



Needs Analysis Report

Regional Centre of Competence for Digital
and Artificial Intelligence Skilling



MINISTRY OF INFORMATION,
COMMUNICATIONS AND THE
DIGITAL ECONOMY



Credits

This work supports the implementation of the **Regional Centre of Competence (RCoC)** for Digital and AI Skilling, hosted at the **Kenya School of Government** in Nairobi, Kenya. RCoC is a government-owned initiative by the Kenya Government, established with the support of the **United Nations Development Programme (UNDP)** and **Microsoft**.

This report was developed by **Oxford Insights** based on a skill gap assessment to identify opportunities in public service AI and digital preparedness. The data gathered will inform the design of tailored training programs to help scale AI and emerging tech capabilities of government employees in the public sector across Africa.

We would like to thank public servants who supported this work by agreeing to take part in consultations and/or written interviews.

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Introduction

The **Regional Centre of Competence (RCoC)** for Digital and AI Skilling is being established by the Kenya Government, in close collaboration with the United Nations Development Programme (UNDP) in Kenya and Microsoft. The initiative is being piloted in Nairobi, Kenya and aims to put the infrastructure in place to help scale AI and emerging tech capabilities of government employees in the public sector across Africa.

As part of the creation of the RCoC, we are building the initial digital skilling training programs aimed at enhancing the digital and AI capabilities within the public service. This research was conducted to support the development of these programs aligned with the three overarching objectives of the RCoC:

- Improve digital competencies within the public sector to accelerate the digital transformation of the public sector in Kenya.
- Enhance access to advanced technologies and thus increase efficiency, inclusion, and service delivery within government.
- Promote a culture of innovation and experimentation embedded within the public sector, resulting in a mindset and cultural shift among public servants to drive and lead inclusive transformation towards a digital government.

This report contains a summary of the existing digital, data, and Artificial Intelligence (AI) skills of Kenyan public servants from across all government levels.

We compare their current proficiency to the required competencies for effective digital transformation in their respective roles. Secondly, it aims to provide clarity over the program content and delivery methods required based on the current skill level and needs of each user group. This data will also serve as baseline data for tracking performance against KPIs for the program once it is implemented.

Civil servants categorization

We have categorized civil servants into **four distinct cohorts**. This approach allows for the creation of tailored learning journeys that align with the unique requirements of each group, ensuring the program is practical and focused on improving their capabilities.

Leaders	ICT Leaders	Digital Implementers	Users
<i>Example roles:</i> Cabinet secretaries, principal secretaries, secretaries, CEOs, director generals, department heads, and directors.	<i>Example roles:</i> Technical leaders, Heads of technical departments, Heads of ICT.	<i>Example roles:</i> Roles in Software development & engineering, Graphic Design, Data management and analysis, cybersecurity, IT project management, digital marketing - and ecommerce and telecom.	<i>Example Roles:</i> All civil servants who do not fall under the technical-or leadership level.

Fig. 1. Civil servants cohorts

Summary of findings and recommendations

Leaders

Executive Leadership, Directors, Officers, CEOs, & Heads of non-technical areas

Skills

Insights

Leaders are currently focused on the initial steps of digital transformation, such as goal setting, addressing silos in data systems, and fostering engagement through communication.

We have also noted an emerging awareness of the need for digital strategy and governance, with leaders focusing on problem identification, policy creation, and compliance with existing laws.

Leaders showed foundational skill levels in all observed areas of digital transformation. This suggests that they are taking the essential initial steps of development.

Recommendations

The training program should focus on helping them enact this vision by strengthening their skillsets in areas such as:

- Program/ project management for digital initiatives; and
- Program implementation, management and agile leadership.

The training program design should help them integrate digital strategies with broader governance and privacy concerns. Content should also provide comparable case studies that detail practical and comparable digital development strategies.

Skill areas that they raised as requiring additional attention are:

- Strategic thinking;
- Change management;
- Data driven decision making;
- E-government practices;
- Cybersecurity;
- Artificial Intelligence;
- Digital tool integration, particularly document and workflow management systems;

- Program/ project management for digital initiatives, with an emphasis on monitoring and evaluation; and
- Digital communication tools and social media.

Learning preferences and usability needs

Insights

Leadership-level participants stressed practicality and engagement aspects.

Recommendations

- Design training programs that encourage trainees to make use of digital tools that are already in use across government departments.
- Leaders favor contextual training that directly relates to everyday tasks.
- Training should be flexible and interactive, to encourage effective learning.

ICT Leaders

ICT Directors, ICT Officers, CEOs & Heads of Technical Departments & offices

Skills

Insights

ICT Leaders are proficient in using digital tools and demonstrate comfort with introducing new technologies within their respective departments and agencies. Still, they recognize existing gaps in their digital preparedness.

Participants are knowledgeable and see the importance of project and change management procedures for successful digital initiatives but their

Recommendations

Training programs should provide educational content to reach expert level skills, in areas such as:

- Artificial intelligence;
- Privacy and security;
- Change management;
- Data analysis; and
- Project management and agile methodologies.

To address this gap, a standard project management methodology for government and stronger organizational support are needed to enable effective

skills are often limited by organizational blockers.

Proficient knowledge and practices in data privacy and security are present, with proactive measures like cybersecurity and technical controls in place. However, ICT Leaders point to a need to strengthen expertise in overcoming user resistance to successfully implement advanced security measures across departments.

Legacy systems and limited resources are significant obstacles to upskilling, especially in areas that require hands-on, practical experience with new and advanced technologies. Addressing these barriers is important for cultivating a more digitally advanced public service.

scaling of these practices across departments.

There is a need to consolidate expertise in change management practices to manage user resistance, with a focus on building user awareness and government-wide data privacy and security measures.

The designed training programs should contain material to develop ICT Leaders' skills in Project management for digital initiatives to equip them with the necessary tools to ease the transition to digital transformation.

Moreover, training should include opportunities to apply theoretical concepts to real-world scenarios. We heard that participants strongly favor training that is focused on practical applications and real-world scenarios, delivered via interactive, hands-on sessions. ICT Leaders lean towards content that is directly related to their role, using case studies and realistic challenges to enhance engagement and understanding.

Learning preferences and usability needs

Insights

In terms of practical needs, they prefer self-paced training, which they would easily be able to integrate within existing schedules. Additionally, clear milestones and progress trackers would help civil servants in this category monitor their learning and stay on track.

Recommendations

- Prioritize interactive and self-paced learning journeys.
- Include audiovisual content to maintain high engagement levels.
- Incorporate tests at the end of modules to test trainees' information retention levels.

Digital Implementers

Data Managers and Analysts, Software Developers, Graphic Designers, Cybersecurity and Audit

Skills

Insights

Digital Implementers are proficient in system thinking, particularly in stakeholder engagement and managing complex systems but their approach does not include the all-encompassing and integrated perspective that expert-level system thinking requires.

Digital Implementers show a proficient understanding of data privacy and security principles, such as GDPR compliance and basic cyber hygiene. Risk management practices, like incident response teams and heat maps, are present but do not extend to advanced strategies like predictive threat modeling or comprehensive security frameworks.

Across the Digital Implementers group, foundational understanding of digital tools and their integration into program management is evident. The cohort shows foundational change management practices by anticipating challenges, managing resistance and encouraging alignment within their respective departments and agencies.

Cybersecurity informants struggle with organizational resistance, often slowed by leadership reluctance to embrace change.

Recommendations

Provide training material that focuses on expanding their system thinking skills. Content should focus on long-term impacts and the integration of diverse stakeholders.

The program should also include real-world case studies that challenge trainees to apply expert-level system thinking in complex scenarios.

To address this gap, the upskilling training program should include:

- Risk management practices;
- Data management and security.

The training program should encompass methods to improve change management skills so as to consolidate systematic approaches for handling resistance on a larger scale and cultivating a culture of digital change within government.

Generational differences further complicate digital transformation, highlighting the need for strategies to bridge these divides.

Public servants in the Data management and analysis category demonstrate proficiency in commonly used digital tools like Power BI, LMS, and Tableau, with emerging integration of AI tools for analytics and cybersecurity.

To advance the use of AI in data analysis, cybersecurity and decision-making, Data management and analysis civil servants should consolidate their AI literacy levels. Specialized modules on AI applications, including predictive analytics and AI cybersecurity solutions should be included.

Groups are strongly aware of data governance and ethical AI principles and they are continuing to implement frameworks. The practical execution of thorough governance systems and ethical AI applications is still not complete.

The training programs should include strategies to integrate governance frameworks and ethical AI principles into everyday practices, with additional modules on:

- Data analytics; and
- Data-driven decision-making practices;

Groups display varying levels of proficiency in advanced technologies. Data management interviewees adopt a reactive approach to technology testing and implementation, focusing on functionality rather than strategic optimization. Software development representatives show adaptability and technical breadth, using open-source tools and diverse coding languages, but lack standardized frameworks for development, impacting scalability and efficiency.

Training should focus on cultivating a more proactive, strategic approach to technology implementation.

Learning preferences and usability needs

We heard that group discussions, team activities, and cohort-based environments are preferred for fostering peer support and engagement.

Training must address Kenyan-specific challenges by incorporating localized content, using accessible languages, and adapting to technological and infrastructural realities.

It should include practical, culturally relevant solutions, align with existing Kenyan policies, and use real-life case studies to ensure applicability and effectiveness in addressing the country's unique needs.

- Incorporate group discussions, team activities, and cohort-based environments to encourage collaboration and peer learning.
- Ensure training material relates to Kenyan-specific context, accounts for specific challenges (such as lack of modern infrastructure, limited data, government silos), and contains culturally relevant case studies.

Users

Archivists, Librarians, Public Communication Officers, Information Officers

Skills

Insights

Civil servants who classify as Users present solid digital literacy skills, with a good grasp on digital tool use.

Users mentioned using AI-based software, such as ChatGPT, for research and writing. Still, there is limited evidence that points to a rounded understanding of emerging technologies.

Throughout consultations with users, we have obtained limited information to indicate a good awareness of Human-centered design principles.

Recommendations

The training program should focus on improving their digital literacy skills in Excel, particularly for data analysis, formulas, and functions, as one participant stressed.

Provide training on Emerging technologies and AI to improve awareness on AI applications and help users understand and effectively use emerging technologies in their daily tasks.

