls, affecting their lifestyle and their families, as reported in the Saudi Gazette. The Digital Government Authority conducted a research study, finding that the concept of digital fraud emerged in the Kingdom as agencies promoted their digital transformation, which was enabled by advancements in the technology landscapes and capabilities worldwide. In addition, the research study has found that the concept of digital fraud has become extremely advanced and sophisticated, indicating the need for up to date and focused regulations and policies to ensure the decrease in these fraudulent attacks.

User Engagement

Many users and citizens may be hesitant to the use of newly implemented digital transformation initiatives; factors such as concerns about data security privacy and integration challenges contribute to this hesitation. It is important for organizations to address these concerns by providing clear communication streams, training, and support to users throughout the digital transformation process.

This can also be reflected in organizations highlighting the potential benefits and opportunities that digital transformation can bring, such as increased efficiency, innovation, and competitiveness, which can help alleviate user hesitation and foster a smoother transition.

Regulatory
Solutions

The Kingdom requires the implementation of agile regulations to keep pace with digital innovation. As expressed above, there are many challenges faced due to the efforts in achieving digital transformation. However, by providing flexible regulatory frameworks, the Kingdom can encourage new ideas, products, and business models.

A case prepared by the ITU Regulatory and Market Environment Division ("RME"), conducted a series of reports on national approaches to collaborative regulations. The key principles and achievements set out in the reports are:

Agile Regulatory Tools

Policy makers and regulators are urged to develop flexible legislation and regulations that are capable of responding to the ever-changing technologies, services, and markets. The implementation of such legislations and regulations provides adaptability and future-proof mechanisms in the Kingdom. The Kingdom has begun adopting agile regulatory tools, this has been achieved through more inclusive consultation practices, self and co-regulatory approaches, and regulatory sandboxes. The case further urged the requirement of collaboration between the public and private sector to achieve coordination to leverage industry players' knowledge and expertise.

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Incentive Based Regulatory Tools

Innovation based regulation has been identified by the Kingdom through various innovation policies for the technology and digital sector (G5 Benchmark Questionnaire). This has also been achieved through the launch of WIFI 6e in April 2021, providing more capacity and increased channels in the Kingdom (CITC, Saudi Arabia launches first WiFi 6e network in Europe, Africa, and Middle East region (April 1, 2021), making the Kingdom the first country in Africa, Arab States, and the Europe region to make full use of the bank available for WIFI use.

International Collaboration

The Kingdom has signed a collaboration in 2019 between the Communications, Space and Technology Commission ("CITC"), and the ITU Development Bureau to enhance the cooperation and partnership on ICT issues.

The agreement aims to reinforce cooperation and promote ICT regulators around the world. This enhanced partnership and collaboration displays the active efforts taken by the Kingdom to successfully achieve the goal of digital transformation.

Regulatory Collaboration

Regulatory collaboration has been an active effort of the Kingdom. The key example of these efforts is through the private industries and regulatory authorities forming a National Regulatory Committee ("NRC"). This committee contains eight core members, namely the CITC, Capital Markets Authority ("CMA"), GAC, GCAM, Public Transport Authority ("PTA"), Saudi Central Bank ("SAMA"), Saudi Authority for Data and Artificial Intelligence ("SDAIA"), and Water & Electricity Regulatory Authority ("WERA"). The NRC was established by the National Committee for Digital Transformation ("NCDT") and is intended to "ensure the highest level of coordination, enhance cooperation between regulators, and harmonize the regulation of common digital topics between entities." (CITC, The National Regulatory Committee holds its second meeting (August 4, 2021). The overall aim of the NRC is to accelerate the adoption of digital policies and regulations, thus promoting innovation, job creation, and investor confidence.

NCDT

The NCDT was created in July 2017, and is an eleven-member ministerial committee. The committee includes ministers from the MCIT, health, finance, commerce, human resources and social development, education, interior, industry, mineral resources, NCA, National Digital Transformation Unit ("NDU"), and the Local Content and Government Procurement Authority ("LCGPA"). The committee formulates policies and strategies related to digital transformation, whilst developing plans and programs that are essential for implementation in the Kingdom. The aim of the committee is to help in achieving the Vision 2030 objectives, acting as a leader and accelerator of digital transformation. This is achieved through providing recommendations and opinions on national affairs and strategies related to digital transformation. In addition, it manages subcommittees and task forces, urging these groups to conduct studies and reports to provide recommendations and solutions to achieve digital transformation (NDU, About the National Digital Transformation).

