

# Digital Drivers Template

A Reflection on Kenya's 20-Year Digital Transformation Journey



**dial** Digital Impact Alliance  
**Dalberg**

  
**UKaid**  
from the British people



## Executive Summary

**This template is part of DIAL’s five-year “Digital Beacons” strategy and supports the recently co-designed project with UK DAP**

**In late 2021, Digital Impact Alliance (DIAL) and the UK Government Digital Access Programme (UK DAP) contracted Dalberg Advisors to develop a national Digital Drivers Template.** DIAL and UK DAP are seeking to capture and evaluate the common enabling characteristics that contribute to the digital transformation of exemplar countries, such as Kenya, and develop a template for global use. This template is part of DIAL’s five-year “Digital Beacons” strategy and supports the recently co-designed project with UK DAP. Built between November 2021 and March 2022, the template reflects pre-existing frameworks in the sector—such as those employed by the United Nations Development Programme, the World Bank, Kenya’s Digital Economy Blueprint, and Smart Africa—and incorporates the insights of stakeholders from these organizations. The template further draws on findings from our literature review and indicator analysis to identify key change factors that drive digital transformation.

**DIAL and DAP’s aim is for decision makers to use the Digital Drivers Template to tell the story of their own national digital transformation journeys, assess progress, and use related insights to prioritize areas for investment or policy action in their own countries.**

The drivers themselves are not exhaustive but rather key change factors that emerged from both stakeholder insights and the literature review as being catalytic in driving digital transformation. The six focus areas (people, infrastructure, enabling platforms and services, business and innovation, policy and regulation, and governance) that form the template are thematic groupings of these key drivers and were developed based on DIAL’s own focus areas.

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The template draws on three analytical components as well as a literature review

**While the Digital Drivers Template is a mental model for decision makers (including but not limited to policy practitioners, consultants, and researchers), it also has analytical components that can be operationalized to assess a country's progress.** The template draws on the three analytical components outlined below, as well as a literature review, which has informed and added context to these three analytical components.<sup>1</sup>

- An **indicator analysis** provided a quantitative baseline for a country's digital transformation by analyzing a set of indicators under each focus area. We chose both composite and standalone indicators, which are informed by specific drivers (the process of indicator selection is discussed later in this section). However, in the case where data was not available for a specific country, secondary research was required to analyze similar drivers.
- **Primary research** supplemented the quantitative analysis by providing nuanced narrative support for the quantitative data. We drew on original survey data, stakeholder interviews, and other types of primary research, such as focus groups. This component responded to the reality that new datasets might be required to understand the true scope of digital transformation and subnational dynamics, particularly in countries with limited national-level data.
- A **country reference group** is a country-specific group of ~20 individuals—drawn from the private sector, civil society, universities, donors, and government—who were able to provide further nuance and insights into the quantitative analysis and to fact-check where appropriate. These stakeholders are also potential early adopters of recommendations emerging from the country assessment.
- In addition to these analyses, we conducted a **literature review** to validate findings and provide nuance.

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**This report applied these analyses to Kenya as the first exemplar of national digital transformation to document its digital transformation journey, highlight the key drivers, and illustrate strengths and opportunity areas for policymakers and other stakeholders.** We chose Kenya as an exemplar due to its comprehensive digital transformation relative to other countries across Africa and its promising outlook. The analysis of Kenya aimed to answer four questions: (i) Which drivers showed the most improvement and were thus critical in driving Kenya's national digital transformation journey? (ii) Did some drivers in Kenya's journey matter more than others? (iii) Were some of the drivers dependent on others? and (iv) How can such factors and lessons help inform other countries in their digital transformation journey?

For Kenya, the template will not only support identifying drivers that have been key in the country's digital transformation but also areas of momentum that can be built on and areas where more can be done to accelerate its digital transformation further.

**Using the methods outlined above, this assessment of Kenya found that certain drivers (e.g., education and non-digital infrastructure, such as electricity) have played a key role in the country's digital transformation.**

<sup>1</sup> These three components can and may be adapted according to a country's resources and existing national data.

In 2018, the literacy rate stood at 81.5% for people aged 15 and over, compared to 72.16% in 2007



**Investments in basic education have been key to accelerating Kenya’s digital transformation, forming the bedrock of the human capital needed to drive the use and creation of digital products.** Particularly, the introduction of Free Primary Education in 2003 and Free Day Secondary Education in 2008 helped equip Kenya’s population with the requisite levels of education to develop the minimum digital skills necessary to use and habituate themselves to new digital products, such as social media. For example, in 2018, the literacy rate stood at 81.5% for people aged 15 and over, compared to 72.16% in 2007.<sup>2</sup> Furthermore, the Digital Literacy Program initiated by the Kenyan government in 2013—which aims to transform learning in Kenya—has created awareness of the importance of digital literacy. In addition to education, non-digital infrastructure programs, such as electrification, have been critical to Kenya’s journey. For example, the Rural Electrification Program, which aims to ensure that all Kenyans have access to electricity by 2030, has connected 8.6 million households (many of them rural) to the grid, along with trading centers, police administrative posts, health centers, and all primary schools.<sup>3,4</sup> Access to electricity is obviously a critical precondition for the uptake and usage of digital devices, and by extension, digital applications and services, by Kenyans.

