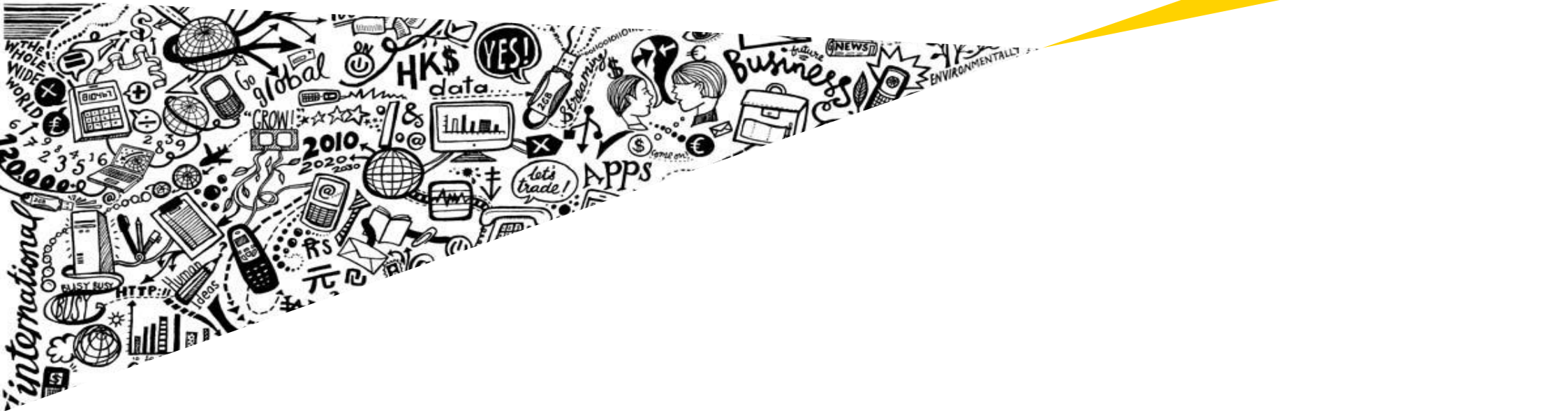


National Information Technology Authority

Uganda E-Government Readiness  
Assessment 2012  
Final Report

06 December 2012



# Survey Results Highlights

## Government of Uganda E-Government Readiness Landscape

### Government ICT Governance and Spend

30

Institutions with IT Strategic Plans

5

Institutions with e-Records Policy

0.5%

ICT Percent of Overall Budget

### Government ICT Infrastructure and Access to Infrastructure

52%

Percent of staff with computers

2010

Average year of last computer buy

71

Institutions with VoIP phones

### Government Access to the Internet and ICT Training

85

Institutions with websites

38.5%

Percent of staff with access to Internet

32%

Percent of staff with ICT training

### Businesses & Citizens' Perceptions, Priorities & Access

14%

Satisfied with current e-Government services

83%

Highest priority service: e-Banking

51%

Mobile phone penetration rate



Good



Progressing Well



Needs Addressing



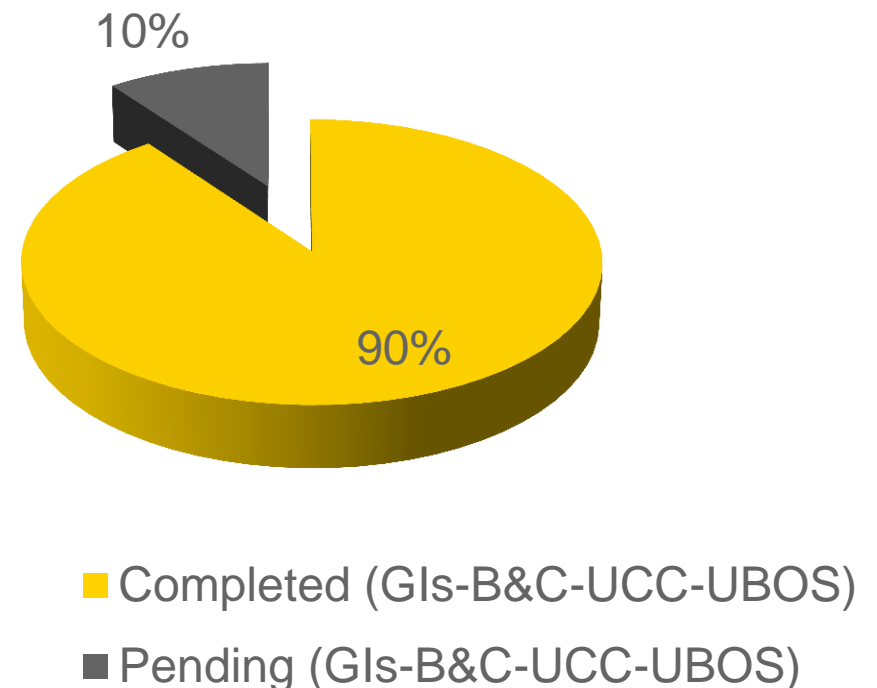
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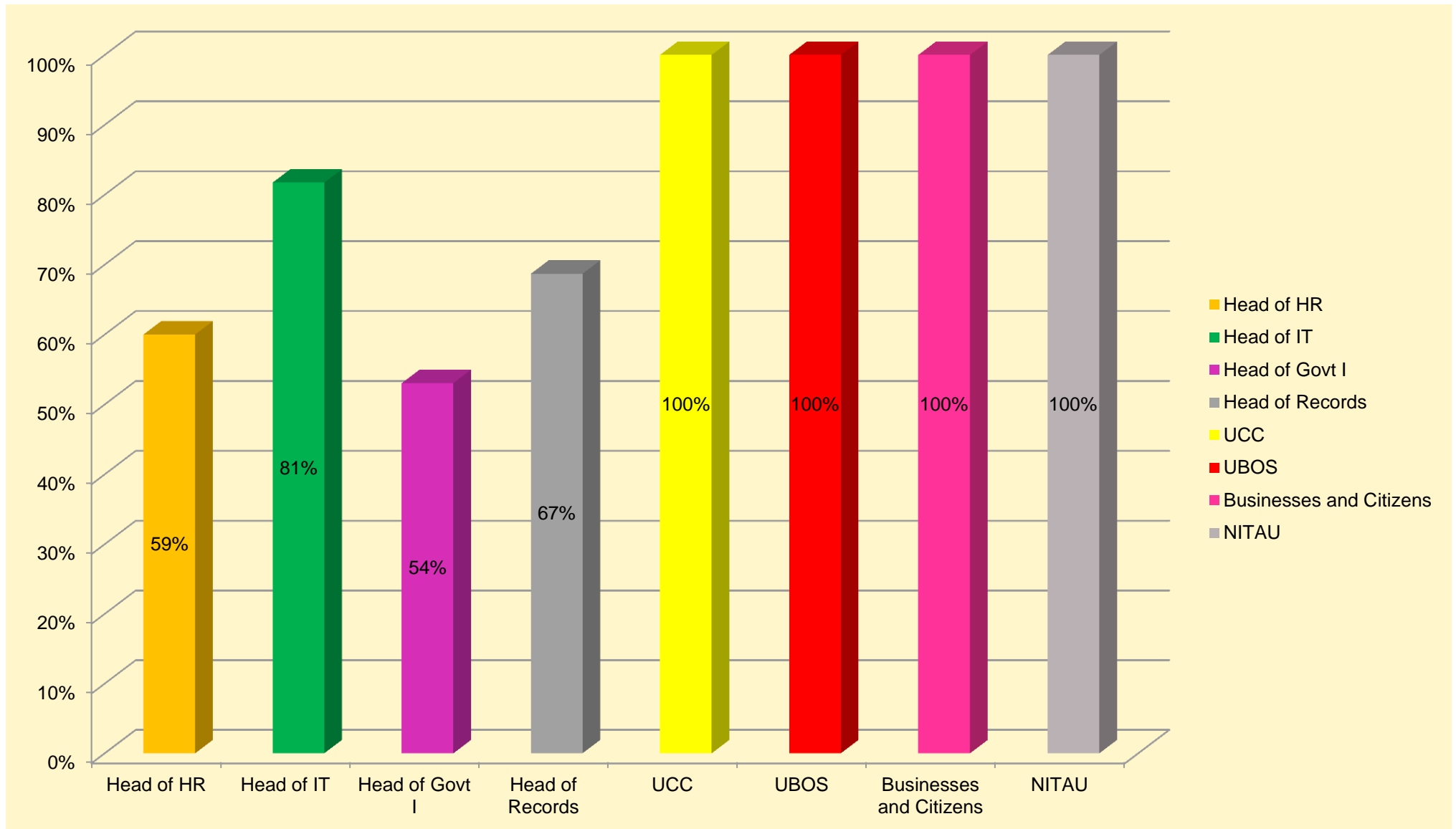
## Survey completion statistics

# Overall survey completion status

- ▶ Overall targeted respondents per category
  - ▶ Businesses and Citizens (B&C) = 1,119
  - ▶ Government Institutions (GIs) = 460
  - ▶ Uganda Communications Commission (UCC) = 1
  - ▶ Uganda Bureau of Statistics (UBOS) = 1
  - ▶ National Information Technology
- ▶ **Total Targeted = 1,582 Respondents**
- ▶ Completed = 1,425 [90%]
- ▶ Did Not Respond = 156 [10%]

