

# Digital Impact Alliance

# Public Procurement of Digital Technology

## Leadership Series Brief #3

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Digital technology plays a critical role in supporting a government's central mission and its ability to provide public services effectively, efficiently, and at scale. Demand for online public service delivery has grown over the last decade.<sup>1</sup> Public investment in digital infrastructure and services has increased as countries bring more public services online and work on their national digital transformation agendas.<sup>2</sup>

The COVID-19 pandemic has only heightened this demand. It has become evident that countries equipped with and quick to use digital and data solutions are more resilient to the effects of the crisis,<sup>3</sup> so there is a real sense of urgency to pivot more citizen services online.

DIAL's research shows that many countries still struggle with several obstacles to ensure the efficient and effective acquisition, deployment, and management of digital technology for public service delivery. They include a procurement function misaligned with national digital transformation ambitions,<sup>4</sup> procurement processes and standards that are not harmonized across government agencies and not suited for digital technology contracting, and limited specialized skills.

### About DIAL's Leadership Brief Series

This series synthesizes existing learning and presents digestible takeaways for senior digital development leaders investing and innovating at a systems level. They cover key topics from DIAL's issue portfolio and may be updated from time to time.



Countries must assess the suitability of existing public procurement laws and processes for digital technology contracting to leverage this growing public investment in digital technology sustainably. This means ensuring the necessary institutions, governance, policies, and technical expertise to support the efficient and effective acquisition of critical digital services and infrastructure for the public.

This brief summarizes learnings from two years of work on public procurement of digital technology, drawing on DIAL's Benchmarking Study<sup>5</sup> and Category Guide for Procurement of Digital Technology<sup>6</sup> to synthesize key takeaways for public procurers, government chief information officers (CIOs), and stakeholders to consider.



## Takeaways

- Public procurement can accelerate a country's digital transformation.
- A whole-of-government approach fosters standards and improves value for money.
- Public procurement of digital technology requires rethinking traditional procurement processes and laws.
- Public procurement of digital technology requires investment in specialized technical skills and holistic approaches.

## BOX 1: Definitions

- **National digital transformation**, as an outcome, refers to the economic and societal effects of digitization and digitalization. As a process, it refers to the ways digital is disrupting and reinventing traditional services, sectors, businesses, economies, and societies, and challenging ideas of how economic and social activities are organized and enacted<sup>7</sup>
- **Public procurement** refers to the purchase of goods, services, and works by governments and state-owned enterprises.<sup>8</sup>
- **Public procurement of digital technology** refers to the process by which government entities or public institutions acquire digital services, resources, and infrastructure. It is a subset of public procurement.
- **E-government procurement (e-GP)** is the use of information and communications technology (ICT) to facilitate more ethical and transparent procurement practices by all stakeholders across a government's public procurement processes.
- **The whole-of-government approach (WGA)** is one in which public service agencies work across portfolio boundaries, formally and informally, to achieve a shared goal and an integrated government response to particular issues.<sup>9</sup>

## Takeaway #1:

### Public procurement can accelerate a country's digital transformation

Governments should leverage their substantial spend volume to foster streamlined and efficient acquisition of digital technology across government institutions and drive the local digital market and ecosystem of vendors towards national digital transformation objectives.



Public procurement is the largest single marketplace in countries worldwide, accounting for about one-fifth of global GDP.<sup>10</sup> In 2018, for example, governments spent a combined US\$11 trillion on public contracts.<sup>11</sup> In Africa, government expenditure accounts for 19% of the continent's GDP and contributes 20% to annual economic growth. While most of this public spending goes to health care, education, and defense,<sup>12</sup> government buying decisions have far-reaching impacts, including in cross-functional technology infrastructure and services, whether procured as part of sector-specific spending or separately.