**We also found that investments in the digital connectivity infrastructure facilitated by visionary leadership have been crucial in Kenya’s digital transformation.** Infrastructure investments—such as the installation of The East African Marine Systems (TEAMS) cable in 2009—greatly boosted connectivity while increasing competition among existing internet service providers, leading to decreased costs of connectivity for users. Furthermore, the government’s 2012 investment in the National Optic Fiber Backbone Infrastructure has ensured that all 47 counties are connected to the national fiber network, further boosting equitable access, particularly in the last mile.<sup>5</sup> Private sector players have also made significant investments in their connectivity infrastructure, such as cell towers, further increasing connectivity while concurrently lowering the price of data. By 2018, 95.3% of the country was covered by a 2G network, 85% by a 3G network, and 25% by a 4G network, with efforts to connect the remaining unconnected areas underway.<sup>6</sup>

<sup>2</sup> The World Bank, [Literacy Rate, Adult Total \(% of people ages 15 and above\) - Kenya](#), accessed 2022.

<sup>3</sup> REREC, [Electrification of Public Facilities](#), accessed 2022.

<sup>4</sup> The East African, [Kenya Connects 8.6 Million Households to Electricity](#), 2022.

<sup>5</sup> Ministry of ICT and Youth Affairs, [NOFBI Phase 2](#), accessed 2022.

<sup>6</sup> Research ICT Solutions, Kenya, accessed 2022.

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Furthermore, tactical regulations have played a key role in creating an enabling environment for fair competition and signaled the government's commitment to supporting the information and communication technology (ICT) sector. The 2006 National ICT Policy deregulated the ICT sector, leading to several watershed developments in Kenya's digital transformation journey, including the end of Telkom Kenya's monopoly over both international and last-mile connectivity in 2007 and the installation of the TEAMS cable two years later.

Mobile money and government e-services have had a transformative impact in Kenya



Additionally, Kenya has made significant strides both in the growth of enabling platforms and in the business and innovation driver, with the former playing a critical role in facilitating the ubiquitous adoption of the applications and services created by the latter. For instance, mobile money and government e-services have had a transformative impact in Kenya as enabling platforms and services. The phenomenal success of the mobile money service M-Pesa is a case in point. At M-Pesa's launch in 2011, only ~42% of Kenyans aged 15 and over had a bank account or an account with a mobile money service provider. By 2017, that figure had reached ~82%, of which ~56% were bank accounts with a financial institution.<sup>7,8</sup> Mobile money provided a convenient option for payment services while decreasing the inconvenience of transacting in person at a bank branch. M-Pesa was able to grow its network of skilled agents at the same pace as its customer base,<sup>9</sup> thus ensuring the geographical proximity of agents to consumers. The ubiquity of M-Pesa has shifted Kenya toward a digital economy by catalyzing digitally enabled interactions between people, government, and business. More broadly, M-Pesa's success has proved the potential of innovative digital products and provided inspiration to Kenya's entrepreneurship and business ecosystem. Similarly, the launch of the e-citizen portal—an official digital payments platform that enables Kenyan citizens, residents, and visitors to access and pay for government services online—has greatly increased convenience for citizens while reducing the costs and corruption often associated with government transactions and services.<sup>10</sup>

7 The World Bank, [Global Financial Inclusion](#), accessed 2022.

8 The World Bank, [Account ownership at a financial institution or with a mobile-money-service provider \(% of population ages 15+\) – Kenya](#), accessed 2022.

9 HBS Digital initiative, [M-Pesa: A mobile money success story from Kenya](#), 2015.

10 The World Bank, [ID4D Country Diagnostic: Kenya](#), 2016.

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Despite reductions over the past two decades, internet and mobile data costs remain high

**It is worth noting that Kenya's digital transformation journey has been neither linear nor immune to the effects of broader societal events.** The ripple effects of changes implemented years ago by key figures, such as Dr. Bitange Ndemo, the former permanent secretary in the Ministry of ICT, are still felt today. Kenya's digital transformation journey began with the deregulation of the ICT sector during former President Mwai Kibaki's regime in 2002, which paved the way for fair competition among new players. The National ICT Policy (2006) set in motion much of the success Kenya is currently experiencing. The momentum that grew from this type of political influence and leadership cannot be understated as a key driver of change. There has also been a measure of nonlinearity to Kenya's journey. The post-election violence of 2007–08 could never have been predicted as a catalyst for the mass adoption of mobile payments that followed. With bank branches closed temporarily due to insecurity, most Kenyans increasingly turned to mobile money to send funds to relatives and pay for goods and services. This shift persisted, and mobile money has become the dominant transaction layer, facilitating transactions in what is now verging on a cashless economy.