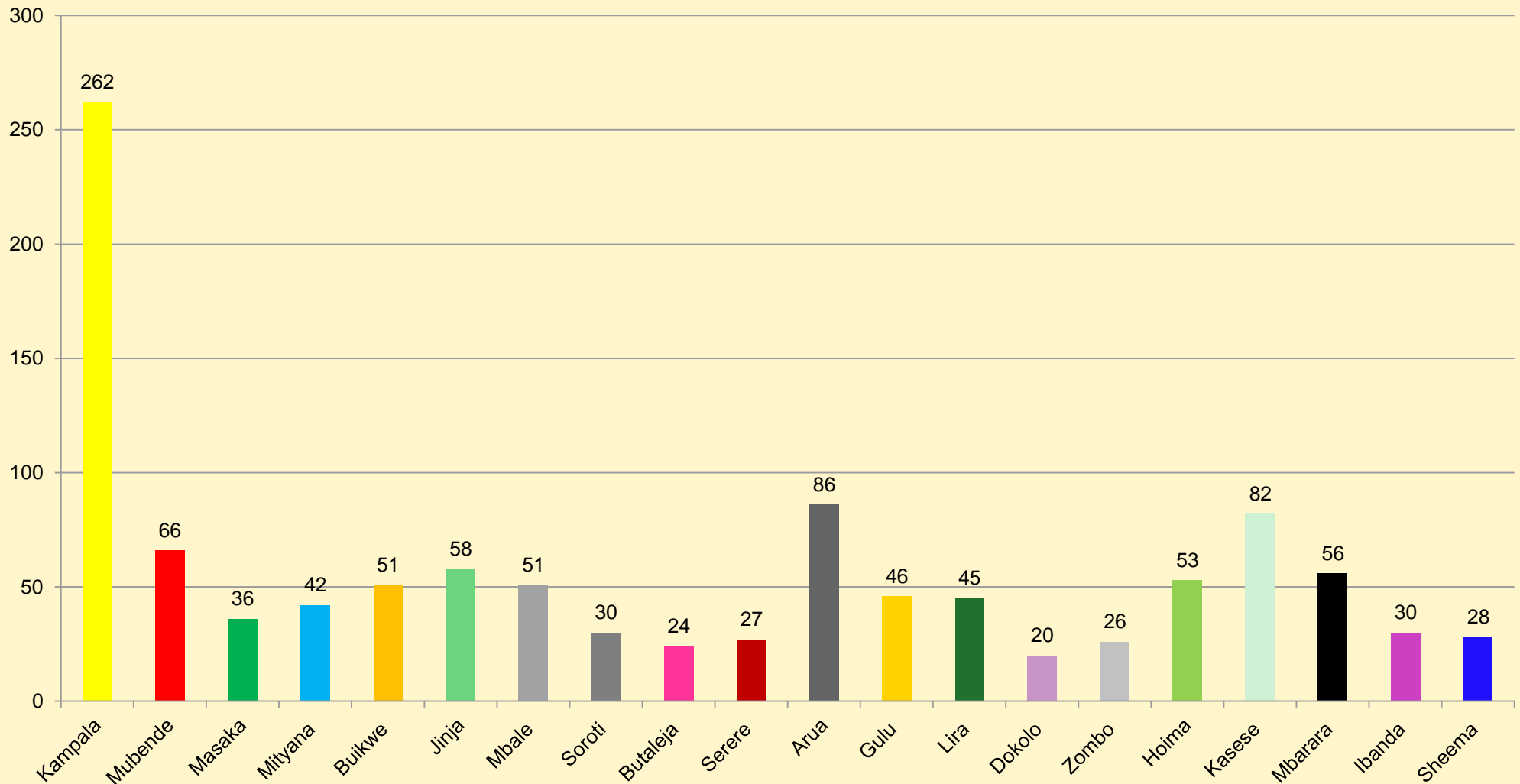


# Survey Completion Percentage Per Target Category

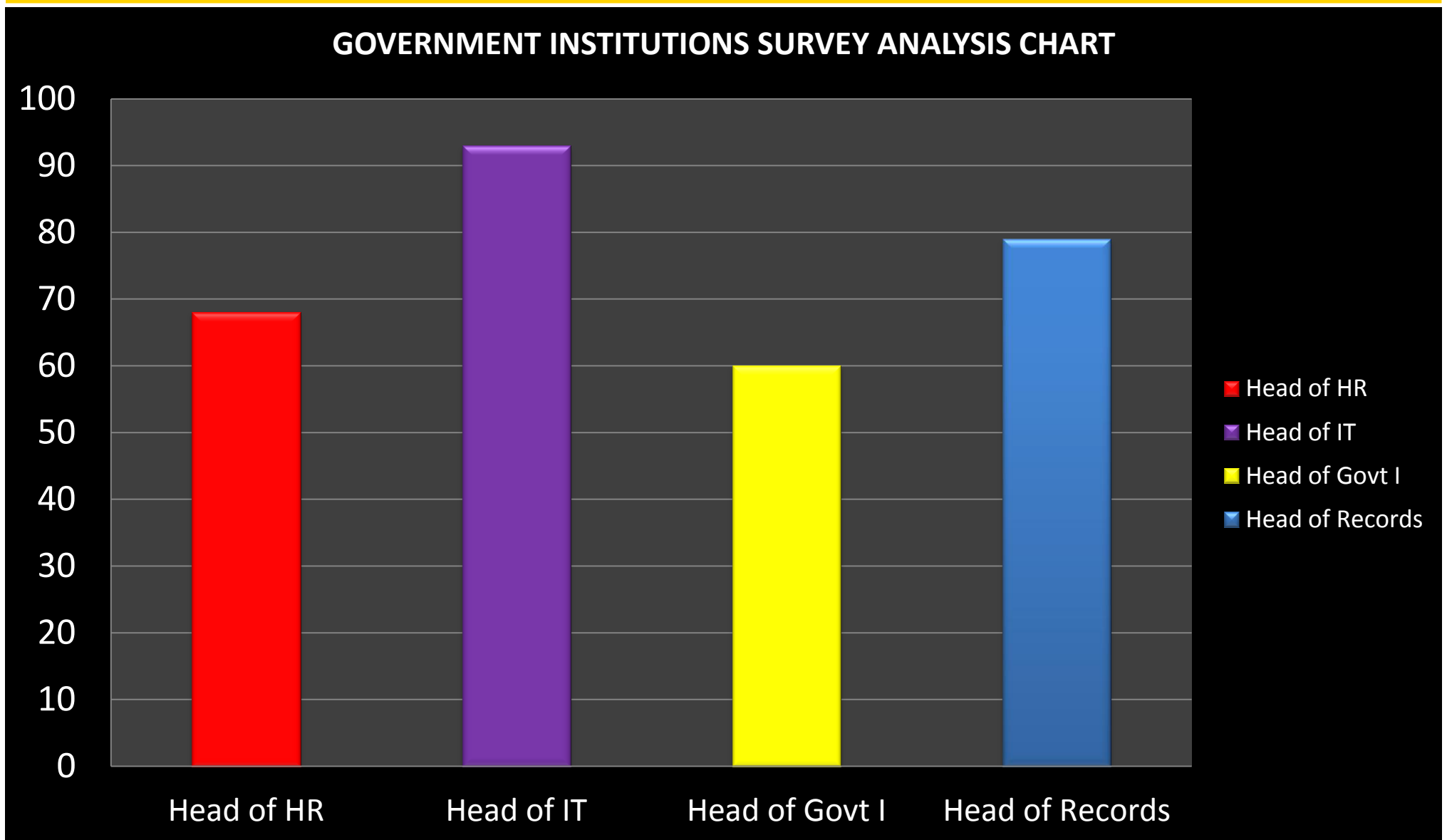


# Business and Citizens Survey Statistics

## District Survey - Business and Citizens



# Government Institutions Survey Analysis



# Online Completion Statistics

Targeted	Completed Online	% completion
<b>463</b> Questionnaires 1. Head of IT - 115 2. Head of HR - 115 3. Head of Records - 115 4. Head of Government Institution - 115 5. NITAU - 1 6. UCC - 1 7. UBOS - 1	7 respondents completed the online survey	2 %
<b>115</b> Government Institutions	4 GIs completed the online survey	3 %
<b>4</b> Survey categories per institution namely; 1. Head of IT 2. Head of HR 3. Head of Records 4. Head of Government Institution	1 GI completed all four categories of the survey online  <b>The Inspectorate of Government (IGG)</b>	1 %
<b>Overall Online Completion Rate</b>	<b>7 respondents of 1,582</b>	<b>0.4%</b>



# Paper based completion Statistics

Targeted	Completed Paper-based per Respondent category	Overall % completion
<p><b>1582</b> Questionnaires</p> <ol style="list-style-type: none"> <li>1. Head of IT - 115</li> <li>2. Head of HR - 115</li> <li>3. Head of Records - 115</li> <li>4. Head of Government Institution - 115</li> <li>5. Businesses and citizens - 1119</li> <li>6. UCC - 1</li> <li>7. UBOS - 1</li> <li>8. NITAU - 1</li> </ol>	<p>1419 Completed</p> <ul style="list-style-type: none"> <li>✓ 293 GI Respondents</li> <li>✓ 1,119 B&amp;C Respondents</li> <li>✓ 1UCC Respondent</li> <li>✓ 1 UBOS Respondent</li> <li>✓ 1 NITA-U Respondent</li> </ul>	<p><b>89.4%</b></p>