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Developments and Future
of Digital Transformation in the Kingdom

Aramco

Aramco is a leading institution embarking on a digital transformation, with a program that enables the utilization of the latest breakthroughs in digital technology to deliver energy safely, efficiently, and sustainably.

With a key vision to foster digital innovation, partnering with leading technology companies and research institutions, whilst investing in the digital skills of their own workplace, as referenced by the Aramco Digitalization article. In addition, the article displays how the World

Economic Forum ("WEF") has recognized four of Aramco's facilities as 'Manufacturing Lighthouses", which use AI solutions to increase productivity while enhancing the reliability of its facilities. Furthermore, reflecting on the aim to establish the Kingdom as a hub to provide digital services to the region, with the expansion and development of the Kingdom's technology infrastructure which will create new entrepreneurial opportunities, drive further innovation and job growth, and support the diversification of the Kingdom's economy.

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NEOM

Saudi Arabia is investing in the development of smart cities, such as NEOM, with a focus on leveraging technology to enhance urban living, sustainability, and efficiency. The Kingdom has been actively investing in smart city initiatives, making significant strides in digital transformation, whilst driving economic growth, improving government services, and enhancing quality of life. NEOM is a new urban area built by Saudi Arabia, launched by Crown Prince Bin Salman, with an aim in becoming a futuristic mega-city project in Saudi Arabia that is at the forefront of digital transformation initiatives. NEOM aims to be a leading hub for innovation, technology, sustainability, and leveraging cutting-edge digital technologies to create a smart and connected city of the future, as stated on the official NEOM website. The major aspects of digital transformation implemented by NEOM include smart infrastructure, innovation ecosystem, sustainable development, and digital governance. Providing an overall enhancement of developing groundbreaking technologies in various sectors, including energy, transportation, healthcare,

and tourism, as outlined in the "Changing the future of technology and digital" article published by NEOM. Becoming the first hyper-connected cognitive community in the world, through its implementation and adoption of immersive, mixed reality metaverse, and digital twin technology.

In an interview with Joseph Bradley, CEO of Tonomus, the first subsidiary of NEOM, it was stated that the metaverse will be a 'game changer' in creating a new environment for us to experience, whether creating an immersive experience without friction or streamlining day-to-day activities, it will shape our collective future. In addition, it will aid in pioneering differential privacy tools and solution choices that are fundamental to a trusted, personalized, and cognitive world. The interview reflected on the concept of technological disruption, and how technology will change the dynamics of relationships in our society, allowing for the empowering of voices and active participation.

Business
Opportunities

The Kingdom has taken leaps in implementing digital transformation. The positive effects of such implementations and innovations have led to an increase of business opportunities. The Kingdom has created an environment for investors due to the impressive progress in digitalization. This has been achieved through an array of initiatives, such as providing technological ease of contracting and business dealings. Examples of said initiatives are ease of contracting through online platforms (Ejar, Najez, Absher), online dispute resolution platforms, increased technology for document review, and compliance, and e-signatures.

In addition, the Kingdom has boosted the economy. This is reflected through a report conducted by Automation Anywhere, a global specialist in Robotic Process Automation (RPA). The report highlighted the opportunities that the Kingdom has had, such as the opportunity to double the size of the economy to $1.6 trillion and add an extra $293 billion by 2030. In addition to the aim of fully adopting intelligently automatic systems in all sectors, which provides a mix of AI and RPA. Whilst this has yet to be achieved in the Kingdom, the eagerness to successfully achieve these goals displays future business opportunities and an attractive market to foreign investors.

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Conclusion

The Kingdom has taken leaps in incubating digital technologies into the economy. This has been reflected in the ever changing and dynamic strategies and initiatives implemented in the Kingdom. Whilst the Kingdom has hurdles to overcome such as regulatory challenges and privacy and protection enforcement, the digital transformation of the Kingdom has proven to be noteworthy and competitive. As the digital sector continues to evolve and expand, various opportunities will begin to present themselves to businesses, individuals, and agencies. Business leaders and individuals should take the initiative to position themselves in the center of the digital world, providing a completive and ground-breaking stance. Whilst there are many challenges that have yet to be overcome, the opportunities and vast growth of this sector have proven to be a successful method of diversifying the economy.

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