Include training on human-centered design methodologies, emphasizing empathy, user needs, and iterative design processes that place citizens at the center of public service delivery.

Learning preferences and usability needs

User-level civil servants placed great emphasis on individualized learning journeys that accommodate unique needs and skill levels.

- Design training programs that cater to different learning speeds.
- Users show a preference for in-person learning, rather than online.
- They would like individual trainer interaction, which allows for personalized guidance and a deeper understanding of complex concepts.

Methodological approach

Overview of civil servants consultations

We mapped our target civil servants into **four distinct cohorts**:

Leaders	ICT Leaders	Digital Implementers	Users
Example roles: Cabinet secretaries, principal secretaries, secretaries, CEOs, director generals, department heads, and directors.	Example roles: Technical leaders, Heads of technical departments, Heads of ICT	Example roles: Software development & engineering roles, data management- and analysis roles, cybersecurity roles, IT project management roles, digital marketing-and ecommerce roles and telecom roles.	Example Roles: All users who are not under the developer-or leadership level
Example focus areas: Digital Leadership, change management in a digital age, digital strategy and governance.	Example focus areas: Digital Leadership, emerging technologies, digital translation.	Example focus areas: Advanced Programming, Data Science and Analytics, AI: Training on big data analysis, machine learning, and AI to improve decision-making and service delivery, Cybersecurity.	Example focus areas: Basic Digital Literacy: Training on essential software and digital skills all public servants need.

Fig. 2. Civil servants levels map

To collect useful insights for our Needs Assessment, **we collected data through user consultations and written interviews.**

Consultations

We conducted a total of 16 qualitative user consultations.

- We carried out two consultations with representatives of the **Leaders** group.
- Seven were with a total of twenty **ICT Leaders**, including ICT Directors, ICT Officers, CEOs, and Heads of Technical Departments and Offices.
- We conducted five group consultations with representatives from three user categories from across the **Digital Implementers** cohort - totalling 13 participants:

Cybersecurity and audit control, Data management and analysis, and Software development and Graphic Design.

- Two consultations were with **Users**.

Discussion guides for all civil servants groups are available in the Annex.

Written interviews

To facilitate data collection and accommodate the demanding schedules of higher-ranking civil servants, we have also employed written interviews. We have collected one written response from a Leader.

Analysis

To analyze the findings, **we adopted a qualitative skill-by-skill approach**. This approach allowed us to identify specific strengths and development areas within each user group by looking at thematic patterns, attitudes, and observed behaviors, and provide a nuanced understanding of the skills required across groups.

We designed a qualitative skills matrix to capture themes and patterns associated with each skill, enabling detailed insights into civil servants' proficiency levels, challenges, learning preferences, and needs. The skill matrix for all civil servant cohorts is available in the Annex.

We classified the perceived skill levels using a Red-Amber-Green (RAG) system, aligned with the three proficiency levels defined by the UNDP. This classification creates a standardized view of current competencies across all civil servant cohorts.

- **Red = Foundational**

Indicates a broad understanding and foundational knowledge of a subject, with the ability to perform basic tasks related to it.

- **Amber = Proficient**

Refers to a solid understanding of the subject, enabling the execution of more complex tasks and the ability to guide others in related activities.

- **Green = Expert**

Shows in-depth knowledge and expertise in the subject, demonstrated by applying tools and methods effectively and coaching others. Additionally, it points to the capability to integrate the skill and its practices throughout the organization and mentor others in doing the same.

The tables below classify the knowledge areas under examination and their corresponding skills for each target civil servant cohort.

The skills we have analyzed for **Leaders** are as follows:

Leaders	
Knowledge area	Skill
Digital Leadership, Strategy and Design	• System thinking • Strategic foresight • Change management • Digital strategy and governance • Public speaking • Digital leadership and planning • Cloud computing management
Data Use and Governance	• Digital Privacy and security standards.
Digital Management and Implementation	• Emerging technologies • Advanced technology and programming

Fig. 3. Observed Leaders skills

For **ICT Leaders**, the skills we have examined are:

ICT Leaders	
Knowledge area	Skill
Digital Leadership, Strategy and Design	• System thinking • Change management • Public speaking • Technical translation
Data Use and Governance	• Digital literacy • Cloud computing management • Privacy and security standards • Ethical AI
Digital Management	• Program/project management for digital initiatives

and Implementation	• Program implementation, management and agile leadership • Advanced technology and programming
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Fig. 4. Observed ICT Leaders skills

The three tables below outline the examined **skills specific to the three target groups** that fit under the **Digital Implementers cohort**:

- Data management and analysis;
- Cybersecurity and audit control; and
- Software development and Graphic design.

However, overlapping skills across these groups have been analyzed together in the detailed analysis section of this report.

Digital Implementers: Data Management and Analysis	
Knowledge area	Skill
Digital Leadership, Strategy and Design	• System thinking • Change management • Public speaking • Technical translation • Human-centered problem identification and solving
Data Use and Governance	• Digital literacy • Cloud computing management • Privacy and security standards • Ethical AI • Data analytics • Data visualization and predictive analytics • Data infrastructure and management • Data governance • Data-driven decision-making
Digital Management and Implementation	• People-centricity and citizen engagement skills • Program/project management for digital initiatives • Program implementation, management and agile leadership • Advanced technology and programming

Fig. 5. Observed Digital Implementers skills: Data management and analysis

Digital Implementers: Cybersecurity and Audit Control	
Knowledge area	Skill
Digital Leadership, Strategy and Design	• System thinking • Change management • Public speaking • Technical translation
Data Use and Governance	• Digital literacy • Cloud computing management • Cloud security • Privacy and security standards • Ethical AI • Risk assessment and management • Cybersecurity incident response • AI in cybersecurity
Digital Management and Implementation	• Program/project management for digital initiatives • Program implementation, management and agile leadership • Advanced technology and programming

Fig. 6. Observed Digital Implementers skills: Cybersecurity and audit control

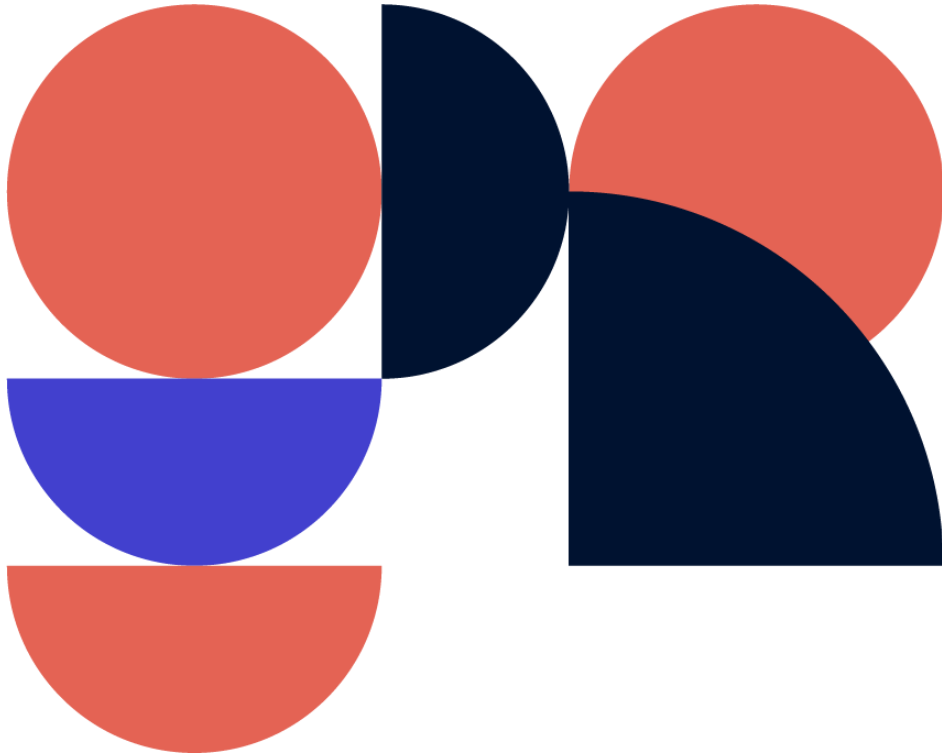
Digital Implementers: Software development and Graphic design	
Knowledge area	Skill
Digital Leadership, Strategy and Design	• System thinking • Change management • Public speaking • Technical translation
Data Use and Governance	• Digital literacy • Cloud computing management • Privacy and security standards • Ethical AI • OS technology and testing • User-centered design • Systems architecture and scalability
Digital Management and Implementation	• Program/ project management for digital initiatives • Program implementation, management and agile leadership • Advanced technology and programming

Fig. 7. Observed Digital Implementers skills: Software development and Graphic design

For civil servants who fall under ‘**Users**’, we have considered the following skills:

Users	
Knowledge area	Skill
Data Use and Governance	• Digital collaboration & communication • Human-centered design (awareness) • Basic digital literacy, incl. basic software skills • Bespoke government digital tools/ systems • Cybersecurity (awareness) • Data management & digital record handling • Internet navigation • Fundamental AI & emerging tech (awareness) • Digital service delivery & feedback loops

Fig. 8. Observed Users skills



Detailed Findings

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Detailed Findings

This section presents the detailed findings from our research, divided into two key areas:

- a) **Skills assessment:** Detailed insights into the perceived skill levels across user groups, highlighting current proficiency levels and gaps compared to desired outcomes.
- b) **Training delivery and usability needs:** Insights into user preferences for training delivery methods and their specific usability requirements for tailored programs.

a) Skills Assessment

1. Leaders

Executive Leadership, Directors, CEO's, and Heads of non-technical Departments

Knowledge area: Digital Leadership, Strategy and Design

Skill: System thinking

Skill level	
Current	Desired
Foundational: Basic understanding of the complexity and interconnectedness of problems in public service	Expert: Expertise in using advanced systems thinking tools and techniques to anticipate and address complex challenges, incorporating it into government strategies & implementation activities

The systems thinking proficiency of Leaders aligns well with the foundational level. Leaders are working on initiating basic but essential steps toward a more integrated and goal-oriented approach. They highlight the importance of a conversation at country-wide level to establish broader goals, which reflects an understanding of the need for big-scale alignment. However, this remains a preliminary stage in applying systems thinking, as it focuses on defining objectives rather than implementing solutions.