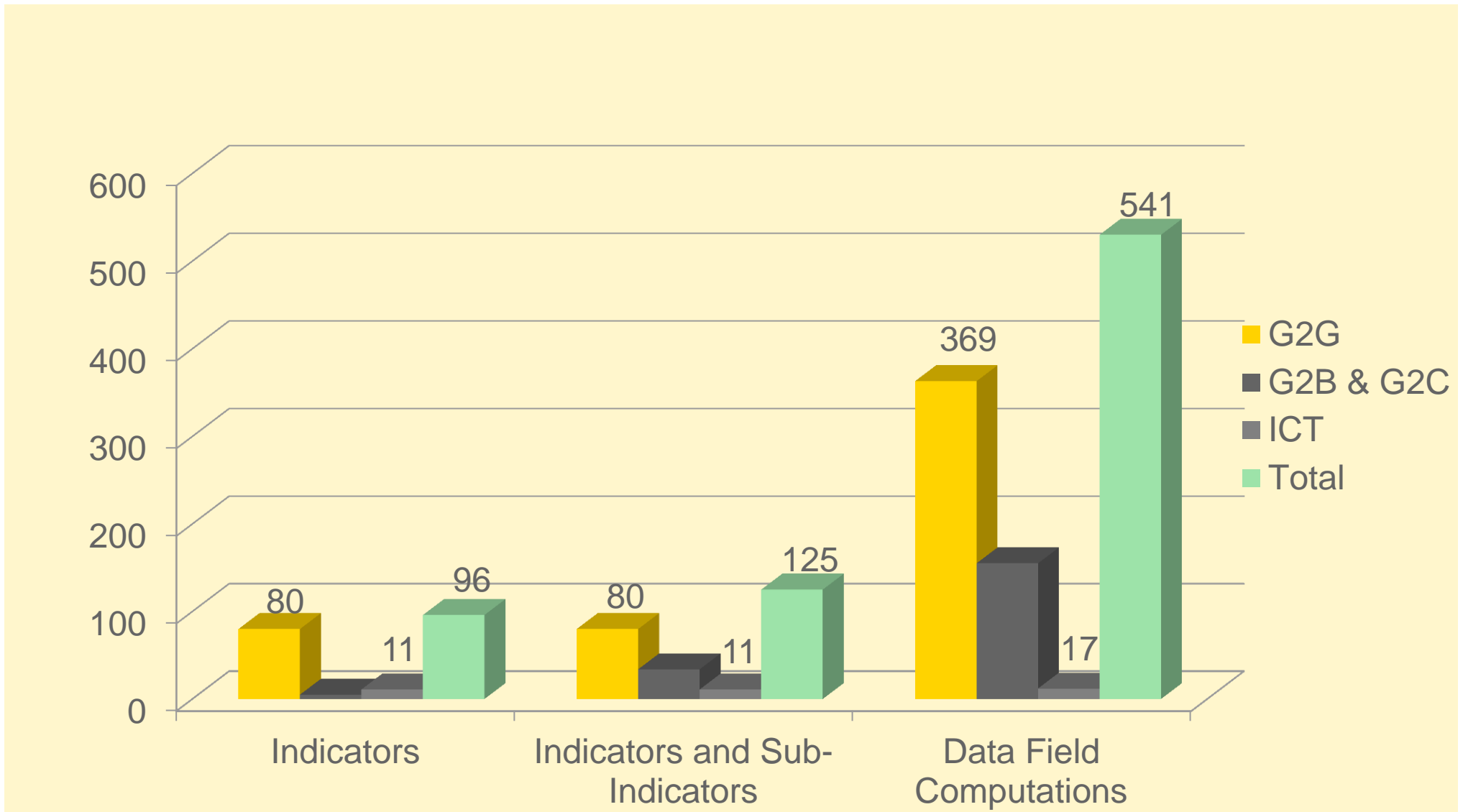
## Survey data results

# Uganda E-Government Survey 2012

## Statistics of Government Institutions' Respondents



# E-Government Survey 2012 – Indicators Chart

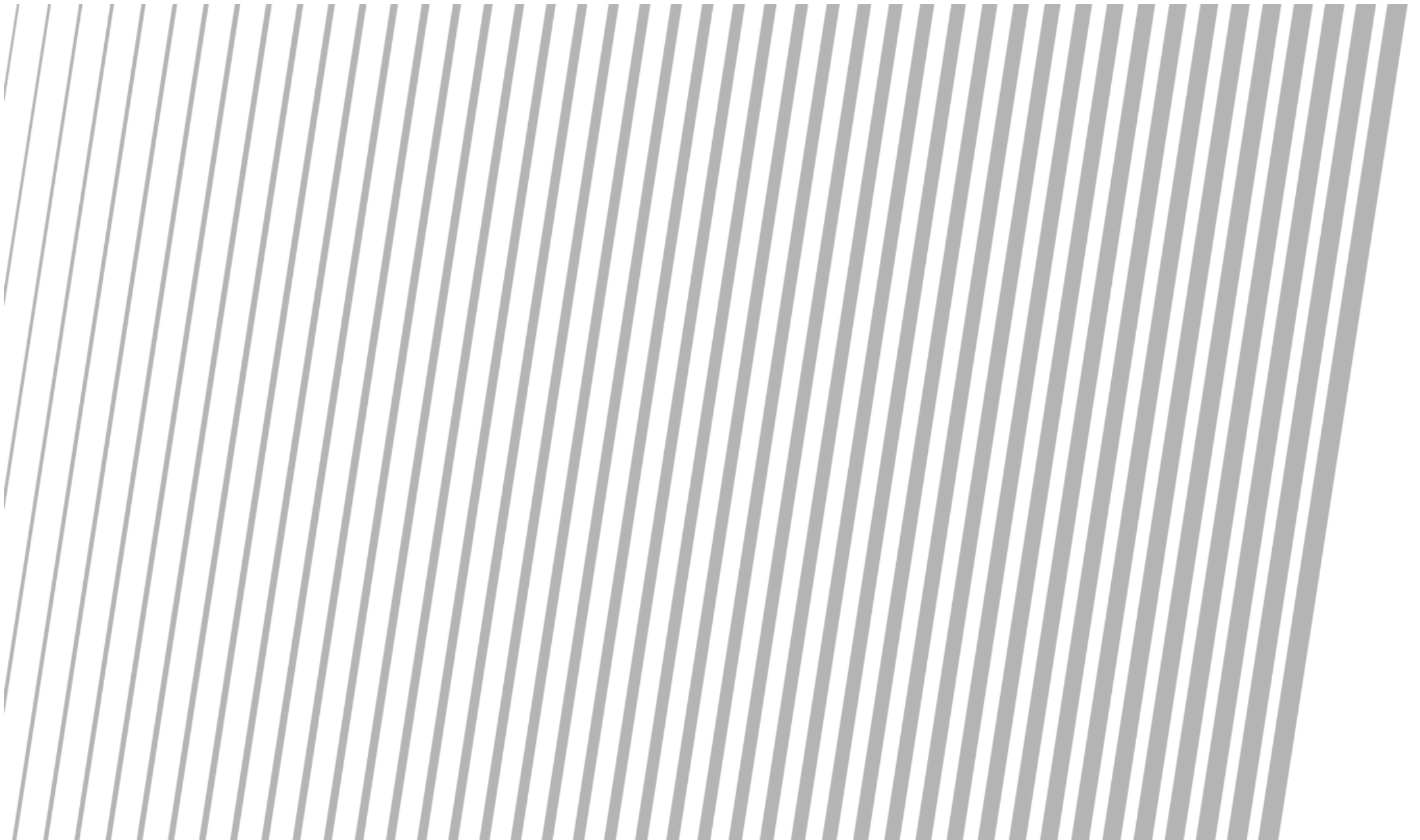




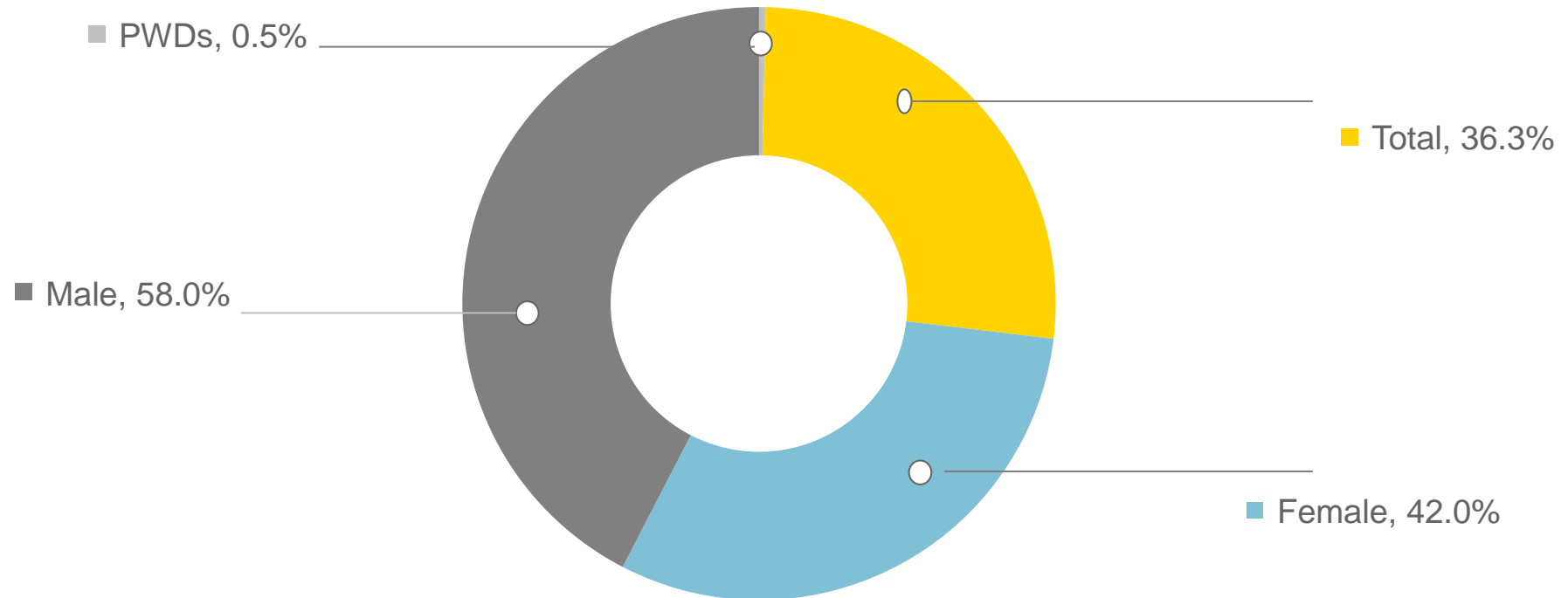
## EXCEPTIONS BASED ON THE STATISTICS THAT CHANGED Government to Government (G2G) Indicators

# ICT Equipment and Staff Access to Equipment

Uganda E-Government Survey 2012

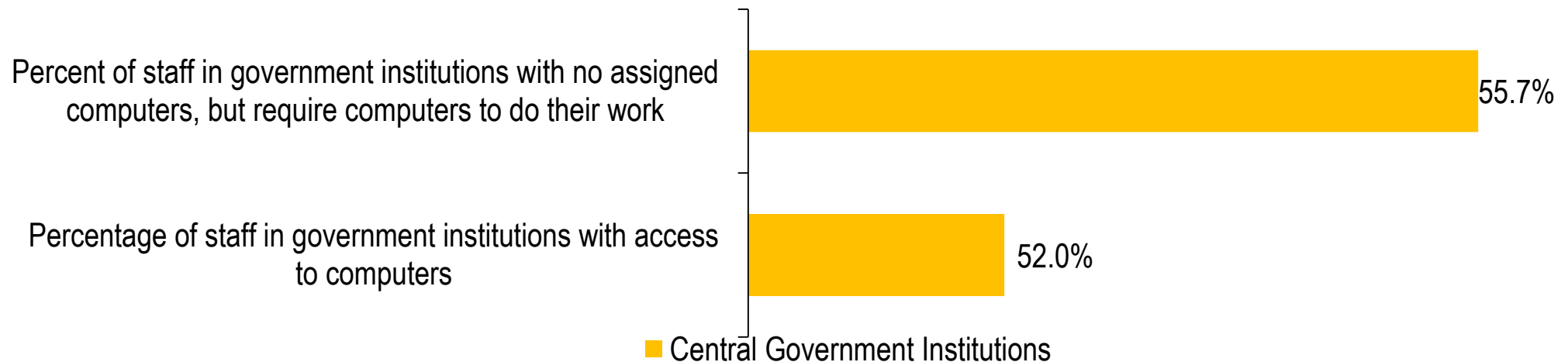


# Percent of staff in government institutions with a computer, disaggregated by gender, age and PWD



- ▶ 36 staff out of every 100 staff in a central government institution has a computer assigned to them; which is very low and not supportive of the government's agenda to enhance e-Government services
  - ▶ 6 out of every 10 staff who have computers are male. This compares favourably to the statistic provided by the human resource managers that shows that 66% of all government employees are male.
- ▶ 0.67% of all central government staff are persons with disabilities.
  - ▶ Considering that 0.5% of staff with assigned computers are PWDs, there is a close correlation between staff distribution by gender and PWD and computer distribution by gender and PWD

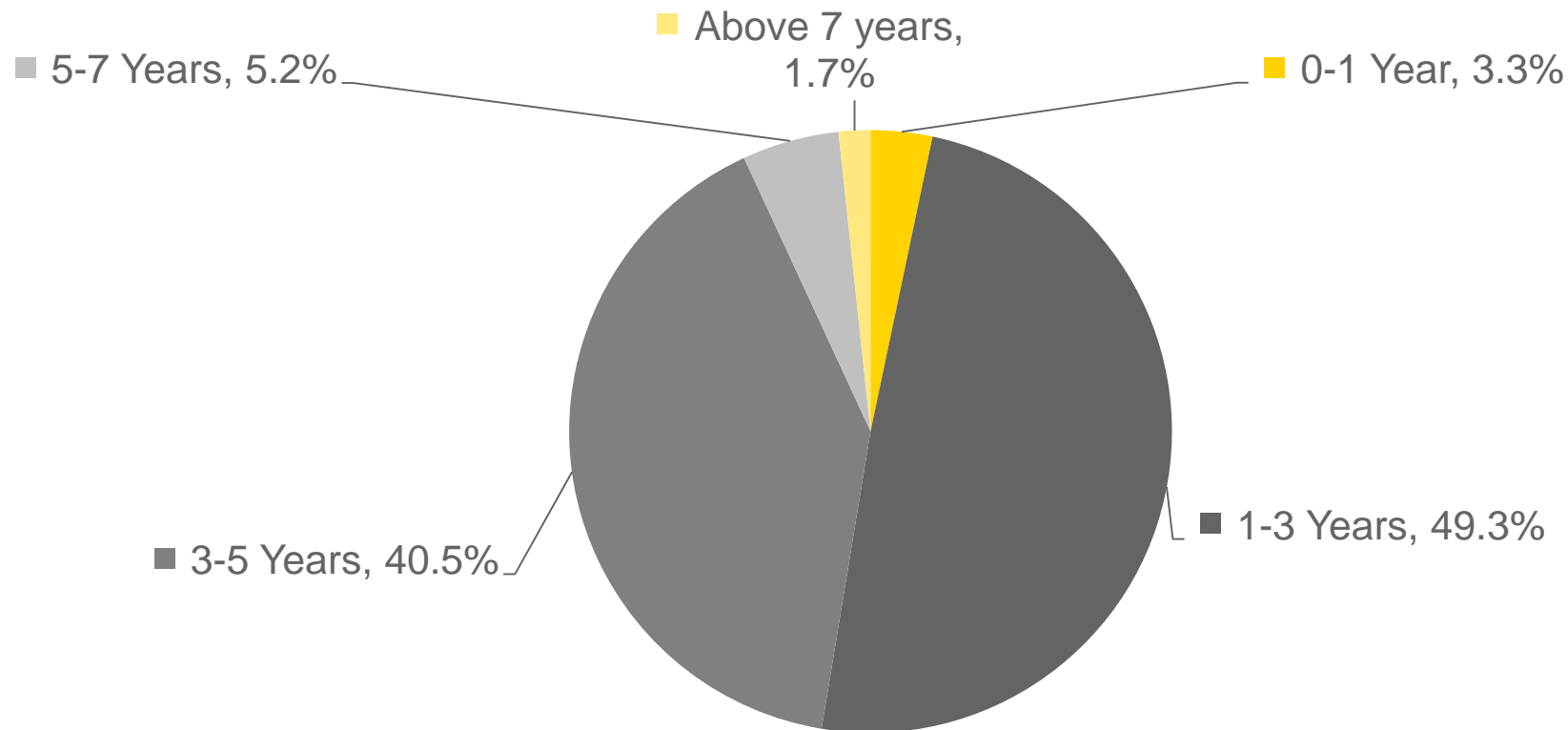
# Staff access to computers in Central Government



- ▶ 56% of staff in central government institutions require computers to do their work, but do not have any assigned to them.
  - ▶ On average, every central government institution would need to **double the number of their computers** to ensure effective e-Government service delivery
- ▶ 52% of central government staff without assigned computers have access to computers.
  - ▶ This percentage needs to be significantly increased. Introduction of **shared computer lab facilities** would help enhance e-Government readiness
  - ▶ *Access means that they may not be assigned a computer, but are able to use a shared computer or a computer specifically assigned to someone else to perform work related tasks on an as-need basis*