Over the last two decades, the role of public procurement has shifted from an administrative function primarily focused on acquiring goods and services for the government to serving as a policy instrument for horizontal or crosscutting national objectives.<sup>13</sup> Several countries have now adopted procurement requirements that promote human rights, gender inclusion, and sustainable green growth.<sup>14</sup>

As large buyers, governments should use this approach to set standards and drive the market towards desired digital transformation objectives, such as promoting local digital technology innovation and promoting the participation of small and medium enterprises (SMEs) in public tenders. Governments can do this by incorporating relevant requirements and incentives into supply contracts and promoting the digitalization of the public procurement cycle, including deployment of an e-GP system.<sup>15</sup> This approach could help drive digital adoption in the community of suppliers and the market and streamline procurement laws and regulations for the acquisition of digital technology.

### Several countries have now adopted procurement requirements that promote human rights, gender inclusion, and sustainable green growth.

DIAL research shows that implementing a cohesive national strategy is still a challenge for many countries,<sup>16</sup> creating misalignment between countries' ambitions for digital transformation and their use of procurement laws, processes, and institutions to implement them and drive better delivery of citizen services online.<sup>17</sup> This lack of cohesive procurement strategies for digital technology<sup>18</sup> hinders countries' ability to leverage their significant buying power to drive digital transformation objectives.

DIAL's review of several national digital strategies shows that many of them do not consider or reference public procurement as a strategic instrument they can use to foster digital transformation objectives.<sup>19</sup>

Governments should leverage the power of the purse to incentivize desired outcomes as part of their national digital transformation strategies. They should ensure that public procurement is a lever and policy instrument to promote national digital transformation objectives.

## BOX 2: Leveraging the procurement of digital technology for national objectives

- In 2009, fewer than 20 companies retained 80% of the United Kingdom's annual technology spending.<sup>20</sup> By 2018, about half of the £4.3 billion worth of business transactions went to SMEs,<sup>21</sup> and about 5,100 suppliers were available to the United Kingdom's public sector, of which more than 92% were SMEs. This shift was credited to a few factors, including the U.K. government's collaborative approach that looked at the entire digital technology procurement cycle and engaged stakeholders, including the community of suppliers, to identify blockers, assess the suitability of existing laws, and improve the procurement process accordingly. Additionally, the U.K. government implemented new user-centered, design-led, data-driven, and multidisciplinary approaches in a deliberate departure from traditional standard operating procedures for procurement used to deliver commercial framework agreements. Moreover, the U.K. Government Digital Service (GDS) established a "Digital Marketplace" in 2014, an online system to help government agencies find technology and people for their digital projects and streamline the procurement process, particularly for SMEs. Through these efforts, a positive trend has emerged. More recent data reports show that the Digital Marketplace spend with SMEs in 2020/2021 was around £1.2 billion, which is about £300 million more than in the prior fiscal year of 2019/2020.<sup>22</sup>
- Ireland established the Office of the Government Procurement (OGP) to procure eight categories of common goods and services on behalf of the public service, including cross-sectoral digital technology. OGP also guides policy and procurement standards, integrating both policy and procurement operations into one office.<sup>23</sup> This government office was established in 2013 following a fiscal and economic crisis in Ireland. Before that, procurement activity was fragmented among thousands of government-funded bodies, individual departments had no leverage, and it was impossible to benefit from economies of scale. This fragmented approach allowed suppliers to charge different government entities different prices for the same services. About three years after OGP was established, the government recouped €160 million in savings by creating shared framework agreements and aggregating the procurement of categories of goods and services common across the public service, such as ICTs.<sup>24</sup>

## Takeaway #2:

### A whole-of-government approach fosters standards and improves value for money

Harmonizing the procurement of digital technology across government is still a challenge in many countries, irrespective of income levels. Research conducted in partnership with Smart Africa<sup>25</sup> revealed that coordinating national ICT strategies across government branches, including procurement, was a challenge affecting implementation of their national digital transformation agendas.