Their recognition of the need to improve existing data systems to enable better communication points to an awareness of the fragmented nature of current systems and silos across government departments and agencies in Kenya.

Leaders also emphasized inclusivity and wide communication, which suggests a focus on bringing stakeholders into the process and ensuring awareness. This is a key aspect of initiating systems thinking, as it lays the groundwork for collaboration. However, it stops short of demonstrating the ability to implement feedback loops, measure impacts, or adapt strategies - all of which are characteristic of more advanced systems thinking.

Skill: Strategic foresight

Skill level	
Current	Desired
Foundational: Basic awareness of strategic foresight and its importance	Expert: Expertise in using strategic foresight to develop long-term strategies and policies

Leaders' strategic foresight skill level is foundational. Their approach is based on staying informed and making individual efforts to introduce technology they perceive as appropriate. While this reflects a proactive mindset and an interest in anticipating future needs, it does not demonstrate the systematic or collaborative processes associated with higher levels of strategic foresight.

Skill: Change management

Skill level	
Current	Desired
Foundational: Basic knowledge of change management, its meaning & its importance in driving digital transformation	Expert: Expertise in leading large-scale change initiatives incl. organizational changes with a focus on digital transformation, fostering a new digital culture & mindset among staff

The change management proficiency of Leaders is at a foundational level. They are establishing the fundamental conditions for change without yet demonstrating advanced strategies for sustaining or scaling digital transformation. They are currently focused on building infrastructure and creating systems to enable civil servants under the user category to articulate their needs demonstrates a basic understanding of how to prepare the government services for change. However, this approach primarily addresses the prerequisites for change rather than the nuanced dynamics of leading and managing it.

"Communicate the 'why'"

The focus on “*communicating the why*” of the change is an important foundational step in building awareness and aligning stakeholders. This suggests that the efforts are primarily centered on gaining buy-in, rather than more complex practices, such as addressing resistance or

employing change champions to drive the mission.

Skill: Digital strategy and governance

Skill level	
Current	Desired
Foundational: Understands basic digital strategy concepts and the importance of governance.	Expert: Leads the creation of comprehensive digital strategies and governance models.

Their digital strategy planning and governance skills are foundational. Their focus on identifying problems, determining benefits, and establishing basic governance structures reflects an early-stage approach to building a digital strategy framework.

Skill: Digital leadership and planning

Skill level	
Current	Desired
Foundational: Understands basic concepts of digital leadership and strategic planning.	Expert: Shapes and champions a visionary digital strategy across government.

The Leaders' digital leadership and planning skills classify as foundational. Currently, efforts are primarily directed towards building the fundamental requirements for a digitized environment. Their focus is on providing essential infrastructure, such as computers, communication management, and office automation software, and setting up the groundwork.

They are working on establishing business processes and documenting workflows, which are necessary first steps toward consistency and operational efficiency. Overall, the processes are still in the developmental phase, suggesting that the public service has yet to fully transition into a digital-first approach.

Knowledge area: Data Use and Governance

Skill: Digital privacy and security

Skill level	
Current	Desired
Foundational: Basic understanding of privacy and security principles	Expert: Expertise in creating, managing and ensuring comprehensive privacy and security practices, including strategies & frameworks.

The skill level for privacy and security is foundational. Leaders are concerned with compliance with existing laws and the development of basic policies and procedures, which are considerations of the initial stages of building a privacy and security framework.

Knowledge area: Digital Management and Implementation

Skill: Advanced technology and programming

Skill level	
Current	Desired
Foundational: Basic understanding of advanced digital technologies and programming	Expert: Expertise in developing, maintaining, and improving digital systems and solutions

The proficiency level for advanced technology and programming is foundational. The focus is on planning to implement such technologies without evidence of execution, integration, or optimization. Planning reflects an awareness of the potential value that advanced technology and programming could bring but suggests the efforts are still in the preparatory stages. One participant mentioned reading to stay up to date. This reflects an understanding of the importance of keeping up with technological advancements.

2. ICT Leaders

ICT Directors, ICT Officers, CEOs & Heads of Technical Departments & offices

Knowledge area: Data use and governance

Skill: Digital literacy

Skill level	
Current	Desired
Proficient: Comfortable using a wide range of digital tools and technologies	Expert: Advanced skills in leveraging digital tools for enhanced productivity and innovation

Overall, digital literacy among ICT Leaders across government is adequate. Interviewees see the value of digital tools in improving efficiency and accountability in their roles. They show comfort with digital and AI productivity tools (Microsoft Copilot, ChatGPT, and Gemini), as well as analytical tools (Tableau, Python), which implies that some of the informants are beyond foundational and proficient levels. Many members of this group have already mastered skills that enable advanced productivity and innovation.

"I think when you are talking about digital tools, I would say that all of us are good with this."

Some interviewees spoke about **cultivating a culture that supports technical upskilling and shared digital knowledge**, even if expert digital skills are still developing for the majority of the ICT Leaders. In one consultation, we heard that champions and mentors work to support staff,

which signals a shift towards more community-oriented learning, where public servants can grow their digital skills collaboratively rather than through a strictly top-down approach. By training other public servants situated at user-level in the use and applicability of digital tools (e.g., for financial management), ICT Leaders actively contribute to digital transformation efforts, indicating proficient digital literacy skills.

"We are so optimistic and ready to take [AI] up."

While some informants display expert levels of digital literacy, they still face organizational blockers. Even though one participant is self-described as *"very comfortable with digital and AI,"* they point to a challenge

with change resistance, further stressing organizational hurdles faced when implementing or adapting new technologies.

Moreover, the **reliance on legacy systems** suggests that even though proficient digital skills are present, expert digital competencies (e.g., AI integration in public services) are lacking in most cases. They require additional efforts to develop their digital leadership and change management skills to support their role in building an environment of trust and adaptability within their departments.

Despite the noted gaps in expert digital literacy, **there is optimism and motivation to improve digital literacy skills**. All participants note they are open to upskilling and recognize the need for advanced training, particularly in data analysis and specific applications of AI. This mindset, together with current efforts in digital upskilling, indicates a readiness within government to advance digital literacy and fully adapt to modern digital tools. There is a clear opportunity to enhance digital literacy to include advanced skills in AI, moving all ICT Leaders toward the expert level.

Skill: Privacy and security

Skill level	
Current	Desired
Foundational: Basic understanding of privacy and security principles	Expert: Expertise in creating, managing and ensuring comprehensive privacy and security practices, including strategies & frameworks.

Privacy and security skills among ICT Leaders vary across government departments, with the majority classifying as foundational. While there is an overall foundational

“We are still working with the Office of the Data Protection to really help us on data privacy”

understanding of ethical data use and data privacy among ICT Leaders, capabilities differ significantly, especially in handling sensitive information and implementing robust security measures. In two cases, it is noted that departments collaborate closely with the Office of the Data Protection Commissioner (ODPC) to ensure adherence with data security standards.

Some public servants in this category show **foundational understanding of the principles of ethical data use**, particularly from a normative perspective. They value data privacy as central to innovation and see the risks of fragmented or poorly managed data leading to poor decision-making. They are aware of the need for compliance with privacy and data protection regulations like the Data Protection Act, highlighting foundational awareness of regulatory standards.

These **interviewees are starting to learn how to manage personally identifiable information (PII) but express a need for clarity.** Even though foundational knowledge is present, there is still a significant gap to reach a proficient level in handling sensitive information.

Other informants talked about the use of their department's technical control (for instance, log in systems, firewalls, Microsoft Defender), and access control through SharePoint to manage sensitive information. These security measures indicate **proficient levels in the effective implementation of security protocols.**

“There are several tools which are there to make sure that the data is secure.”

Moreover, we heard about the implementation of cybersecurity training cycles at regular intervals (6-12 months), along with monthly simulations (phishing exercises) in one government department. This effort demonstrates an ability to reinforce practical security measures effectively and maintain awareness among the team. One informant also noted that security awareness emails along with biweekly training sessions on tool use are employed within the same department, demonstrating a proactive approach to building cybersecurity-conscious habits.

Considering the uneven skill levels in privacy and security among ICT Leaders, **more advanced skills and standardization are needed across departments to ensure consistent security practices.**

Knowledge area: Digital leadership, strategy and design

Skill: System thinking

Skill level	
Current	Desired
Proficient: Basic understanding of the complexity and interconnectedness of problems in public service	Expert: Expertise in using advanced systems thinking tools and techniques to anticipate and address complex challenges, incorporating it into government strategies & implementation activities

Participants demonstrate proficiency in systems thinking. They present a solid understanding of the interconnectedness of people, processes, and technology within their respective departments and agencies. Moreover, they are able to pinpoint gaps and

organizational issues (such as resistance due to lack of skills or resources and the need for change management strategies to ensure continuity). ICT Leaders also present a good grasp on the broader implications of introducing new digital tools within a complex, multi-layered government environment.

Still, the people we interviewed failed to detail the methods of applying this knowledge to advance beyond problem identification. There is a noticeable gap in implementing the techniques needed to anticipate complex challenges and embed systems thinking into strategic government initiatives.

Skill: Change management

Skill level	
Current	Desired
Foundational: Basic knowledge of change management, its meaning & its importance in driving digital transformation	Expert: Expertise in leading large-scale change initiatives incl. organizational changes with a focus on digital transformation, fostering a new digital culture & mindset among staff

Participants presented a **wide range of skills in change management, varying from foundational, to expert proficiency.**

Some civil servants emphasized the **importance of impact and skill assessments, as well as infrastructure evaluation before implementing digital tools.** These preparatory measures indicate that ICT Leaders understand how to plan for potential challenges by looking at the readiness of both technology and people. This represents movement toward a proficient level, where they identify and address operational and infrastructure needs, though they may not yet have the knowledge or experience to conduct these assessments fully.

Managing user perceptions is signaled as a potential barrier but the general approach entails **tackling resistance individually rather than through broader strategies or structured communication efforts.** One interviewee stresses the importance of user support and fostering a culture of communication to ease the digital transition. Still, this seems to be at a project or team level, rather than leading large-scale transformation.