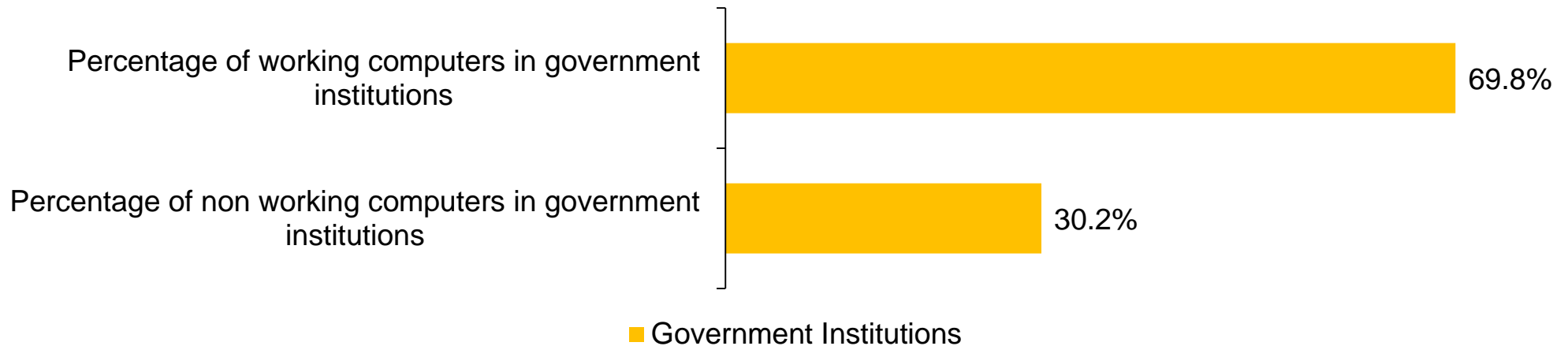


# Average age of computers in central government institutions



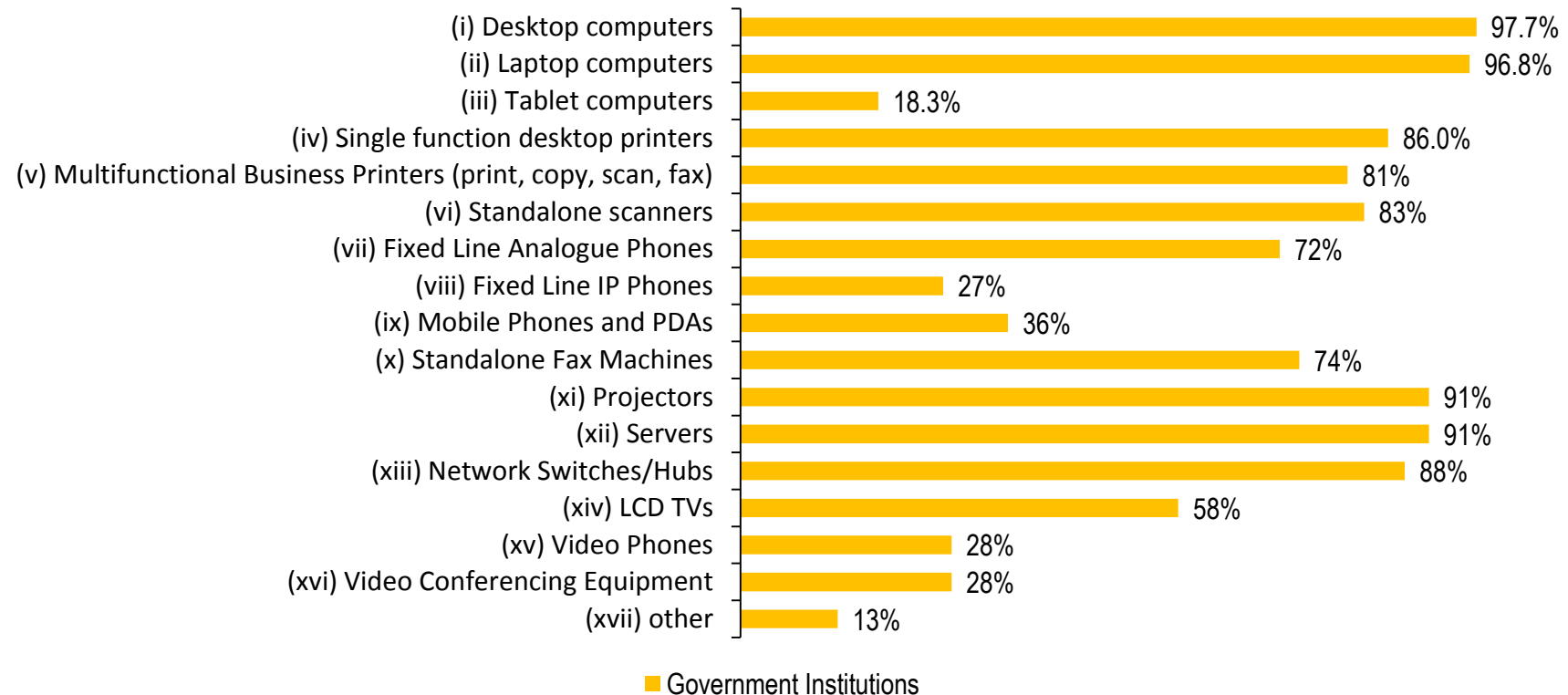
- ▶ 53% of computers in government institutions are between 0 and 3 years, with the average last major purchase of computers by the majority of government institutions having been made in 2010.
  - ▶ This reflects that the majority of the current computers in central government should have the **minimum technical specifications** for implementing various e-Government initiatives

# Percentage of working computers in central government institutions



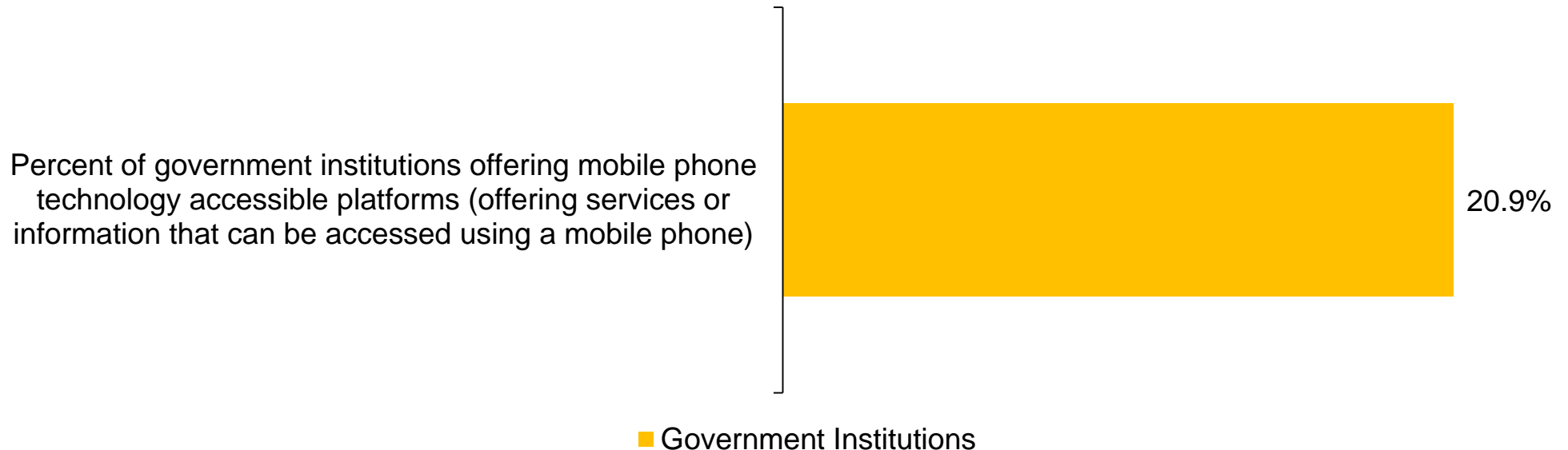
- ▶ Feedback from 93 central government institutions indicates that of the total 21,907 computers within these institutions; only 70% are working; and only 56% of the 21,907 have been assigned to staff. Consequently, 14% of working computers have not been assigned.
- ▶ For the institutions that responded; the 3,038 computers that are working, and that have not been issued, need to be issued; while an additional 9,251 computers need to be purchased to meet current needs.
- ▶ There are 6,622 computers that cannot be used, because they are either old, damaged and/or due for disposal.
- ▶ The fact that 30% of computers in central government are not working correlates favourably with the fact that 47% of computers in central government institutions are above 3 years old.
- ▶ There is now a need to seriously think about how these computers are disposed of; and the required **e-waste policies** and procedures.

# Percentage of central government institutions with ICT equipment



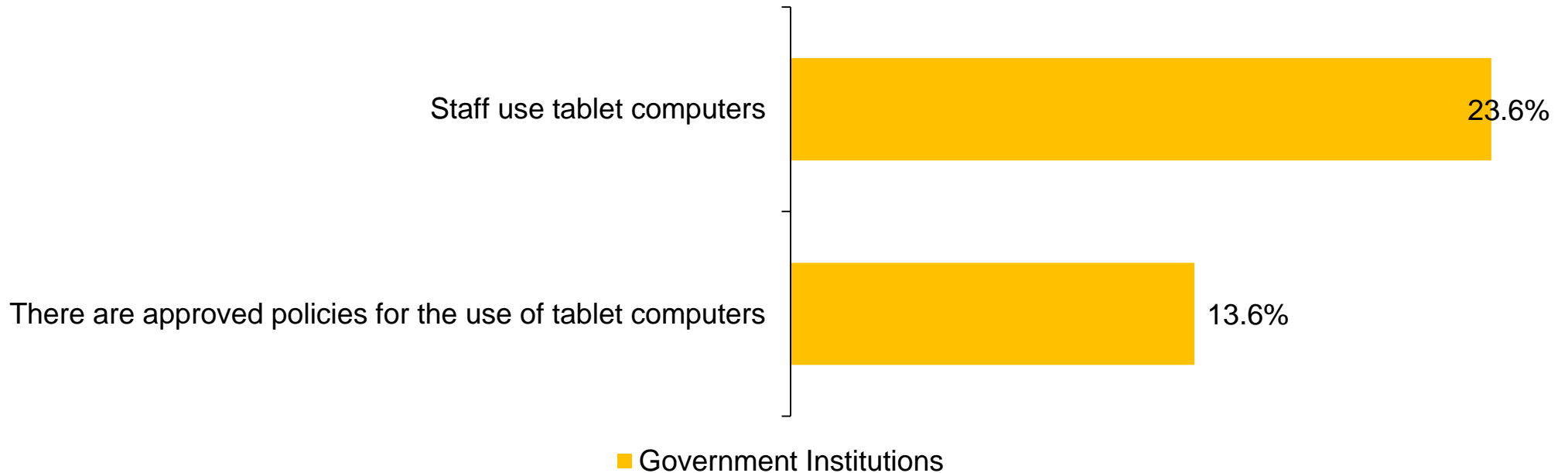
- ▶ 98% of the 93 central government institutions that responded have desktop computers totalling to 13,212; while 97% of them have laptops totalling to 2,391.
- ▶ 18% of central government institutions have tablet computers totalling to 205 across the 12 institutions that have them.

# Mobile phone technology accessible platforms



- ▶ 22% of central government institutions offer services or information to end users that can be accessed using a mobile phone.
- ▶ Considering that the mobile phone penetration rate in the country is at 51% according to the Uganda Communications Commission, it is vital for more government institutions to **engage in developing e-government initiatives that can be implemented through mobile phone technology accessible platforms.**

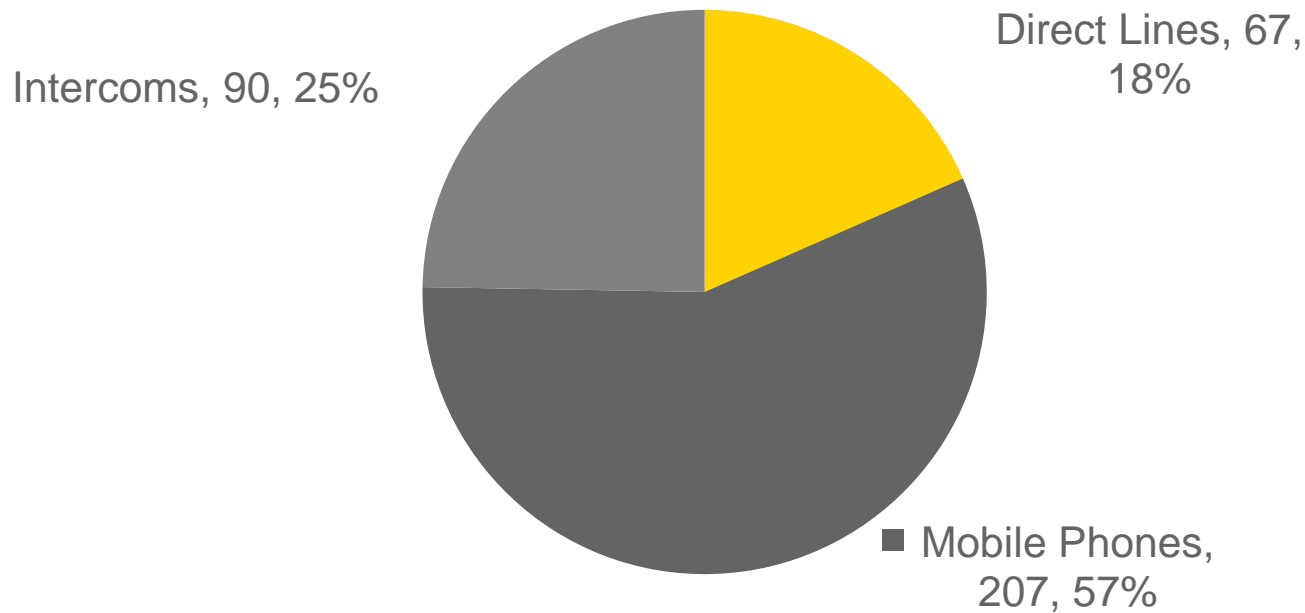
# Mobile computing trends



- ▶ 23.6% of respondents in central government currently permit the use of tablet computers for business use
- ▶ Only 13.6% of respondents have made policy adjustments to mitigate the risks related to mobile computing risks.
- ▶ Government needs to **develop standard policies to address information security concerns arising from the increasing shift towards the use of tablet computers**