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**Several persistent challenges must be addressed as Kenya continues its digital transformation journey.** Despite reductions over the past two decades, internet and mobile data costs remain high relative to Kenya's digital connectivity infrastructure coverage. This has impeded further uptake and usage of digital applications and services. High internet and data costs also contribute to another ongoing challenge: the digital divide in internet usage. Inclusion across gender, demographics, and geographies still lags. For example, just 35% of women are advanced digital services users, compared to 54% of men, and just 50% of women use mobile internet in Kenya, compared to 71% of men.<sup>11</sup> The divide is even more pronounced at the intersections of gender and geography, age, and occupation, with female rural youth, adult female farmers or homemakers, and self-employed women the most affected.<sup>12</sup> Unreliable electricity, particularly in rural areas, remains a widespread challenge. Additionally, digital trust remains low in Kenya and is bound to decrease with cases of cyber fraud, disinformation, and misinformation on the rise. The lack of a national addressing system is another persistent obstacle, particularly for the growth of e-commerce. Furthermore, challenges with the rollout of Kenya's digital identification (ID), Huduma Namba, have not been resolved, and Kenya's High Court has declared the rollout illegal due to the lack of a data impact assessment.<sup>13</sup> The High Court's decision highlights the importance of having a strong legal framework as a guardrail for deploying digital IDs, which can be riddled with privacy concerns.

<sup>11</sup> The Standard, [Why Kenya needs a gender inclusive digital transformation](#), 2021.

<sup>12</sup> Ibid.

<sup>13</sup> Business Daily, [High Court declares Huduma Namba illegal](#), 2021.

<sup>14</sup> Chakravorti, Bhaskar and Chaturvedi, Ravi Shankar, *Digital planet 2017: How competitiveness and trust in digital economies vary across the world*, IBCG, The Fletcher School, Tufts University, July 2017.

<sup>15</sup> Ministry of Health, *Kenya National e-Health Strategy*, 2010.

<sup>16</sup> Business Daily, *Inside Kenya's new digital strategy to lift agriculture*, 2020.

**The Digital Drivers Template enabled us to tease out what drivers have been catalytic to the country's digital transformation**

**While some sectors remain heavily analog, Kenya has made significant progress and is widely recognized as a country with strong digital momentum.** The Kenyan economy has excellent growth potential; it was ranked the fourth-fastest growing digital economy in the world in 2017.<sup>14</sup> Kenya does particularly well in digital infrastructure, basic education, digital payments, up-to-date regulations, e-government, and a burgeoning digital innovation ecosystem. Certain sectors, such as healthcare, have also adopted digital strategies. Kenya's National e-Health Strategy envisions an ICT-enabled transformation of the sector to provide efficient, accessible, equitable, secure, and consumer-friendly healthcare services.<sup>15</sup> The government also launched a digital-for-agriculture strategy with a target of registering 1.4 million farming households in an online portal and 2,300 agro-dealers to supply farm inputs to growers by 2023.<sup>16</sup> Adopting sector-specific digital strategies is crucial to improving transparency and efficiency in sectors, driving inclusive economic growth. However, not all sectors in Kenya are digital or have developed a digital strategy.

**Thus, Kenya's story is one of being an exemplar in national digital transformation with plenty of room for improvement.** Kenya's areas of strengths—such as investment in education and digital connectivity infrastructure, world-class policies and regulations, and visionary leadership—can inform other countries' strategies and investments. Moreover, its persistent challenges can signal to other countries what complications must be addressed as they move forward with their digital transformation journeys.

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**This Digital Drivers Template offers a framework through which any country can evaluate itself to identify areas for investment that will accelerate digital transformation.** In developing this report, we found that every country's digital transformation journey will be nonlinear, with specific drivers often coalescing to accelerate and steer a particular country down its own path. In the case of Kenya, the three methodological components of the Digital Drivers Template enabled us to tease out what drivers have been catalytic to the country's digital transformation and offer clear lessons to other countries on their digital transformation journeys. Furthermore, the template will be continually refined and improved to ensure that countries have the best possible template to evaluate and inform their decision-making processes.