However, **there are technical leaders who stand out as having a more advanced and structured approach to change management.** Two respondents detailed initiating change management from the outset of projects and dividing requirements into system and user needs. They involve representatives from multiple government departments in decision-making, establishing cross-functional collaboration. Through testing services, they

ensure user acceptance and demonstrate adaptability and a commitment to user-centric design.

Despite these individual strengths, key skill gaps remain. A notable challenge is the absence of a formalized, structured change management approach across government organizations, making it difficult to achieve consistent proficiency levels. One ICT Leader notes that:

“There is a need for proper change management processes because whatever the new tool is introducing might have previously been done in a different way, or maybe was non-existent before, so it means there is a need for change management training to be able to support [the end-user].”

Issues like “scope creep,” weak handovers, outdated technology, and barriers to user acceptance underscore the need for integrated change management skills. Additionally, while some participants promoted grassroots involvement through mentors and champions to build buy-in, more consistent training on structured methods is needed to reduce resistance and enhance readiness.

Skill: Public speaking

Skill level	
Current	Desired
Proficient: Skilled at presenting complex topics clearly, tailoring content to different audiences, and using visual aids or storytelling to enhance understanding and engagement.	Expert: Advanced in delivering impactful presentations to large or varied audiences, handling challenging questions, and adjusting communication styles for maximum engagement and understanding.

Participants seem **comfortable with the principles of effective communication and understand its importance in managing projects**, handling resistance, and engaging stakeholders. They possess a solid ability to communicate and educate others in a government departmental context, suggesting a **proficient level in public speaking**, especially when explaining technical processes and project updates.

To reach expert levels, ICT Leaders would benefit from training to refine their ability to adjust communication approaches for different audience needs and contexts. This development would allow them to drive stakeholder engagement and support larger-scale initiatives more effectively.

Skill: Technical translation

Skill level
Current/ Desired
Expert: Proficient in interpreting and translating highly technical or specialized information for diverse stakeholders, using advanced techniques to ensure clarity, precision, and relevance.

ICT Leaders show an **expert level in technical translation**, as they are capable of identifying what needs to be explained, recognizing knowledge gaps among users, and stressing clear communication for successful adoption of new tools and processes (e.g., cloud storage and data recovery). They are capable of breaking down complex technical topics into simpler explanations to encourage understanding.

Knowledge area: Digital management and implementation

Skill: Program/project management for digital initiatives

Skill level	
Current	Desired
Foundational: Basic understanding of program/project management principles.	Expert: Expertise in leading digital projects, guiding teams, and ensuring alignment with organizational objectives

ICT Leaders show **foundational project management knowledge, particularly around the importance of standardized methodologies, resource allocation, and support from top management**. They are moving toward proficiency as they recognize critical components like sustainability, stakeholder management, and organizational alignment with strategic goals. However, they lack consistent experience and capabilities in executing projects independently, especially in the face of external constraints and limited internal capacity.

Across the board, **project management skills are framed as essential to successful digital initiatives**. Participants mention the need for a common project management methodology across government. This shows they understand the importance of consistent processes to improve project sustainability and effectiveness across government silos.

They successfully identified **knowledge gaps among team members in implementing new projects and expressed a need for internal skill-building to handle digital projects more effectively**. They understand that project sustainability requires internal expertise and

continuity beyond the implementation phase but have not yet established the capacity-building strategies necessary to advance their project management skills.

Skill: Program implementation, management and agile leadership

Skill level	
Current	Desired
Foundational: Familiar with foundational project management concepts and tools, able to assist in basic planning, tracking, and reporting under guidance.	Expert: Proficient in designing, implementing, and overseeing complex programs, fostering cross-functional collaboration, managing large teams, and using agile practices to drive innovation and continuous improvement.

Participants display **foundational skills in program implementation and management**, as they understand the importance of these concepts but are still working to overcome significant barriers (e.g., lack of resources, legacy systems). Their awareness of agile principles and change management needs indicates an emerging understanding of agile leadership but they lack the hands-on experience and established processes required for proficient agile program management.

Skill: Advanced technology and programming

Skill level	
Current	Desired
Foundational: Basic understanding of advanced digital technologies and programming	Expert: Expertise in developing, maintaining, and improving digital systems and solutions

Overall, ICT Leaders demonstrate **foundational skills in advanced technology and programming**. They show an understanding of basic programming and awareness of advanced concepts such as AI and machine learning (ML). They detailed the process of building functional systems, though limited in scale and complexity, pointing to a move toward proficiency in programming and application of digital tools.

Participants demonstrate a good grasp of programming basics and acknowledge the importance of coding in creating in-house solutions, like the payroll and management systems. They are progressing in coding skills, showing foundational knowledge that has been applied in simpler digital solutions. Still, advanced technologies are not yet fully

embraced within their government environment, largely due to their current reliance on legacy systems. One participant states that:

"I think this is where there is a problem; we studied it at university, but you will find that most of the processes in government [are] not up to speed with the current emerging trends in technology."

Within this context, **participants recognize AI as a critical tool** for transparency, cost efficiency, and service improvement, which shows understanding of its strategic value. **However, AI literacy and adoption within government among ICT Leaders seem limited.**

Despite studying AI at the university level, or using AI tools independently, the government's lag in technology adoption has hindered the practical application of AI skills in public service. Another participant further stresses the idea that AI knowledge is present but lacks applicability, pointing out that:

"We studied [Artificial Intelligence] at university, mostly in terms of the theories, but in terms of the tools and platforms themselves, I think a majority of us have not been exposed to them."

"Artificial intelligence is [used] more on a personal basis and not on the corporate scene"

Public servants also note that they use AI for personal initiatives but not widely at work, pointing to a gap between personal proficiency and professional application. This shows a broader organizational challenge in keeping up with technological advancements, which impacts digital literacy for public servants.

Participants highlight **challenges such as lack of time, funding, and organizational continuity** (due to staff mobility and transitions between departments) **that hinder their ability to execute advanced, long-term projects.** Another prominent blocker is the use of legacy systems, which prevents participants from engaging fully with advanced tools and techniques. They have identified the need to update their systems to implement AI or ML projects effectively, underscoring a lack of exposure to emerging technologies. Please visit the Annex for additional insight into these blockers.

They recognize that these constraints prevent the consistent application of coding and technology skills, which would otherwise allow them to work on more sophisticated systems. This awareness reflects a growing understanding of what is needed to reach a proficient level but indicates they are not yet there. Moreover, the current setup and limited training opportunities prevent them from advancing their expertise in technology and programming.

3. Digital Implementers

Data Managers and Analysts, Software Developers, Graphic Designers, Cybersecurity and Audit

Knowledge area: Digital leadership, strategy and design

Skill: System thinking

Skill level	
Current	Desired
Proficient: Basic understanding of the complexity and interconnectedness of problems in public service	Expert: Expertise in using advanced systems thinking tools and techniques to anticipate and address complex challenges, incorporating it into government strategies & implementation activities.

In terms of system thinking skills, Digital Implementers' skill level is proficient. Two participants from the Data management and analysis group emphasized broad stakeholder engagement and public participation, which also aligns well with human-centered design principles. Additionally, one participant in Software Development described their ability to handle complex elements such as stakeholder analysis, system integration, impact assessment, and prototyping. However, Digital Implementers interviewees do not yet demonstrate the deep, holistic thinking that would characterize expert-level skills in system thinking.

Skill: Change management

Skill level	
Current	Desired
Proficient: Ability to develop and apply strategies to manage resistance, communicate effectively, and ensure smooth transitions in smaller projects	Expert: Expertise in leading large-scale change initiatives incl. organizational changes with a focus on digital transformation, fostering a new digital culture & mindset among staff

Overall, the **Digital Implementers group exhibits a proficient level of change management**, showing strong skills in anticipating issues, managing user resistance,

providing tailored training, and fostering project alignment. However, there is a need to develop a systematic approach to address resistance at larger scales and cultivate a change-ready culture.

In the Data management and analysis group, participants spoke about anticipating and preparing for potential challenges before rolling out new initiatives. This includes foundational activities like infrastructure setup, which indicates a practical understanding of change management needs prior to implementation.

Similarly to the testimonies of ICT Leaders , we heard that **knowledge gaps among users is the primary source of resistance**. Digital Implementers also noted that, should the technology or system go down, users can lose trust and revert to old ways of working. This shows the group's awareness of key barriers to adoption.

By involving users throughout the process and actively communicating benefits, Data and management staff demonstrate the proficient ability to address and manage resistance effectively. Ensuring that there is a shared vision and involving all levels of the organization reflects a solid, proficient understanding of communication in change management. This promotes alignment and engagement, which are essential in digital transformation projects.

A software developer also highlighted that comprehensive user training and onboarding are in place across government departments, with a user support system in place (e.g., a call center with trained staff and infographics created by a media team). In cybersecurity, one participant elaborates on the process of launching a new system (e-gov procurement system), which is currently being piloted. The fact that the system is still in the pilot phase suggests that they are beginning the change management process.

Overall, the preparatory work is a proactive approach aligned with proficient change management practices, though expanding this scope to cover broader organizational impacts could enhance their strategic effectiveness. **There is a need to develop a systematic approach to address resistance at larger scales and cultivate a change-ready culture.**

Skill: Public speaking

Skill level	
Current	Desired
Proficient: Skilled at presenting complex topics clearly, tailoring content to different audiences, and using visual aids or storytelling to enhance understanding and engagement.	Expert: Proficient in delivering impactful presentations to large or varied audiences, handling challenging questions, and adjusting communication styles for maximum engagement and understanding.

Across all three observed Digital Implementers groups, **public speaking skills are at a proficient level.** Participants highlighted the importance of communicating with stakeholders, including keeping them informed about system developments and engaging with users for feedback. All interviewees seemed capable of presenting complex topics to stakeholders, adjusting the message to different groups (e.g., decision-makers, technical experts, users).

Skill: Technical translation

Skill level	
Current	Desired
Proficient: Capable of breaking down complex information into clear, structured explanations for diverse audiences, using analogies, visuals, and accessible language.	Expert: Proficient in interpreting and translating highly technical or specialized information for diverse stakeholders, using advanced techniques to ensure clarity, precision, and relevance.