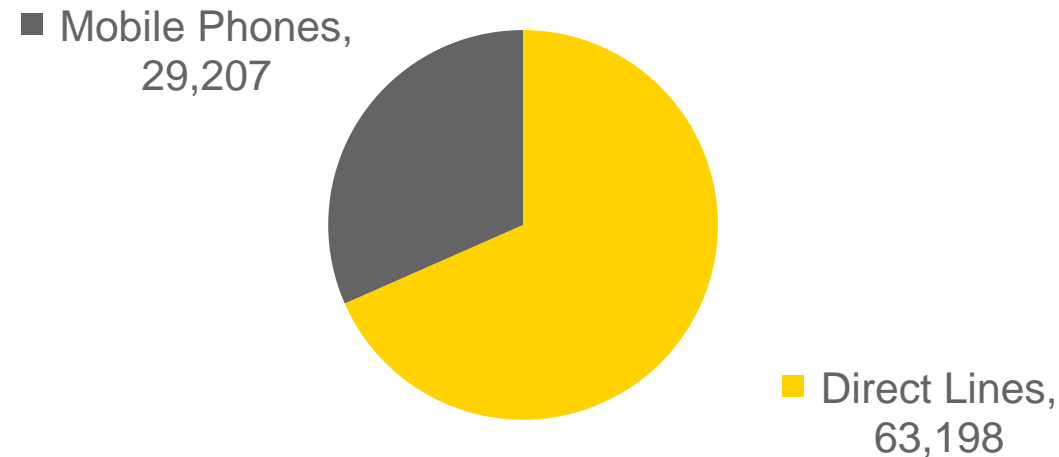
# Average number of telephone handsets in central government institutions

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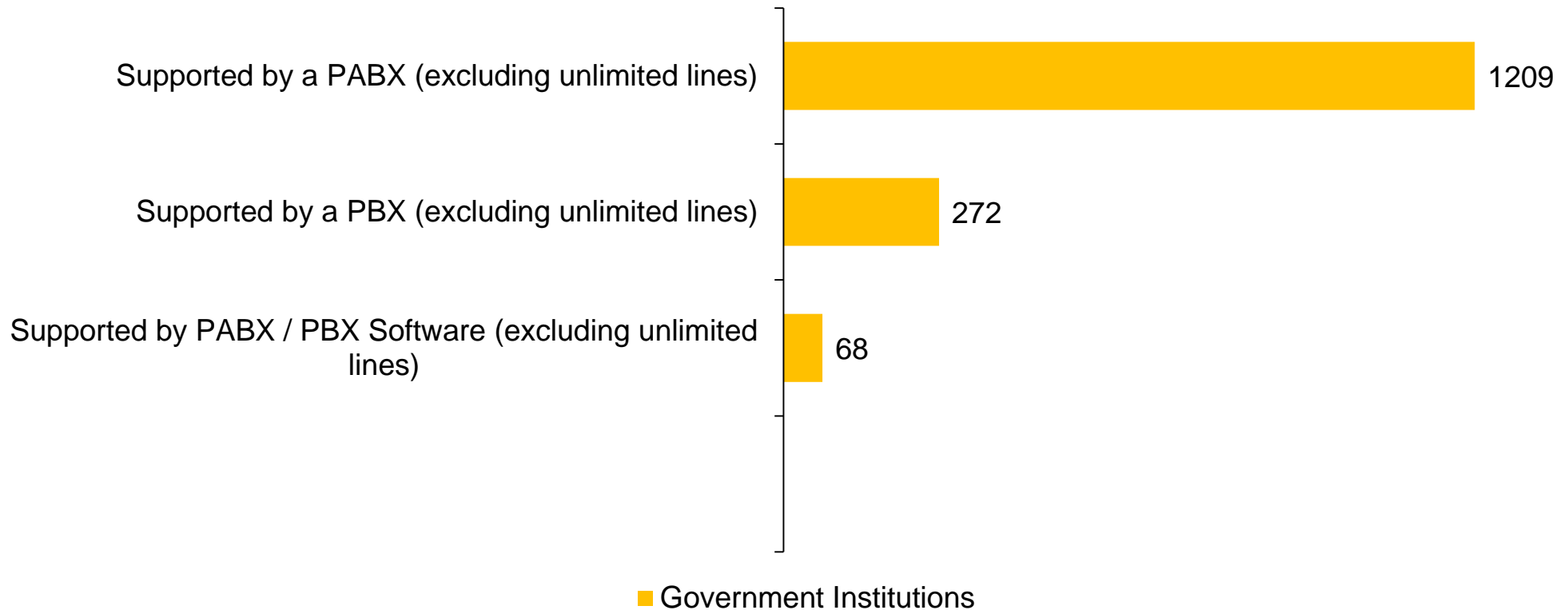
- ▶ On average, across the 93 respondent central government institutions there are:
  - ▶ 67 direct telephone lines per institution
  - ▶ 207 mobile phone lines supported per institution
  - ▶ 90 intercoms per institution
  
- ▶ The large number of direct telephone lines per institution should be reduced with increased adoption of IP telephony to save on the cost of supporting the direct lines.

# Average monthly telephone usage costs per handset in central government institutions (UGX)



- ▶ On average, across the 93 respondent central government institutions the average monthly usage cost per handset is:
  - ▶ UGX 63,198 per direct telephone line
  - ▶ UGX 29,207 per mobile phone
- ▶ With the average number of direct phone lines being 67; the total monthly direct line cost per institution is UGX 4.25 million; with the annual cost per institution being UGX 51 million.
- ▶ The adoption of a centrally managed phone system using IP phones for the entire Government of Uganda would significantly reduce the telephony cost for the government, **with inter-institutional phone calls being made using voice over IP across the National Backbone Network**, instead of via the costly commercial telecom companies. This would minimize the telephony budget and reduce on the monthly cash outflows from government institutions, which can be re-purposed for service delivery initiatives.

# Average number of phone lines supported by business telephone systems in government institutions

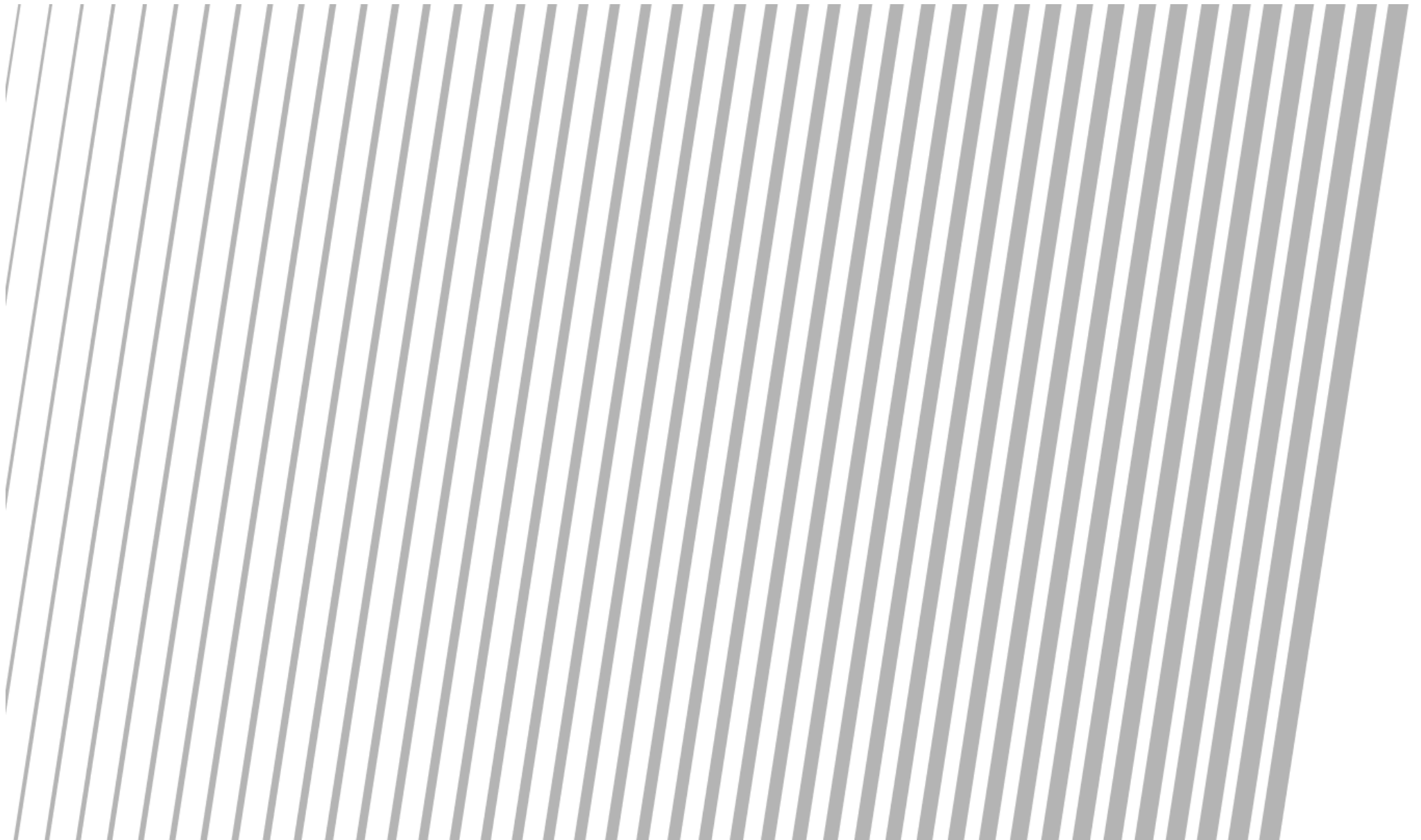


- ▶ 80.7% of central government institutions have business telephone systems with VOIP capability
- ▶ 25.3% of central government institutions perform ICT equipment maintenance in-house

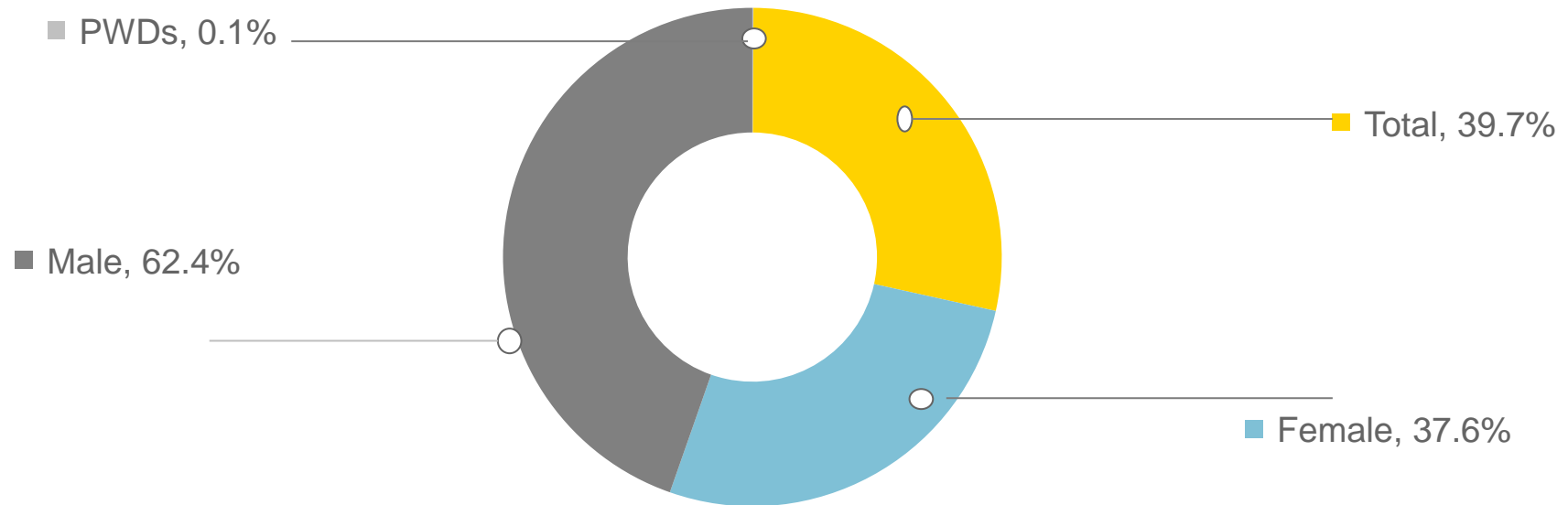


# Access to Internet

## Uganda E-Government Survey 2012



# Percent of staff in Central Government with Internet access at the office



- ▶ On average 40% of staff in central government institutions have access to the internet at the office.
- ▶ With 36.3% of staff in central government institutions having an assigned computer, this statistic suggests that all staff in government institutions with assigned computers have access to the internet at the office; while the additional percentage with access to the internet represent those with access to computers.
- ▶ 40% of staff having access to the internet at the office is very low if the ambition of the government is to deliver all major aspects of service delivery through e-Government initiatives. Consequently, just as the government needs to increase the assigned computers by 126% across central government institutions, the **number of staff with access to the internet needs to increase by 250%**.