Other research done in 30 mostly high-income OECD countries revealed that only one-third of them had a WGA strategy that covers ICT procurement.<sup>26</sup> The World Development Report also highlighted the lack of unified interoperability standards of different data platforms across ministries as an issue affecting several countries, leading to duplication of data production and IT procurement, among other inefficiencies.<sup>27</sup>

**Government stakeholders, particularly donors, should also support this approach by promoting cooperation and investing in cross-sectoral technology in line with national digital transformation agendas.**

A fragmented approach to public procurement of digital technology can be costly to the taxpayer, as it does not leverage the opportunity to aggregate demand for better value for money. Moreover, it is prone to vendor lock-in<sup>28</sup> and other issues stemming from diverging standards and technical specifications of products operated by different government entities.

Governments should adopt a standards-based approach to the procurement of digital technology to promote integrated policies across government systems and ensure that systems, products, and services developed by different vendors for various government agencies are interoperable. Government stakeholders, particularly donors, should also support this approach by promoting cooperation and investing in cross-sectoral technology in line with national digital transformation agendas.<sup>29</sup>

A WGA to the procurement of digital technology does not necessarily mandate a one-size-fits-all technology solution managed by the central government. Instead, this approach advocates for the alignment of public investment around common standards, encourages greater coordination across government agencies and donors, and ensures governance structures are in place to aggregate demand as necessary to drive better value for the money. There are several ways of implementing this approach, depending on country contexts and priorities. (See examples in Box 3.)



Fundamentally, a WGA to the procurement of digital technology advocates for coordinated and standards-based procurement of cross-sectoral digital technology and for harmonized technical standards<sup>35</sup> and procurement processes across government agencies.

### BOX 3: Whole-of-government approach to procurement of digital technology

- The India Enterprise Architecture (IndEA) approach involves the central government procuring and managing applications in both the Core Platform (e.g., Identity and Access Management System, API Gateway) and common applications used across all government entities<sup>30</sup> (e.g., e-procurement portal, Government Finance Management System), while providing reference models, procurement guidance, and standardized contractual terms and conditions for agency and state-specific digital projects.<sup>31</sup> Under this architecture, any state government delivering ICT services deploys the Core Platform and common digital assets centrally but retains the flexibility to build state-specific digital projects and keep domain platforms decentralized.
- A holistic, standards-based assurance approach that looks across the full lifecycle of public spending (from pre-procurement planning and ICT investment appraisal through post-procurement delivery) has been critical to achieving the United Kingdom's digital and commercial reforms. (1) The Technology Code of Practice<sup>32</sup> is used at the pre-procurement planning stage as part of the Cabinet Office's Central Digital and Data Office (CDDO) spend controls process to help government departments design, build, and buy technology; (2) the Technology Service Principles<sup>33</sup> define how the government works with buyers and suppliers to improve the way technology is bought across government and the public sector; and (3) the Service Standard<sup>34</sup> is used at the post-procurement delivery stage as part of the CDDO service assessment process to help teams create and run excellent public services. Throughout this lifecycle, there's a golden thread of meeting users' needs and using and contributing to open data, open-source, and open standards.



## Takeaway #3:

### Public procurement of digital technology requires rethinking traditional procurement processes and laws

Prescriptive public procurement processes are usually put in place to minimize risk, and rightly so. Anticipating future contingencies can help acquire certain products and services whose evolution and risks are relatively well-known over time. Still, they do not work when applied to modern digital technology with evolving specifications and end-user needs.

Several countries enacted existing public procurement laws when digital tools were not as prevalent as they are today. Such laws are not well suited to the nature and pace of technological change and the need for constant iteration that digital technology requires. In some cases, traditional laws do not distinguish between procuring digital technology and other categories of goods and services. They tend to promote preplanned scope, schedule, and cost. Using such a “waterfall approach,” which seeks to anticipate technical requirements, scope, and user needs upfront, has caused public digital technology procurement to falter.<sup>36</sup>



**In practice, this means building more standards-based, agile, and modular contracts that allow procurers to incorporate new information and changing specifications.**