All members of the Digital Implementers groups under consideration regularly work in environments where they must communicate technical information. This proves their **proficiency in ensuring stakeholders understand technical information.**

Skill: Human-centered problem identification and solving (Data management and analysis)

Skill level	
Current	Desired
Proficient: Ability to identify and solve problems considering users' needs and perspectives	Expert: Advanced skills in human-centered design and solving complex problems with user-focused solutions

The Digital Implementers groups collectively **demonstrate a proficient level in human-centered problem identification and solving**, with notable strengths in engaging with users, gathering feedback, and involving stakeholders in decision-making. **However, there are areas where deeper expertise in human-centered design techniques would be beneficial.**

One participant's focus on mapping user needs and collecting feedback from both citizens and civil servant users shows a practical approach to identifying issues from the user's

perspective. This indicates a proficient ability to consider users' needs when defining problem areas, supporting a more user-focused approach to solution design. Ensuring that diverse perspectives are considered is essential for user-focused problem-solving and reinforces the group's proficiency.

Another participant highlights a need to create more awareness among citizens and consult with stakeholders. Their mention of public awareness suggests a **foundational understanding but a limited hands-on experience** with in-depth human-centered problem-solving methods, as they seem less experienced in active user-driven solution design.

Knowledge area: Data use and governance

In this section, we examine the skill sets required for each Digital Implementers group individually:

- Data management and analysis;
- Cybersecurity and audit control; and
- Software development and Graphic Design.

A. Data management and analysis

Skill: Digital literacy

Skill level	
Current	Desired
Proficient: Comfortable using a wide range of digital tools and technologies	Expert: Advanced skills in leveraging digital tools for enhanced productivity and innovation

Participants from Data management and analysis show a **proficient level of digital literacy, with strong foundations in general digital tools and data analytics**. Across the board, they demonstrate a solid grasp of digital tools, especially in data-focused applications like Power BI, Python, and Tableau. These tools are commonly used for data analysis, showing that participants can navigate and utilize digital tools beyond foundational levels. Proficiency with Excel spreadsheets is also noted, although participants primarily use them for basic tasks. This could indicate a need for skill enhancement in advanced spreadsheet functions, including complex data manipulation and analysis.

“Personally I have knowledge in some of the tools but not in others.”

While the group is comfortable with digital tools, AI is signaled as an area of difficulty, especially in understanding and using AI in more strategic or innovative ways. Participants are familiar with AI-powered tools for analytics, but conceptual

and practical knowledge gaps are present in using AI to its full potential. AI awareness is also identified as medium across the broader public service, suggesting the need for introductory and intermediate-level AI training tailored to public sector use cases.

Skill: Data infrastructure and management

Skill level	
Current	Desired
Foundational: Understands core concepts of data storage and access; performs basic data management tasks such as data entry, retrieval, and ensuring data integrity.	Expert: Designs and oversees robust data infrastructure systems, integrating advanced tools and cloud platforms to enable large-scale data access, storage, and processing.

The group's current level of data management proficiency is foundational, based on their focus on early-stage planning and basic maintenance considerations rather than more advanced data management tasks or systems design. Their efforts are currently limited to planning and identifying necessary tools and establishing maintenance protocols rather than implementing or managing data infrastructure.

Two participants emphasize the importance of planning and maintaining data systems, which points to a solid grasp on data storage and access. Remarks about mapping required tools suggest they are focused on the fundamental aspects of data management but have not yet advanced to setting up or using intermediate tools or processes, such as SQL databases or ETL. The emphasis on maintenance plans indicates an awareness of data integrity and system upkeep.

Skill: Data analytics

Skill level	
Current	Desired
Foundational: Understands and applies basic analytical techniques, such as descriptive statistics and simple visualizations.	Expert: Applies complex analytical methods, including predictive modeling and scenario analysis, to support data-driven policy decisions.

As aforementioned, all participants noted they are in the early planning stages of developing a data infrastructure, identifying tools, and mapping requirements to conduct analyses:

“We want to venture into using data for informed decision-making. We are at the planning stage and therefore we are still working on the infrastructure, working on the aggregation of data and also ensuring that we get the analytical tools that can be used.”

The group's current progress indicates an understanding of the value of data analytics and a foundational knowledge of what is needed to build toward more advanced capabilities but they have not yet implemented the structures necessary for higher levels of analytical work. Based on the group's current focus and activities, their **data analytics proficiency is at the foundational level**.

Interviewees are aware of the preliminary steps required to begin analytical work, including data aggregation and infrastructure development. We heard that participants are making efforts to set up a data division, aggregate data, and identify appropriate analytical tools, which shows solid awareness of data management practices.

They have foundational insight into the types of analyses that will be important but we heard no evidence they are already applying these techniques. Their long-term vision includes using predictive analytics for resource allocation and policy forecasting, indicating an awareness of expert-level analytical methods. However, they are not yet at a stage to apply these methods, as the foundational infrastructure and tools are not fully in place.

Skill: Data visualization and predictive analytics

Skill level	
Current	Desired
Foundational: Creates basic charts to show data trends using tools like Excel. Understands simple forecasting concepts based on historical data.	Expert: Builds advanced, interactive dashboards and custom visualizations for real-time decision-making. Uses sophisticated predictive models (e.g., machine learning) to perform scenario analyses, translating findings into actionable insights for diverse audiences.

As our participants are still working on the infrastructure, they are not yet conducting significant analysis, which limits their ability to perform even basic predictive analytics or visualizations on existing data. Therefore, they **classify as ‘foundational.’**

Skill: Data-driven decision-making

Skill level	
Current	Desired
Foundational: Basic understanding of data-driven decision-making principles	Expert: Expertise in leveraging data for strategic decision-making and guiding others

Some participants highlight the need for public servants to better understand the role of data in driving development goals and initiatives. While proficient in technical tools, there appears to be a gap in connecting data use with broader developmental and organizational objectives. Overall, in terms of data-driven decision-making, our interviewees’ **skill level leans towards foundational.** However, it is worth noting that this is uneven, with room for improvement, particularly in joining existing technical capabilities with strategic digital development goals.

Skill: Data privacy and Security

Skill level	
Current	Desired
Proficient: Ability to implement privacy and security measures effectively.	Expert: Expertise in creating, managing and ensuring comprehensive privacy and security practices, including strategies & frameworks.

Throughout the consultation, there was a clear focus on data privacy, with one participant highlighting adherence to GDPR, and another noting the importance of impact assessments on data protection before system implementation. This shows that the group understands and implements the fundamental components of data governance, such as data privacy principles and compliance requirements. Therefore, this group's skill level is **foundational for data privacy and security**.

Skill: Data governance and AI ethics

Skill level	
Current	Desired
Proficient: Ability to apply data governance principles and address AI ethical considerations.	Expert: Expertise in creating & managing data governance frameworks & strategies and ensuring ethical AI/emerging tech practices

The cohort also demonstrated solid awareness of the importance of AI ethics and privacy by design principles, showing a commitment to ethical AI and data protection. Moreover, we heard from two participants that they are in the planning stage of implementing data governance initiatives in the two aforementioned areas.

While the group demonstrates proficient knowledge of data governance frameworks and the need for ethical AI practices, there is still a gap in implementation. They are working towards implementing these initiatives, but they are not yet fully executing or managing comprehensive governance systems or frameworks.

Therefore, the **Data analysis and management group demonstrates a proficient level of knowledge in data governance and AI ethics**. While they are still in the planning stage for some aspects, they have a strong awareness of key principles and are actively working towards establishing governance frameworks, especially around data privacy and AI ethical considerations.

B. Cybersecurity and audit control

Skill: Digital literacy

Skill level	
Current	Desired
Proficient: Comfortable using a wide range of digital tools and technologies	Expert: Advanced skills in leveraging digital tools for enhanced productivity and innovation

Cybersecurity staff use a range of digital tools daily, such as LMS (Learning Management Systems), NEIMS (National Education Management Information System), and Microsoft Dynamics (ARPs). These are standard tools used in the public sector, showing a proficient level in handling a wide range of tools.

The use of tools like Microsoft Dynamics and custom financial performance evaluation tools shows a level of automation awareness. The group also uses tools such as Microsoft Forms for training registration and engagement tracking, pointing to a proficient level in using digital tools for organizational processes, such as training and feedback collection.

Moreover, cybersecurity participants see the need for additional training on AI and they have begun to integrate AI tools for auxiliary tasks, such as OtterAI for transcribing meetings and using Slido to improve engagement. This indicates an understanding of AI tools, but they still have room for growth, especially in terms of advanced AI utilization for more complex tasks.

There is a strong promise that Cybersecurity staff are making strides towards the expert level. One participant notes that their technical team is well-versed in terms of digital skills, which implies regular use of digital tools and conformity with technology in their day to day work.

To sum up, the **cohort is proficient in using a variety of digital tools and technologies, with a strong grasp of commonly used tools in the public sector** (e.g., Microsoft Dynamics, Power BI, LMS). However, they **still have gaps in AI training**, as indicated by their recognition of the need for further AI learning. This gap shows that while they are comfortable using a range of tools, their digital literacy is not yet at an expert level.

Skill: Privacy and security

Skill level	
Current	Desired
Foundational: Basic understanding of privacy and security principles	Expert: Expertise in creating, managing and ensuring comprehensive privacy and security practices, including strategies & frameworks.

The group is mindful of the need to ensure that data is used only for its intended purposes. They are also aware of guidelines for handling sensitive data, such as access control, passwords, firewalls, and basic cyber hygiene. This shows a **foundational understanding of ethical data handling and privacy principles** but there is no mention of advanced data protection frameworks or strategies that would indicate a higher level of proficiency.

“[We perform] sensitisation for people to take care of their private information and not make it public.”

There is an acknowledgment that people are often the source of security issues, which is a common challenge in managing privacy and security. This awareness suggests that the group sees the importance of user behavior in maintaining privacy and security. However,

this also implies that there may be a gap in actively addressing human factors, such as providing ongoing training or promoting security awareness across all levels.

It is also of note that Cybersecurity and audit interviewees were especially reluctant to share detailed information throughout consultations, even though they expressed a solid understanding of the topics at hand. Their reticence to share information may suggest that they are aware of the implications of disclosing sensitive data, which can be seen as a sign of maturity in understanding privacy and security issues. They likely understand the importance of confidentiality in cybersecurity, especially when discussing sensitive details, and this might influence their reluctance to openly discuss these matters.