## Our perspective

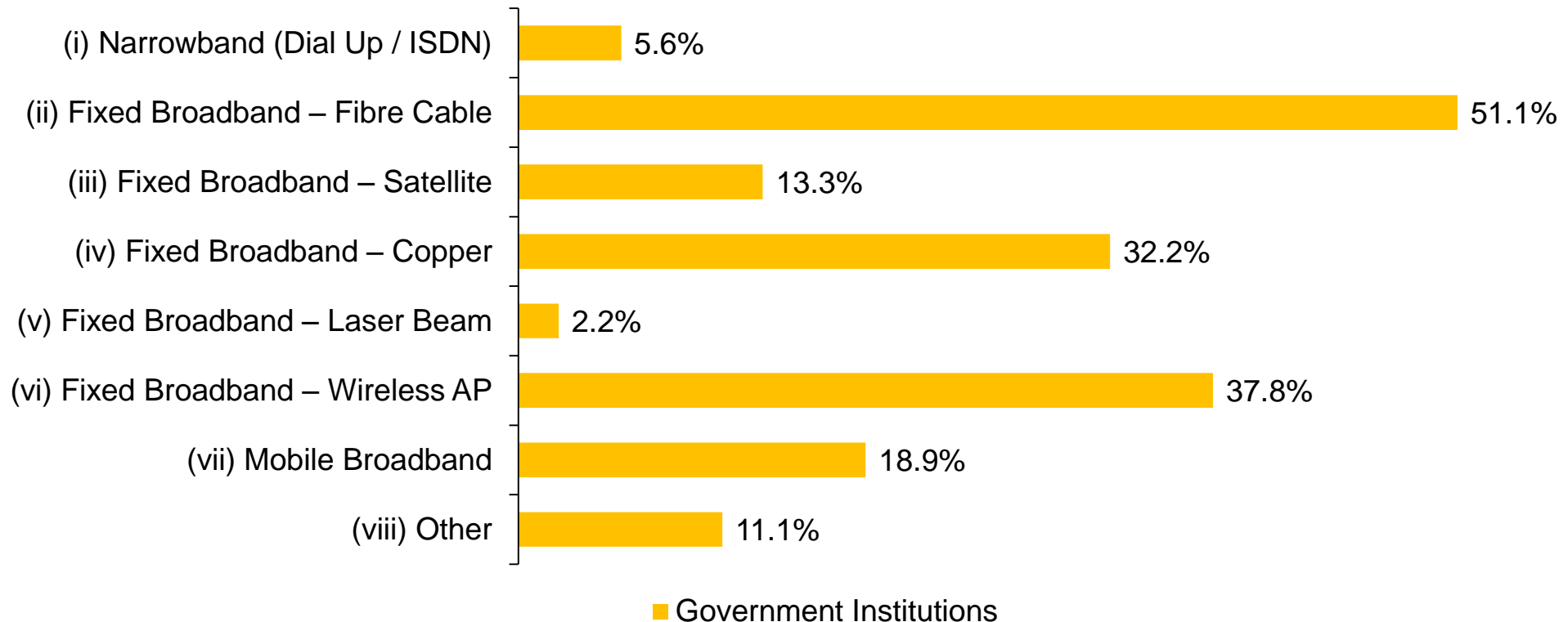
### Gender Distribution

- ▶ 62% of staff in government institutions with access to the internet at the office are male, while 38% are female
- ▶ This correlates with the fact that 58% of staff who have assigned computers are male and 66% of all government staff reported on in this survey are male.

### Institutional Websites

- ▶ 97% of the 93 central government institutions who responded have a website, enabling the provision of information and services to businesses and citizens with access to the internet

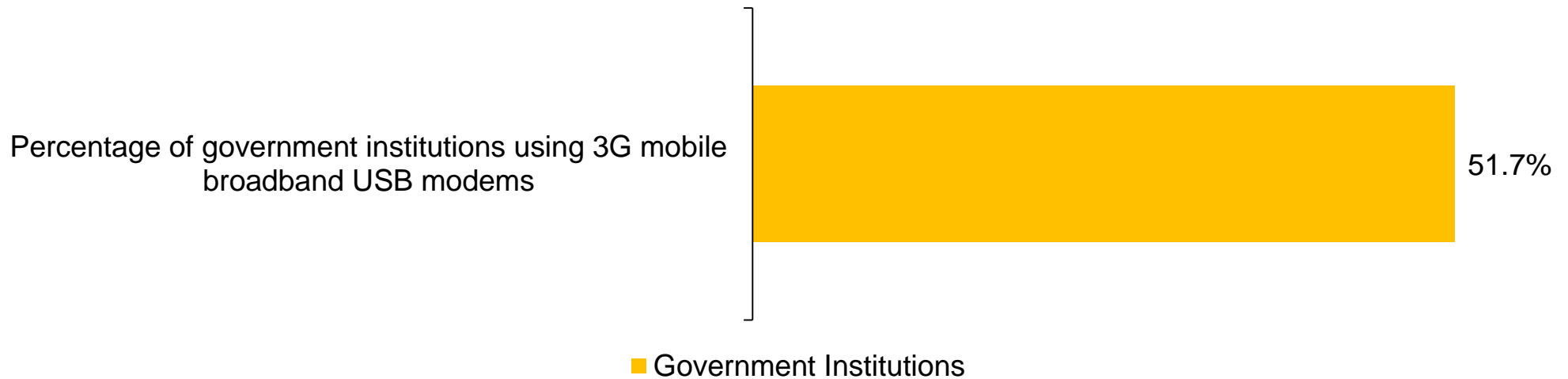
# Percent of government institutions with access to the Internet by type of access



- ▶ Several government institutions have more than one way of connecting to the internet; however, the majority of institutions; 51% are connected via Fixed Broadband - Fibre Optic Cable.
- ▶ 38% of institutions are connected via Fixed Broadband - Wireless AP, while 33% are connected via Fixed Broadband - Copper Cable.

# Average bandwidth usage (subscribed) by a central government institution every month

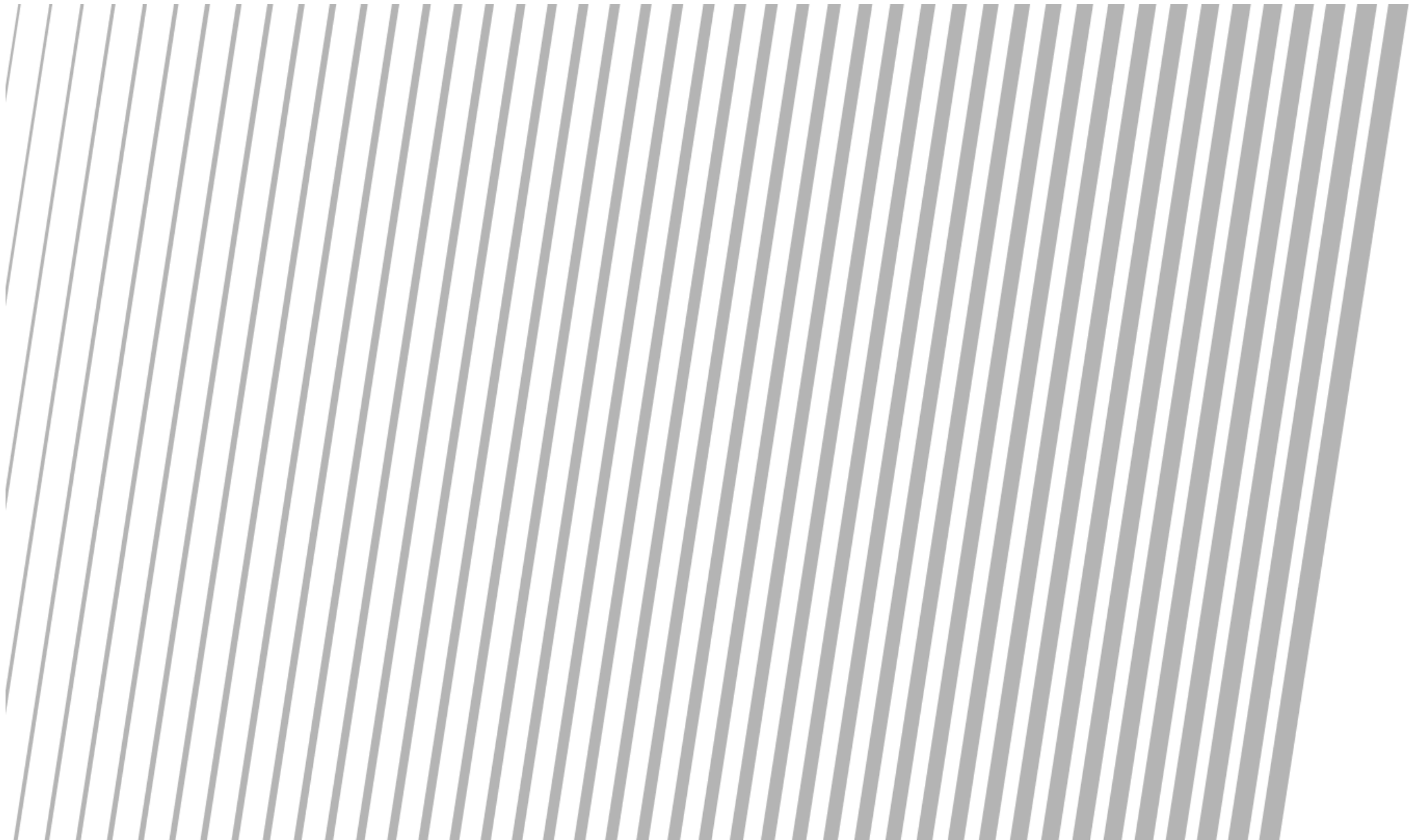
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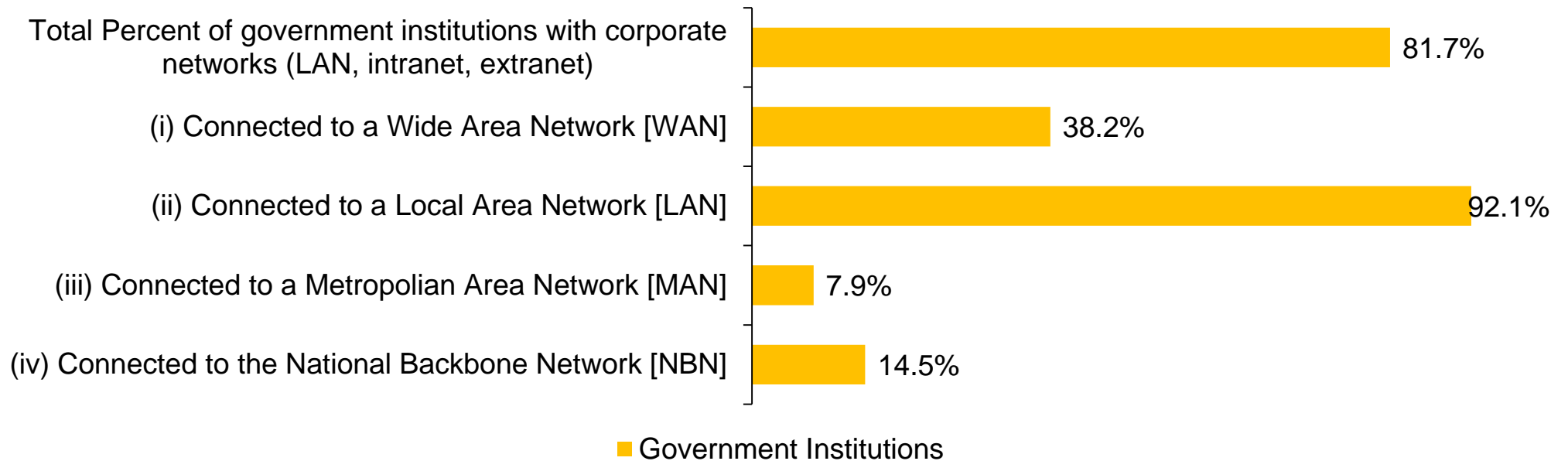
- ▶ Average bandwidth capacity paid for per month is 3,132 Kbps
- ▶ Average bandwidth cost per month per institution is UGX 4,340,348
- ▶ 52% of central government institutions use 3G mobile broadband USB modems; with the average number of USB modems used per government institutions being 11