For example, in Ethiopia public service procurement laws, which also govern the acquisition of digital technology, mandate the annual renewal of service agreements and a contract amendment ceiling of 25% of the initial contractual value. While such laws were enacted to avoid risks such as monopoly and excessive cost overruns, they do not work well for digital technology contracting. Digital services often require several years to deploy, and maintenance and operations fees can exceed the initial cost. Ethiopia highlighted this issue and sought to address it in its recent digital strategy recommendations by advocating for a centralized digital marketplace for government agencies and shifting from a capital expenditure to an operating expenditure model. This approach better facilitates the acquisition of scalable, on-demand services such as government cloud infrastructure.<sup>37</sup>

Policymakers and procurers should adopt more flexible procurement regulations contextualized for digital technology acquisition, allowing digital technology contracting to better respond to changing user needs, specifications, and policy priorities. By adopting “service design” principles,<sup>38</sup> public procurement processes could promote a systems-oriented and holistic approach to deploying digital technology involving people, processes, and technology.

In practice, this means building more standards-based, agile,<sup>39</sup> and modular<sup>40, 41, 42</sup> contracts that allow procurers to incorporate new information and changing specifications. It also means weighing compliance and the dynamic nature of digital technology together to better define and mitigate risks specific to digital technology acquisition and working with different industry stakeholders and leaders to assess and adapt the suitability of existing laws and procurement processes.

## Takeaway #4:

### Public procurement of digital technology requires investment in specialized technical skills and holistic approaches

Having the necessary technical skills in government is key to designing and implementing digital technology contracts effectively and managing the complexities of desired technology specifications and the impact on organizational structure.

Procuring digital technology can be challenging. Digital projects usually entail a combination of hardware, software, and technical content, which are hard to define and quick to change. Successful implementation of digital technology also requires organizational change management. Moreover, the social, economic, and environmental impacts of digital technology acquisition and deployment are often difficult to capture,<sup>43</sup> which makes it difficult to appreciate the resulting effect or to apply a business-case approach to the procurement of digital technology—a cost-benefit analysis of different technology alternatives—to inform procurement decisions.

DIAL's research revealed that public procurers struggle with understanding aspects of technology transfer, license management, and maintenance arrangements, as well as calculating the total cost of ownership (TCO) and the return on investment (ROI) due to lack of expertise.<sup>44</sup> To address challenges relating to skills and specialization, countries should look both inside and outside the government and adopt both short-term and long-term solutions.

For in-house talent, some countries adopted a decentralized system where individual agencies hire for and maintain needed expertise, while others use a hybrid model in which a cross-agency team of experts fills the skills gap for different government agencies and provides guidance on the acquisition of digital technology, “build vs. buy” analysis, and required technical specifications. An example of this approach is the United States’ 18F, a consulting team within the U.S. government that supports different government agencies to build and buy technology.<sup>45</sup> Another example is Kenya’s ICT Authority, a state corporation under the Ministry of Information Communication and Technology whose mandate entails setting and enforcing ICT standards for the public service and ensuring streamlined acquisition and deployment of ICT across government.<sup>46</sup> In other cases, countries developed communities of practice to promote learning and knowledge sharing. The U.K. government put together the Buying Digital Community platform,<sup>47</sup> which sits alongside other digital, data, and technology communities of practice<sup>48</sup> and allows civil servants to connect with practitioners across government to share best practices, discuss challenges, and support each other.

Governments have also used market-based approaches by encouraging outsourcing arrangements, such as pre-vetting people who have experience working with the government to ensure the easier acquisition of talent for public service delivery. An example of this approach, which is more targeted to digital technology acquisition, is the United Kingdom’s Digital Marketplace mentioned earlier, which created an ecosystem supporting service teams to meet needs.<sup>49</sup> Another example is Nigeria’s Centralized Contractor Registration System, a web-based portal developed to address the lack of specialization in public procurement, among other things.<sup>50</sup> The latter example is a more comprehensive portal that generally covers public procurement but includes resources for ICT-related acquisitions. These are all examples that policymakers can learn from to address the skills gap.

However, implementing any of these approaches depends on how much talent is available in each country’s local market. A long-term strategy for national talent development and acquisition, with supporting policies and investment, should accompany such short-term initiatives to sustainably address more systemic issues of specialization and shortage of skilled labor.



# Endnotes

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