Skill: Risk assessment and management

Skill level	
Current	Desired
Proficient: Conducts thorough risk assessments, identifies and categorizes risks, and develops mitigation strategies.	Expert: Leads organization-wide risk assessment and management efforts, designing frameworks to identify, evaluate, and mitigate complex risks proactively.

The group demonstrates a proficient level of risk assessment and management skills.

They are taking systematic steps to identify, assess, and mitigate risks, such as conducting risk asset registers, using heat maps to visualize risks, and implementing basic security measures like two-factor authentication and password policies. Furthermore, one participant noted they have established an incident response team, which is an important component of a comprehensive risk management strategy.

Skill: AI in cybersecurity

Skill level	
Current	Desired
Proficient: Applies AI tools for cybersecurity, using techniques like behavioral analysis, threat intelligence, and automated response to identify and mitigate risks.	Expert: Designs and implements advanced AI-driven cybersecurity frameworks, using machine learning for predictive threat modeling, real-time threat response, and adaptive security measures.

The group demonstrates a proficient level of AI in cybersecurity. They have started exploring AI's applications in cybersecurity and have already begun to use it for trend detection, anomaly detection, and automated incident management.

"AI is a great enabler of business in every aspect and in every sphere."

One participant mentioned using AI-powered bots on Twitter to capture trends. This could be useful for identifying real-time security threats by tracking emerging discussions or incidents online. Overall, the group is particularly focused on integrating AI into threat management, threat detection, and pattern analysis. Another participant argues that AI is being considered to provide automated alerts and improve incident management.

The group recognizes that there is significant skepticism toward AI in Africa, particularly in areas such as verification, privacy, and financial systems that are prone to hacking. This suggests an awareness of some of the common concerns surrounding the ethical implications of AI, such as privacy violations, data security risks, and the lack of transparency in AI decision-making. We heard that *"there is no escaping it"*, which points to an understanding that AI is increasingly integral to technological progress and that it must be adopted thoughtfully.

Skill: Cloud security

Skill level	
Current	Desired
Proficient: Manages cloud security configurations, including identity management, network security, and compliance monitoring.	Expert: Designs and oversees comprehensive cloud security strategies, including advanced access control, threat intelligence, and automated compliance across complex cloud architectures.

The group as a whole appears to have a **proficient understanding of cloud security, with a focus on compliance with the Data Protection Act and the trust issues surrounding third-party cloud providers**. While there are concerns about cloud storage and a preference for local solutions (like Huawei infrastructure), they are familiar with the basics of cloud security and the measures necessary to safeguard data (e.g., firewalls, encryption).

Participants point to a trust issue again, this time around cloud storage in Kenya, with concerns about what third-party providers, like Microsoft, might be doing with the data. This highlights a significant barrier to cloud adoption: concerns about data privacy and security when storing data off-site, especially with global third-party providers.

C. Software development and Graphic Design

Skill: OS technology and testing

Skill level	
Current	Desired
Proficient: Solid grasp of operating system architecture, command-line tools, system updates, user permissions, and OS security fundamentals.	Expert: Advanced understanding of OS internals, including kernel architecture, process management, memory allocation, and advanced networking configurations.

In terms of OS technology and testing, one informant mentions only using Windows optimization tools such as Task Manager and Performance Monitor, due to resource restrictions. These are commonly used tools to monitor and improve the performance of operating systems by identifying resource hogs or potential issues.

“We don't have any specific tool that we use in government, [because we] don't have any budget allocation for this.”

The participant emphasizes that for most users, as long as they can access emails, write documents, and perform basic tasks (like Excel), no additional optimization tools or budgets are typically required. This suggests that their focus is on fundamental, day-to-day optimization rather than deep, technical performance optimization.

Given that they use these tools regularly to maintain system performance and understand the needs of users with basic computing tasks, they can be **classified as proficient at optimizing systems in the context of everyday user needs.**

Skill: User-centered design

Skill level	
Current	Desired
Proficient: Independently conducts user research, create wireframes, and design prototypes that address specific user needs.	Expert: Advanced skills in user research methodologies, interaction design, and prototyping.

Participants show a proficient understanding of accessibility practices. They are involved in managing government websites and domains and emphasize the importance of user accessibility for these sites. This indicates a commitment to ensuring that government websites are accessible to all users, including those with disabilities. Training for user accessibility is mentioned, suggesting that staff are taught about best practices for designing and managing websites that are accessible to all users, including people with disabilities.

Moreover, we heard about the use of accessibility tools to assess the accessibility of websites. These tools are integrated into browsers and help evaluate how well a website complies with accessibility standards, ensuring that it meets the needs of users with different abilities.

“We have optimization tools that we’re able to embed on our browsers to check the accessibility level of the site that we have designed, so that is one key thing that we use.”

The mention of adherence to Systems and Application Standards, including specific government standards for website and application accessibility, reinforces a systematic approach to making websites accessible.

Skill: Systems architecture, scalability

Skill level
Current/ Desired
Expert: Advanced knowledge of distributed systems, cloud architecture, and large-scale application design.

We heard that microservice architecture is employed, which involves breaking down systems into smaller, independent components that can be developed, deployed, and scaled individually. Microservices are particularly useful for creating scalable, flexible, and resilient systems. This approach is indicative of a high level of architectural understanding.

One participant spoke about striving to create systems that are scale-friendly and future-proof, meaning they consider the system's ability to handle growth in users, data, and functionality over time. This is key in creating systems that remain relevant and effective in the long term.

This mode of thinking demonstrates an **expert understanding of systems architecture**. Microservices require advanced knowledge of distributed systems, service communication patterns, and system design principles. Their emphasis on ensuring systems can grow and adapt indicates they are skilled at designing systems that can scale efficiently and handle future demands.

Skill: Privacy and security and Security integration, privacy and AI ethics

Skill level	
Current	Desired
Proficient: Ability to implement privacy and security measures effectively	Expert: Expertise in creating, managing and ensuring comprehensive privacy and security practices, including strategies & frameworks.

Our participant demonstrates a solid understanding of data privacy laws and regulations, especially the need for compliance with the Data Protection Act and approval from regulatory bodies like the Data Protection Commission. They clearly understand the importance of security and stress that it must be integrated into the design process from the beginning. This indicates a strong operational understanding of security by design, but there is no indication of advanced security strategies or frameworks (e.g., deep knowledge of threat modeling, encryption methods, or incident response).

They also recognize the importance of ethics in data handling and aligns their work with the organization's code of ethics or the constitution, suggesting a **proficient understanding of the ethical responsibilities involved in managing sensitive data.**

Knowledge area: Digital management and implementation

Skill: Program/project management for digital initiatives

Skill level	
Current	Desired
Foundational: Basic understanding of program/project management principles	Expert: Expertise in leading digital projects, guiding teams, and ensuring alignment with organizational objectives

Overall, **Digital Implementers show foundational skills in managing digital projects.**

Resistance from leadership slows the group's progress in adopting new technologies because they often believe *"If it's not broken, don't fix it."* The lack of advanced strategies to drive organizational buy-in reflects the resistance to effectively managing digital change and shows that improvement is needed in these areas.

"Every change has an aspect of resistance."

Awareness of potential risks associated with digital platforms indicates concerns about information security. These concerns are not adequately addressed in program management and a gap is revealed in integrating security protocols and guaranteeing the secure implementation of digital solutions. Digital Implementers concentrate on overcoming resistance to adopting digital tools and they also explore how advanced technologies can innovate or streamline processes.

We also heard about the differences between generations among end-users regarding tool adoption, which constitutes another challenge to the digital transition. Younger civil servants readily adopt digital tools, while more mature civil servants, usually at management level, hesitate to embrace such changes. The divide draws attention to the need for targeted strategies that address varying levels of openness to digital transformation and expert program management skills among Digital Implementers.

"We find that older users, those who are advanced in age, most of them in management, are not so receptive to new technologies, unlike the young employees who are coming on board."

Skill: Program implementation, management and agile leadership

Skill level	
Current	Desired
Proficient: Skilled in planning and executing projects, identifying and managing risks, allocating resources, and adapting to change within an agile environment.	Expert: Proficient in designing, implementing, and overseeing complex programs, fostering cross-functional collaboration, managing large teams, and using agile practices to drive innovation and continuous improvement.

Digital Implementers demonstrate a **proficient understanding of project management for digital initiatives and agile leadership**, with a solid grasp of scope management and the importance of communication and decision-making. One participant in Software Development identifies scope creep as a challenge that arises with every iteration in agile projects, demonstrating awareness of a key issue in agile project management. However, the ability to handle scope creep effectively often requires techniques such as backlog grooming, sprint planning, and stakeholder alignment, which we heard no mention of.

Skill: Advanced technology and programming

Skill level	
Current	Desired
Foundational: Basic understanding of advanced digital technologies and programming	Expert: Expertise in developing, maintaining, and improving digital systems and solutions

Digital Implementers show **limited experience in applying advanced technologies and programming**. Civil servants working in Data analysis and management mention testing solutions before procurement, which is carried out module by module. While this approach ensures that the tools are functional and meet immediate needs, it reflects a basic level of proficiency in utilizing data-driven methodologies to enhance decision-making or evaluate system performance comprehensively.

Monitoring the effectiveness of tested tools is a positive step but it remains reactive rather than strategic. There is little evidence of advanced capabilities in data integration, predictive analysis, or employing sophisticated programming techniques to enhance program management outcomes. The group's foundational level of expertise indicates a reliance on basic testing protocols rather than a proactive and innovative approach to managing and analyzing data for strategic insights and long-term improvements.

The software development group demonstrates a proficient level of skill in problem-solving and adaptability, particularly through exposure to a wide variety of advanced technologies, including open-source tools. Participants exhibit flexibility in using different coding languages based on project requirements, which underscores their ability to work across diverse technical environments. However, a significant challenge lies in the lack of a standardized framework for development within the government context.

4. Users

Archivists, Librarians, Public Communication Officers, Information Officers

Knowledge area: Data use and governance

Skill: Digital literacy

Skill level	
Current	Desired
Foundational: Can perform basic tasks such as operating devices and using essential software (e.g., word processors, browsers).	Expert: Expertly uses and integrates multiple software tools to streamline workflows.