# Information and Communications Infrastructure

## Uganda E-Government Survey 2012

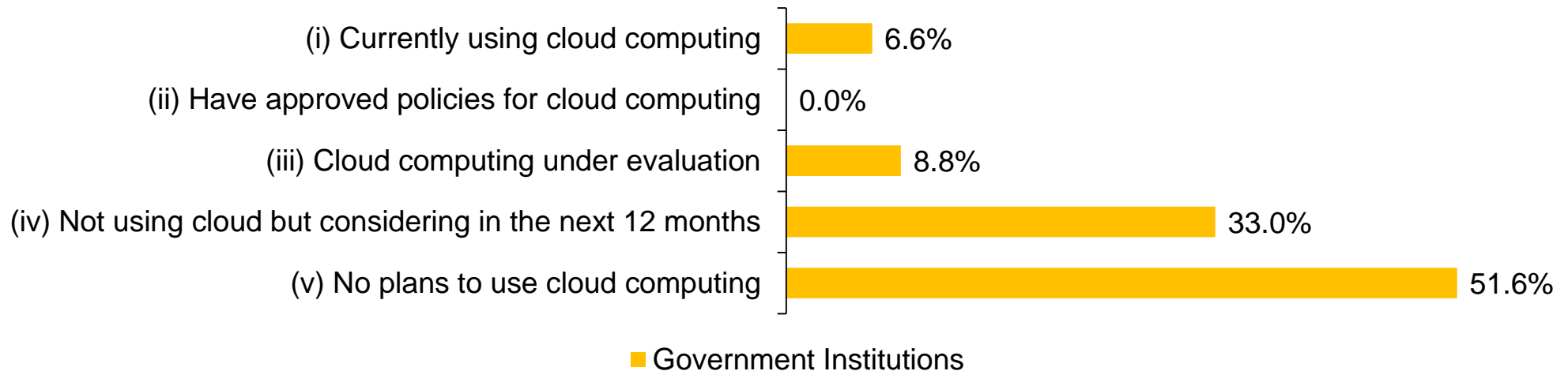


# Central Government institutions with corporate networks (LAN, intranet, extranet)



- ▶ 82% of central government institutions have corporate networks; of which,
  - ▶ 94% have a local area network (LAN)
  - ▶ 41% are connected to a wide area network (WAN).
- ▶ Of the 93 central government institutions that responded, only 11 or 14.5% are connected to the National Backbone Network (NBN).
- ▶ In order for the government to achieve the envisioned benefits from setting up the National Backbone Infrastructure, **100% of government institutions should be connected to the NBN.**

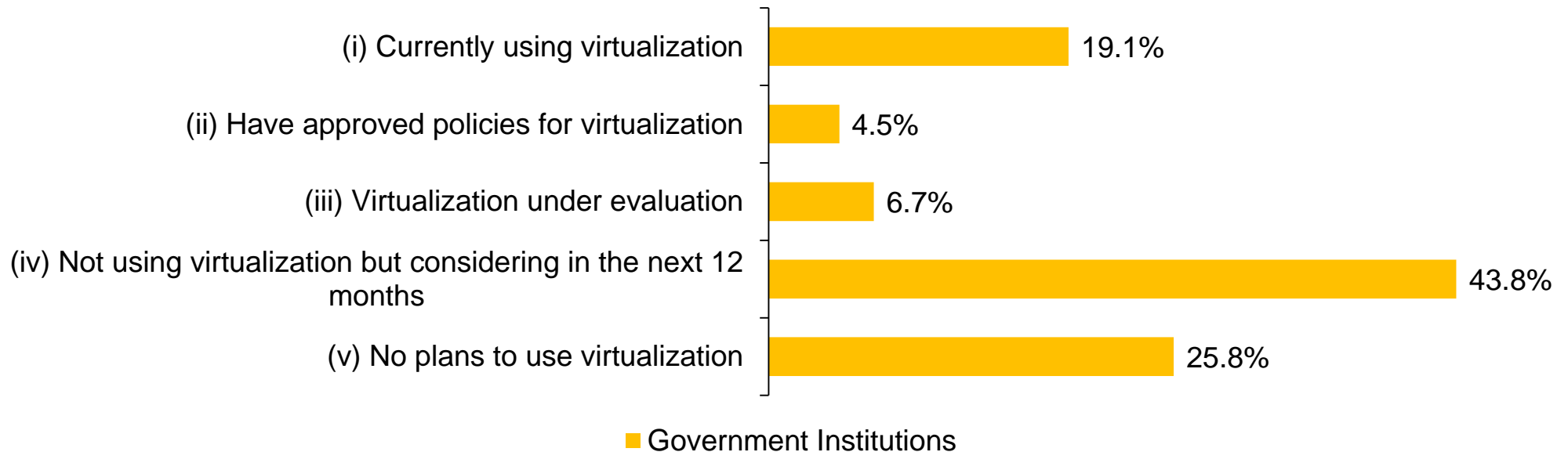
# Percentage of central government institutions that are currently using cloud computing based services



- ▶ 52% of respondents are not using cloud computing-based services and have no plans to do so in the next 12 months
- ▶ Of the 7% of respondents using cloud computing, none have approved policies for cloud computing
- ▶ Central Government institutions appear to be cautious in their adoption of cloud computing-based services due to the lack of clarity around security implications and measures.
- ▶ With the National Data Center now in place, it would be important for the government to **determine the possibility of developing cloud based shared services** for government institutions in order to enhance commonality in software used and to save hard drive space on individual computers which would enhance the performance of computers within government and enable a common environment for implementing e-Government initiatives.



# Percentage of central government institutions that are currently using virtualization



- ▶ 19% of respondents use virtualization, while 44% are considering using virtualization within the next 12 months.
- ▶ Consequently, potentially over 60% of central government institutions will be using virtualization by the end of 2013.
- ▶ With only 4.5% of respondents having approved policies for virtualization, it is important that government fast tracks the **development of standardized policies** for the use of virtualization to guide institutions in their foreseeable implementation efforts.

# Usage of shared IT services

- ▶ 77% have or use shared IT services

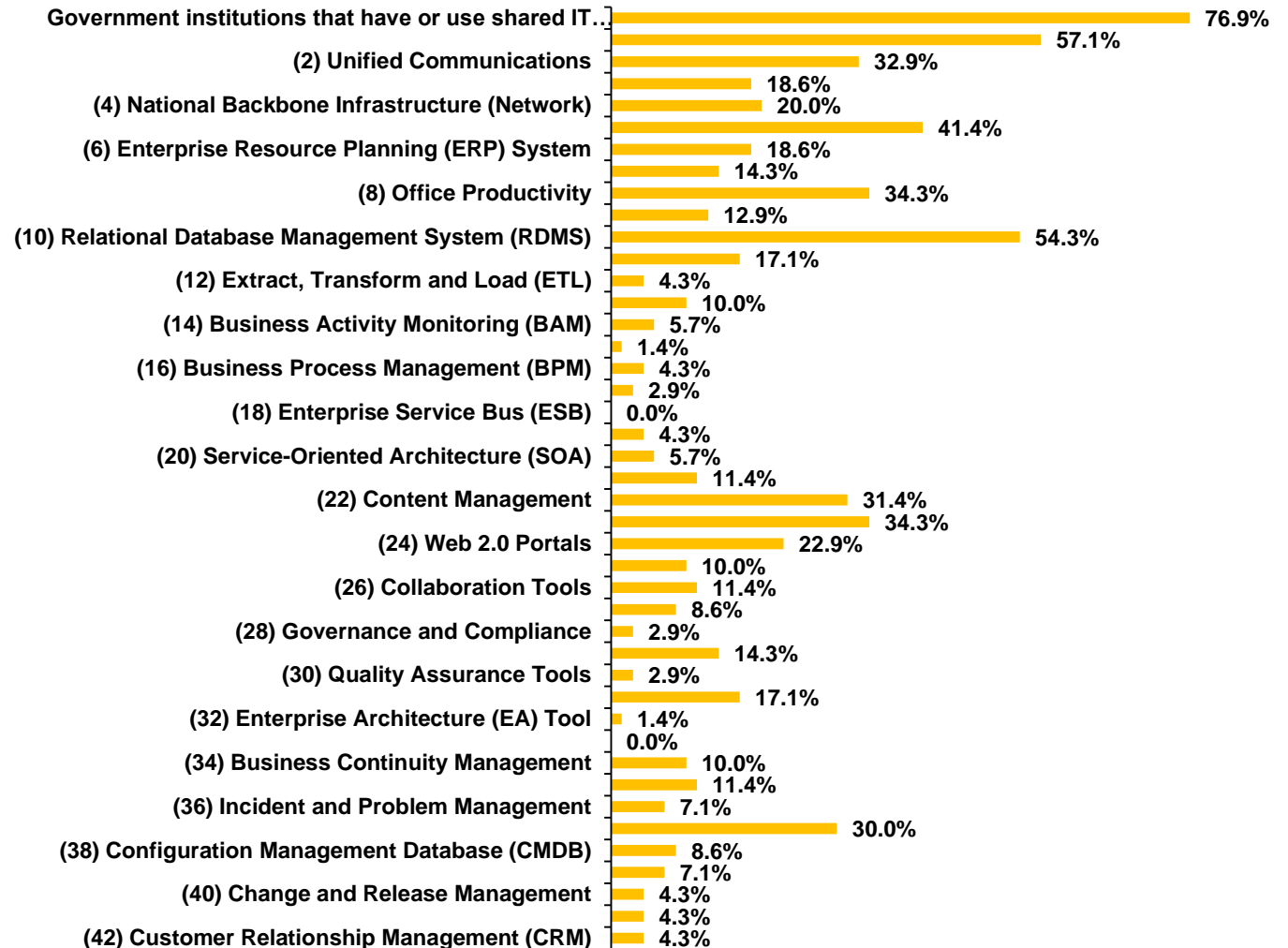
## Selected Results

- ▶ 57% - Intranet
- ▶ 54% - Relational database management systems
- ▶ 41% - Computing.
- ▶ 34 % - Office productivity
- ▶ 33% - Unified communications
- ▶ 31% - Content management systems
- ▶ 18% - Enterprise Resource Planning (ERP) systems