The overall digital literacy of Users appears to be foundational, with solid evidence of movement towards proficient levels, with the majority of civil servants displaying proficiency in tools relevant to their roles. Their tool usage patterns suggest a functional understanding of technology tailored to their job-specific needs, as some demonstrate potential for broader application of digital skills.

While most are confident in basic tools like Word, there is a recurring need for enhanced skills in Excel, particularly for data analysis, formulas, and functions. Adaptability and the use of online resources are common themes, suggesting a willingness to learn and grow despite limited advanced expertise.

There is also evidence showing that participants display digital literacy skills that go beyond what is required in their job posts:

"Having [completed my] diploma in ICT, I think so far I don't find anything which is difficult to do on my computer."

Similarly to previous cohorts, limited or outdated infrastructure is often recognized as an impediment to digital literacy upskilling. Participants also note that they would appreciate the introduction of additional tools to enhance their work, for instance audio and video software.

Skill: Digital collaboration and communication

Skill level	
Current	Desired
Proficient: Confidently uses a range of tools (e.g., video conferencing, shared documents) for real-time collaboration and group communication.	Expert: Strategically uses advanced features of collaborative tools (e.g., project management software, integrated workflows) to drive team efficiency and engagement.

The group shows a proficient skill level in digital collaboration and communication.

They are skilled at using a variety of tools to communicate and collaborate across different platforms (email, Google Meet, WhatsApp, Google Drive, SharePoint). They are comfortable using both messaging and video conferencing tools to facilitate discussions and share information in real-time. While they demonstrate good competence, advanced collaboration strategies or the use of more sophisticated platforms (e.g., project management tools) were not mentioned.

The group frequently references using Google Meet and WhatsApp for communication and collaboration. Google Meet is commonly mentioned, suggesting they are comfortable with virtual meetings, which is a crucial part of digital collaboration. The use of WhatsApp for group communication is another indicator of proficiency, as it demonstrates familiarity with instant messaging tools for real-time communication, especially when teams are not in the same physical location.

We heard about employing digital tools to coordinate with different departments or regional offices, which demonstrates an ability to manage communication across various teams and stakeholders effectively. This is crucial in any professional environment that requires collaboration across teams, departments, or regions.

Skill: Bespoke government digital tools/ systems

Skill level	
Current	Desired
Proficient: Efficiently uses a range of role-specific government tools to complete tasks independently.	Expert: Mastery of role-specific government systems, including advanced features and integrations.

The group shows a **solid understanding of role-specific digital tools and processes at a functional level, but with room for improvement**. These are **characteristics of a proficient skill level**. Particular areas that require additional attention to help them transition to an expert level are advanced system integration, modern database management, and seamless adoption of newer technologies.

Some interviewees show proficiency in a specialized domain. Their use of Adobe Photoshop and Lightroom, professional photo editing software, suggests a moderate level of technical expertise specific to image editing. They express ease with the tools, indicating familiarity and capability in their application. They note that their skills in this area are sufficient to complete all job-related tasks, especially in communication roles.

Participants note that there is resistance among civil servants to adopt new digital services, with change management identified as a critical challenge. As with previous cohorts, they point to generational aversions and comfortability with existing tools and processes.

"I mostly use the Adobe Lightroom software, as I handle photography, and I don't have a problem with it so far."

A recurring theme is the use of the CDIS database, which is outdated and incompatible with modern operating systems. The reliance on Windows 7 - no longer supported by Microsoft - presents significant challenges, such as system bugs and slow performance. This limits the ability of civil servants to efficiently manage and retrieve data. These challenges drive users to seek alternative methods to perform their tasks efficiently. This is consistent with the statements of Digital Implementers, who noted:

"Sometimes the systems don't have a value to the user, so after a certain duration the users are no longer using it, they're no longer interested. They don't see the need to."

Two participants operating in the same department work with legacy systems. They demonstrate an understanding of the need for modernization. We heard about the planned adoption of Linux and exploration of Atro, which reflects a willingness to adapt to newer technologies, though the transition may require upskilling for optimal implementation.

Lack of resource allocation constitutes another impediment to the adoption of other role-specific digital tools. Some civil servants note that they commonly use the free version of necessary software, rather than the paid one, which - in most cases - offers more features and functionality, as well as better security measures.

Skill: Cybersecurity

Skill level	
Current	Desired
Foundational: Aware of basic cybersecurity practices, such as creating strong passwords, recognizing phishing attempts, and avoiding unsafe websites.	Expert: Deep knowledge of cybersecurity principles and emerging threats.

The Users' skill level in cybersecurity coincides with 'foundational.' Some civil servants mention that they change their passwords regularly, which is a positive cybersecurity practice. One participant also noted that they take additional precautions when sharing confidential or official information via email platforms.

Moreover, a few individuals express concern about the security of their systems, with issues around managing passwords and ensuring data security. There is a general awareness of the need for secure systems, although one member notes a lack of secondary storage options in the event of a computer failure. This awareness of security vulnerabilities is important but indicates a **reactive mindset rather than proactive cybersecurity practices**.

The mention of workshops on the proper use of devices and data management shows an effort to gain awareness. Simultaneously, the ongoing need for user education signifies that foundational skills have not yet fully transitioned to proficiency.

Additionally, there is no mention of the use of password managers or advanced authentication methods (e.g., two-factor authentication), which would indicate a higher level of awareness. They are more focused on the basics, such as managing passwords and data organization, but they are not yet fully aware of or equipped with the tools to mitigate more complex cybersecurity risks.

Skill: Data management and digital record handling

Skill level	
Current	Desired
Proficient: Efficiently manages digital records, including organizing, retrieving, and backing up data.	Expert: Mastery in organizing complex data sets across multiple platforms. Ensures data is stored securely, efficiently retrieves records, and maintains consistent data quality.

The group demonstrates a **proficient level of skill in managing data and digital records**, with a clear understanding of various tools for organizing, storing, and sharing information. Most individuals are using a combination of personal devices and cloud-based solutions to store and access their data. Common tools mentioned include Google Drive, SharePoint, and personal desktop or laptop computers for both work and personal data. They seem comfortable with organizing data into *"logical folders"* (e.g., minutes, reports) using tags and using cloud storage for collaboration, though scalability and security are recurring challenges.

One participant mentioned their department is currently working on introducing a document management system to move towards becoming a paperless organization and enabling work away from the office. Civil servants are currently undergoing training to ensure a smooth transition:

"I think that is a tool which will assist us in going paperless and doing work anywhere we are without being physically in the office. [...] We are still being trained on it before we go live."

***"We do not use data.
Data is not collected"***

Still, improvements are needed in areas like advanced data management, security practices, and infrastructure upgrades. For example, introducing more robust solutions for backup and

disaster recovery, or change management skills to prepare for a smooth transition to upgraded server storage to handle larger volumes of data, would further enhance the group's ability to manage digital records efficiently.

Additionally, there is a clear need for more technical upskilling in system administration, data security, and cloud-based collaboration tools to improve the management of digital records. There is also recognition among users of limitations regarding server scalability, particularly as the amount of stored data increases. Interviewees acknowledge challenges with managing office servers, which are crucial for storing large amounts of digitized records. Issues include limited space, lack of funds for server expansion, and inadequate external support for server management.

Skill: Internet navigation

Skill level	
Current	Desired
Proficient: Efficiently uses advanced search techniques, such as filters and keywords, to find specific information.	Expert: Expertly navigates complex websites, online databases, and digital platforms. Uses advanced search strategies, verifies online information, and manages multiple resources effectively.

The group demonstrates a proficient skill level in internet navigation. They are able to use a range of online tools and platforms to conduct research required as part of their roles, as well as to collaborate, share data, and communicate effectively. They show an ability to manage and access information online across multiple devices and platforms.

The use of Google Meet for virtual meetings and WhatsApp for communication shows they are adept at using various online communication platforms. This implies familiarity with navigating and utilizing social or professional tools on the internet for team collaboration. As they commonly use online research methods to carry out tasks, one participant points out they take additional measures to ensure the validity of the information they find online, demonstrating movement towards expert skill levels.

Skill: Fundamental AI and emerging tech (awareness)

Skill level	
Current	Desired
Foundational: Aware of basic AI concepts and emerging technologies. Understands their common uses but has limited experience with them.	Expert: In-depth knowledge of AI and emerging tech trends, including their impact on industries and society.

Users display a **foundational skill level in AI and emerging technologies, with potential for growth in using AI and automation tools more effectively.** As demonstrated by the participants' use of ChatGPT for enhanced communication or research, there is an awareness of AI's utility and emerging technologies but their interaction with them seems limited and task-specific.

"Occasionally, I use ChatGPT AI for language and time efficiency reasons."

Multiple participants single out ChatGPT as an AI tool they commonly employ. Still, they see its limitations:

"One of the major challenges I experienced with ChatGPT is the lack of context. It can easily misinterpret [the prompt], which may lead to inaccurate or irrelevant information."

The group could benefit from deeper training in using AI to streamline tasks, improve workflows, and improve decision-making. Introducing advanced tools for data analysis, machine learning applications, and automation of routine manual processes could lead to more efficient operations and better service delivery.

Skill: Digital service delivery and feedback loops

Skill level	
Current	Desired
Foundational: Can use basic digital tools and platforms to deliver services to citizens (e.g., processing forms, responding to inquiries). Understands how to collect feedback through simple channels (e.g., surveys) but may need guidance in analyzing or applying it.	Expert: Masters the use of advanced digital tools and platforms for seamless service delivery, effectively managing complex workflows. Leads the design and implementation of feedback loops, integrates insights into service enhancements, and drives continuous improvement based on citizen input.

Users show basic digital service delivery capabilities but face significant gaps in infrastructure, security, advanced tool usage, and feedback mechanisms. They are aware of the importance of these elements but require targeted training and structural improvements to elevate their service delivery and feedback practices to a proficient level.

Skill: Human-centered design (awareness)

Skill level	
Current	Desired
Foundational: Has a basic awareness of human-centered design principles, such as focusing on user needs and empathy.	Expert: Deeply understands and advocates for human-centred design.

The group's skill level in Human-centered design awareness appears to be basic or limited, based on the feedback provided during consultations. While there was a general interest in aligning training with practical, real-world applications, including enhancing

service delivery, there was no indication of a deep understanding or extensive experience with Human-centered design principles.

b) Training Delivery & Usability Needs

Delivery preferences

Leaders

*Executive leadership,
Directors, Officers,
CEOs, & Heads of
non-technical areas*

Use of existing digital tools

Leaders would prefer to learn to make better use of existing digital tools, suggesting that they favor training that is closely tied to existing processes. They would also like training to be relevant and directly useful for their roles.

Flexible learning environments are favored

Leaders showed a preference for both in-person and online learning, stressing the importance of flexibility in training. The focus on practical learning, where users interact with the technology being introduced, suggests that hands-on learning is a key preference.

ICT Leaders

*ICT Directors, ICT
Officers, CEOs & Heads
of Technical
Departments & offices*

A hybrid learning delivery is preferred

A hybrid delivery style, which combines online learning with in-person delivery, would allow trainees to delve into the material at their own pace, with the opportunity to deepen discussions and carry out collaborative activities. Face-to-face sessions are seen as a valuable part of training and are welcomed by participants.

They would opt for self-paced learning, so modules should be available on-demand. For asynchronous learning, participants prefer content that is visually engaging, incorporating videos and infographics. All materials should be downloadable for easy reference. In terms of tone and style, they would be more receptive to content that is straightforward, non-academic, which mimics real-world environments.

Time constraints are an important issue. When considering synchronous online learning and live interactive sessions, ICT Leaders would like sessions to take place during working hours, avoiding commuting times. An ideal session would last 30 to 60 minutes, so as to fit within work schedules.

Emphasized practical learning

There is a strong preference for a combination of theoretical and practical training, with a heavier emphasis on practical applications. Some participants believe interactive sessions are opportune occasions to apply theoretical skills in simulated environments or through guided activities.

All training should be scenario-based, enabling participants to engage with real-life situations and challenges they might face in their roles. The content should be structured around real-life challenges rather than theoretical concepts, encouraging engagement and making the learning immediately applicable to their daily roles. Real-world case studies and scenario-based exercises should be woven into the training. ICT Leaders would benefit from a virtual sandbox or simulation environment where they can practice using digital tools in a risk-free space.

Finally, they would like to earn recognized certifications, potentially through a performance review at the end of the training, to validate their progress and achievements.

Digital Implementers

Data Managers and Analysts, Software Developers, Graphic Designers, Cybersecurity and Audit

Participants from across the Digital Implementers group echoed the delivery preferences of the Leaders: they strongly emphasize the importance of practical learning that simulates real-life challenges for information retention. This is particularly valued by the Data management and analysis cohort, where scenario-based exercises help trainees connect theoretical knowledge to real-world applications.

Similarly to the leadership-level, Digital Implementers also favor a blend between in-person and online sessions, with the latter being recognized for its flexibility and convenience.

Opportunities for peer collaboration

Some participants prefer learning methods such as group discussions and team activities. They argue that cohort-based learning environments cultivate mutual support and peer engagement, further enhancing the learning experience.

Relevance and applicability to the local context

Relevance to the local context is seen as another important consideration. Interviewees stressed the importance of considering and addressing Kenyan-specific challenges in the training context, so that the learning is directly applicable and impactful.

Accessibility and inclusivity

Participants are also concerned with ensuring that the content included in the training is tailored to cater for learners with disabilities, such as vision and hearing impairments. Additionally, different digital literacy levels across the public sector, along with differing technological limitations, impact training delivery. Participants stressed that not all learners are proficient in navigating the digital environment, making digital skills training a necessary component of any training.

There was some hesitation and uncertainty during consultations when participants were asked about specific delivery preferences. It seemed as though they were unsure what to suggest or how to articulate their preferences clearly, indicating a possible lack of familiarity with different training formats or uncertainty about what would work best for them. Still, a few points came through clearly.

Similarly to other levels, users strongly prefer hands-on, practical learning experiences that go beyond theoretical instruction. They value training that allows them to apply concepts directly, as this real-world application helps reinforce knowledge.

Users

*Archivists, Librarians,
Public Communication
Officers, Information
Officers*

Preference for in-person learning

The group expressed a strong preference for in-person interactions over remote or asynchronous learning. This preference may stem from challenges in maintaining focus when engaging with online training materials independently. One civil servant explicitly mentioned struggling to commit to online sessions due to competing personal and professional responsibilities, highlighting the need for structured, instructor-led sessions that provide accountability and consistency.

Individual trainer interaction

Many participants emphasized the importance of personalized interaction with trainers, with two individuals specifically mentioning the value of one-on-one sessions. These personalized interactions help deepen engagement and provide opportunities to clarify challenging concepts.

Relevance to daily responsibilities

Participants expressed that the content should directly support their professional contexts, such as improving service delivery or facilitating transitions to digital and paperless operations. While there is openness to training on various tools, this is contingent on the tools being relevant to their work. Additionally, there is a noted need for general ICT skills, particularly in areas like data recovery and safeguarding information, to support broader professional competencies.

Usability needs

Leaders

*Executive leadership,
Directors, Officers,
CEOs, & Heads of
non-technical areas*

Preference for interactive learning

Usability is reflected in the preference for interactive learning, where users can directly engage with the system and receive real-time feedback. This interaction requires the tools and systems to be intuitive, with minimal barriers to adoption.

ICT Leaders

*ICT Directors, ICT
Officers, CEOs & Heads
of Technical
Departments & offices*

ICT Leaders have identified several usability needs to enhance the learning experience and support effective training completion.

Progress-tracking capabilities

ICT Leaders would like a progress tracker that clearly shows how much of the course is complete and what remains, making it easy to monitor their advancement. To further encourage completion, they prefer training with clear milestones, specific times to cover material, and structured deadlines.

They prefer assignments that can be completed gradually rather than in one sitting, allowing them to apply what they have learned over time.

Resource hub access

A dedicated resource hub where learners can access previous materials, session recordings, and downloadable resources (for instance, relevant guidelines, policies, frameworks) would support continuous learning and make it easy to revisit past lessons.

Clear and structured learning frameworks

Digital Implementation representatives would like to have clear and well-structured learning frameworks to guide the training. Measurable milestones and deadlines are also preferred as accountability mechanisms to help trained stay on track and complete the programs successfully.

Digital Implementers

Data Managers and Analysts, Software Developers, Graphic Designers, Cybersecurity and Audit

Preference for user-friendly learning platforms

In terms of past learning experiences, interviewees express a preference for platforms like Moodle, Google, or Coursera. These we picked out for their user-friendly design and ability to deliver well-structured courses. Additionally, their familiarity with other learning platforms suggests they are accustomed to this mode of learning .

Opportunities for feedback and adaptive learning

Finally, participants declare that they would like the opportunity to provide feedback for the training. This preference for interactive learning environments reflects a desire for adaptive platforms that incorporate trainee input to improve the content and delivery.

Users

Archivists, Librarians, Public Communication Officers, Information Officers

Accommodating different learning speeds

Some participants emphasized the importance of accommodating varying learning speeds within the training environment. They noted that trainers should ensure all participants are included and engaged, suggesting that personalized pacing and flexibility are key usability needs.

Feedback and iterative learning

There was a preference for incorporating feedback at the end of training sessions. This reflects a desire for a learning process that is interactive and iterative. To further enhance engagement, some participants suggested including interactive elements, such as games, within the training sessions.

Progress assessment for skill development

One participant suggested the inclusion of assessments during training to gauge progress. These assessments could help track individual development and provide valuable feedback for continuous skill improvement post-training.

Annex

Challenges to advancing digital skills

We have included potential impediments to digital upskilling of the public service in Kenya. By including these challenges, we encourage stakeholders to consider the necessary interventions for creating an enabling environment for digital skills development.

Outdated systems impede digital growth

We observed a constant thread across the skill gap assessment: the use of legacy systems and limited access to 'modern' platforms. This reveals a technological infrastructure gap and restricts the development of expert digital skills. Participants suggest they lack exposure to up-to-date tools and platforms, which keeps their digital skill level between foundational to proficient in most areas, with few opportunities for hands-on learning of advanced tools.

Bridging gaps in stakeholder engagement and alignment

Participants identified challenges in effectively engaging stakeholders, particularly due to a lack of bottom-up communication approaches to secure project buy-in. This reveals an organizational gap in strategies for user engagement and achieving alignment on project goals, as current approaches may not fully address the need for inclusive input from all project stakeholders.

A common theme is the reliance on top management support to secure resources, reduce resistance, and align project objectives with broader strategic goals. While participants understand the importance of organizational backing, limited autonomy in engaging leadership and influencing decision-making restricts their ability to align initiatives with the needs of their teams and end users.

Digital projects are often short

Sustaining projects beyond initial implementation presents additional challenges. The ongoing need for funding and resources to ensure long-term success indicates that participants may lack the skills or organizational support necessary to plan for and secure project sustainability, pointing to a broader need for strategic alignment and dedicated resources for continuity.

Limited interoperability within government

The lack of interoperability between departments is another significant barrier, indicating a need for more proficient project management practices to ensure systems can communicate effectively. Participants recognize this issue but lack the skills or tools to address it.

Data collection and analysis methodology caveats

The consultation involved between 1 to 8 participants and lasted between 60 to 90 minutes. To encourage comprehensive responses, we limited the number of questions to a maximum of eight. As a result, while we had prepared specific questions for each skill across all civil servant cohorts, time constraints prevented us from addressing all of them. To manage this, we merged related skills - for instance, Cloud computing management was included under Digital literacy for the Digital Implementers. We employed observation methods, recording insights that could be relevant to skill areas not explicitly covered in the discussion guides, to make informed assumptions about participants' proficiency in other areas.

Limitations

We faced challenges in recruiting participants from the Leaders cohort for consultations. To ensure we gathered a representative number of responses, we distributed written interviews. Still, responses remained limited.

Additionally, some participants were hesitant to answer our questions during consultations, often due to security concerns. These concerns were carefully considered when assessing and assigning skill levels.

Skills matrix and discussion guides

The Skills matrix we used to assign proficiency levels, including a list of questions with indications of those asked to each user group, is available through this public Google Drive link: [\[UNDP Kenya Centre of Competence. Knowledge areas & Skills Matrix - Google Sheets\]](#).