## Of Concern

- ▶ 20% - National Backbone
- ▶ 10% Business Continuity Management

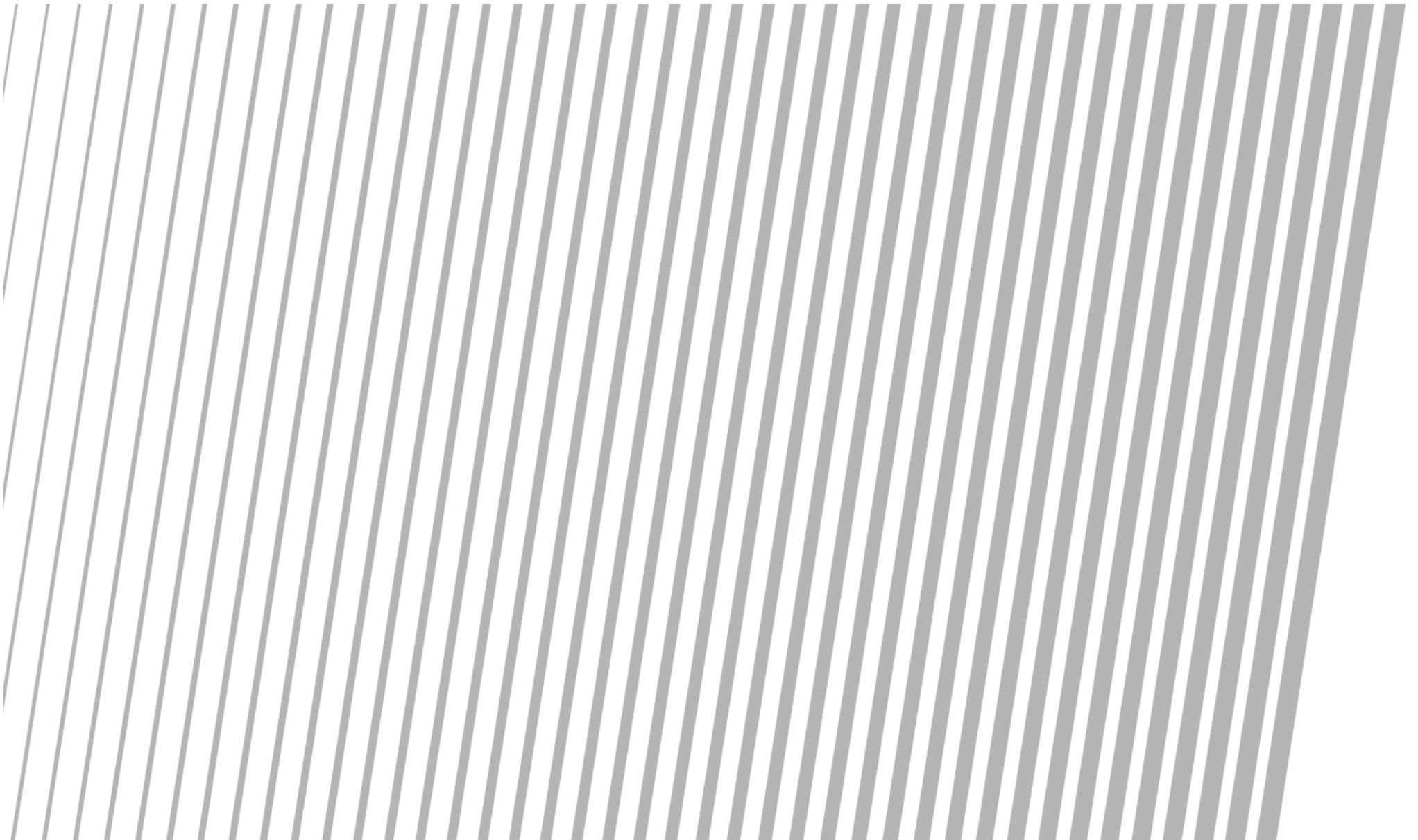
## Usage of shared IT services



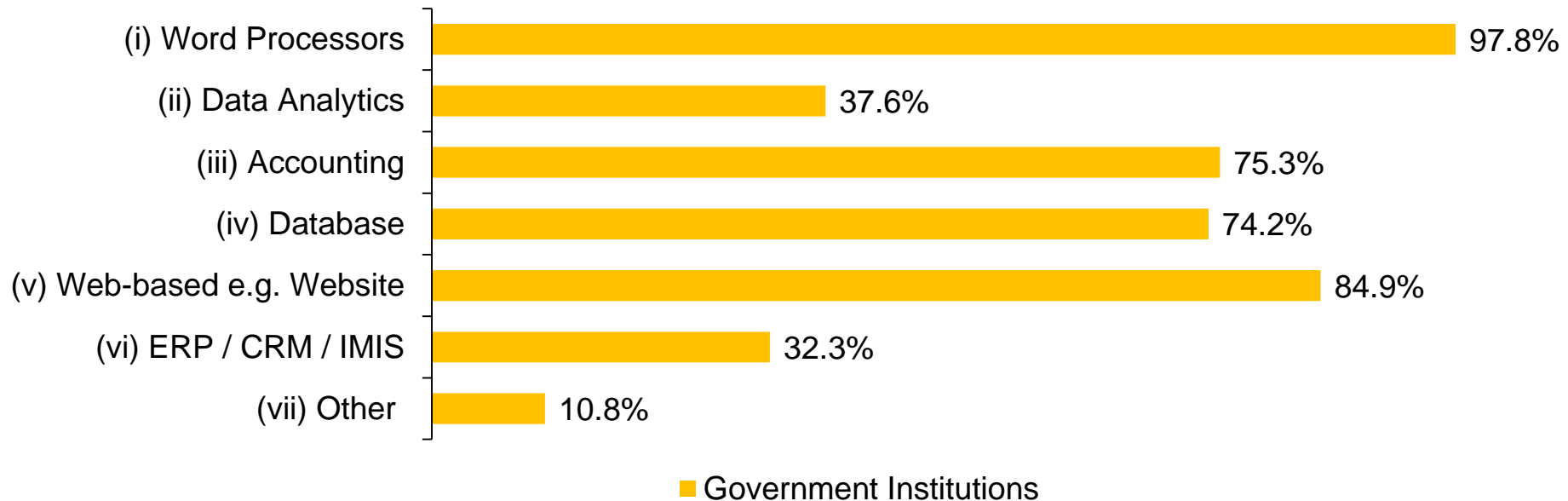
■ Government Institutions

# Software applications

## Uganda E-Government Survey 2012

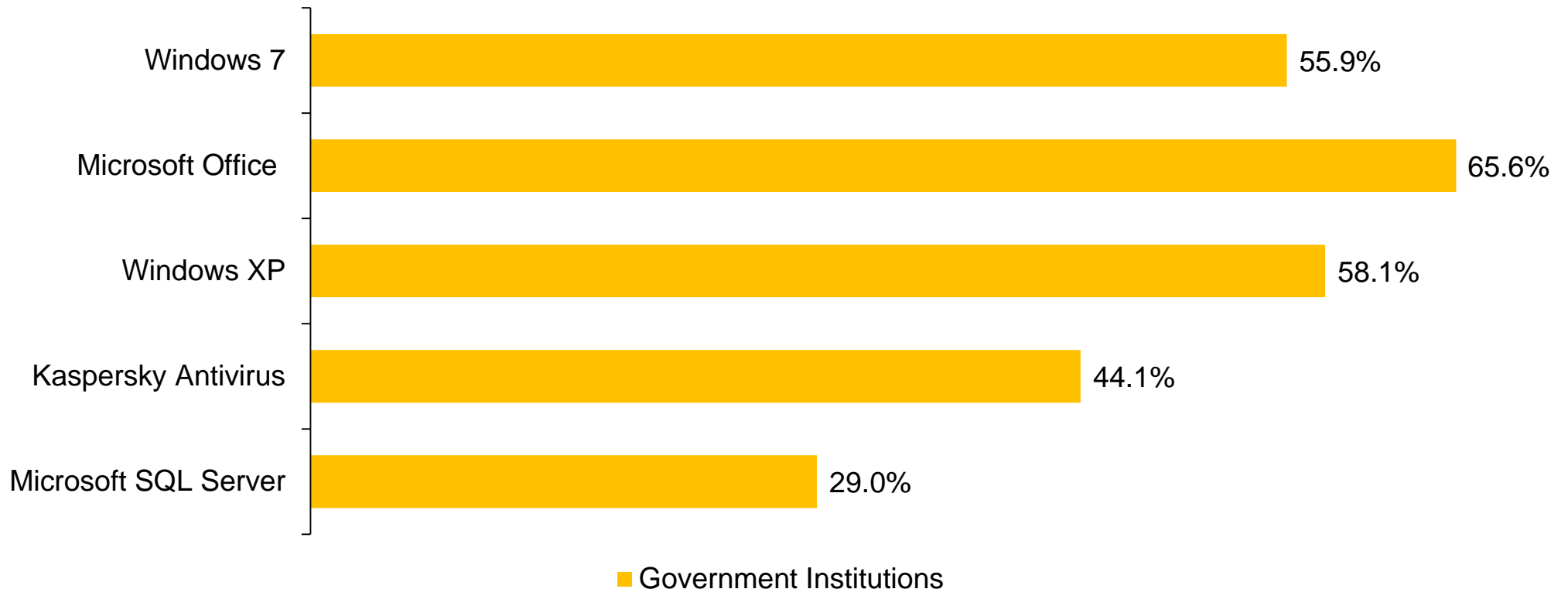


# Type of applications used in central government Institutions



- ▶ 98% of respondents have word processing applications, with 85% having web-based applications, and 75% having accounting and database applications.
- ▶ 30% of respondents have ERP / CRM / IMIS systems, reflecting a need for progression in this area to enhance the re-engineering of business processes that deliver services to businesses, citizens and other government institutions.

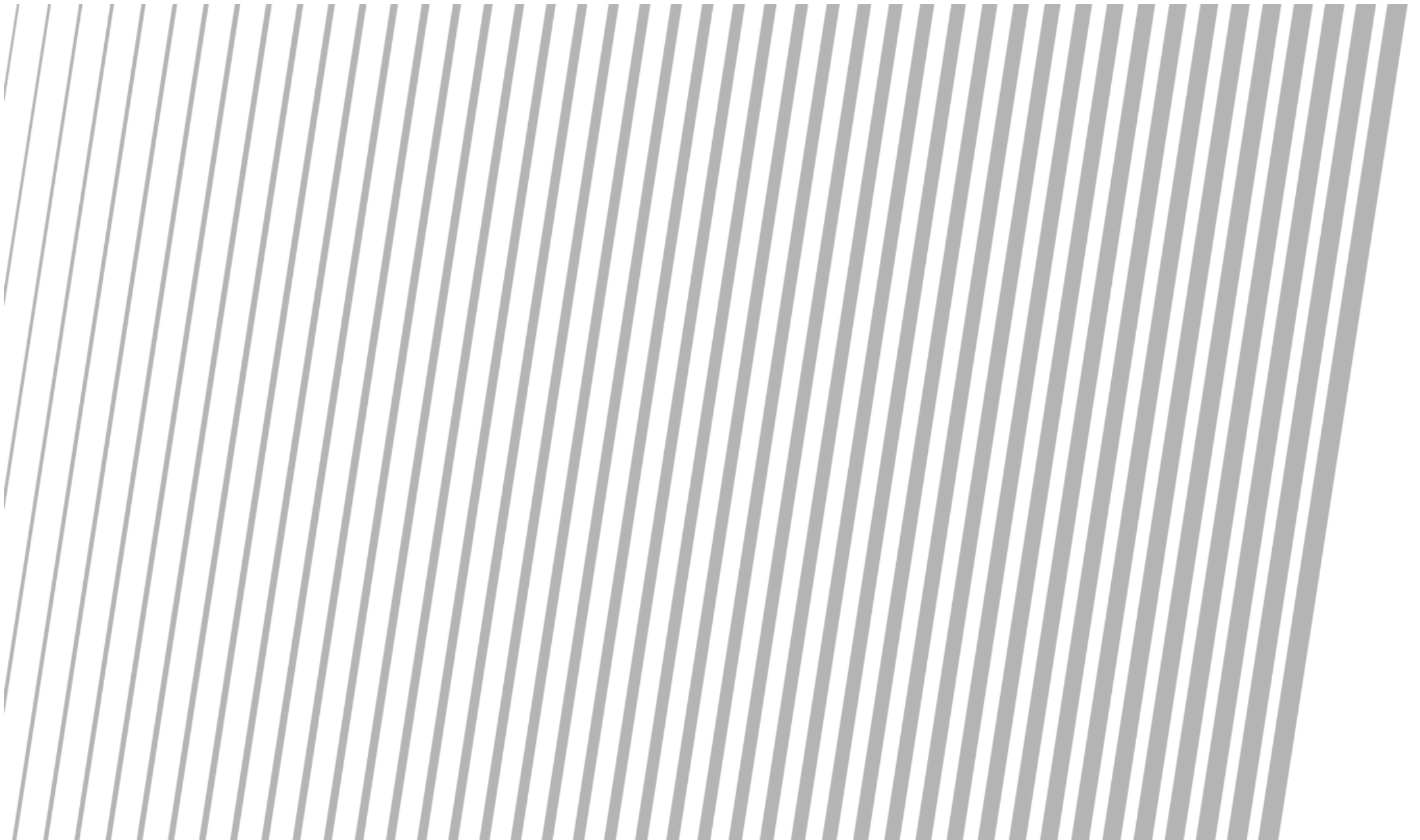
# Top 5 major applications used in government institutions



- ▶ Most respondents reported on using mostly Microsoft operating systems with Windows XP and Windows 7 being used by 58% and 56% respectively.
- ▶ Microsoft Office is used by 66% of respondents, while Kaspersky appears to be the antivirus software solution of choice with 44% reporting its usage.

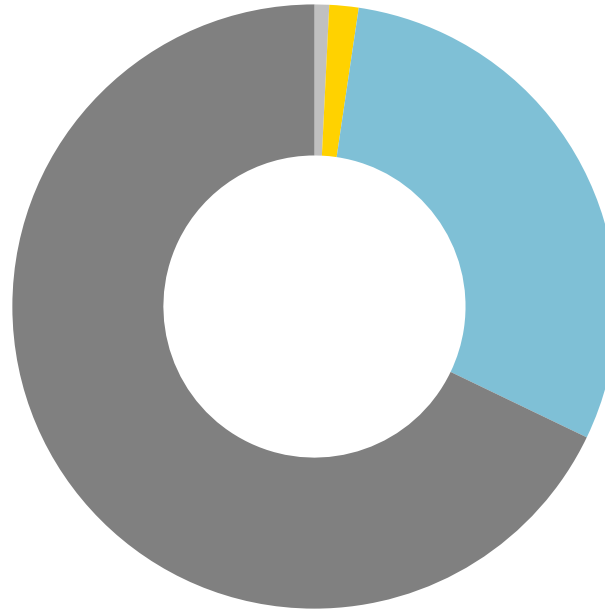
# ICT Human Resources

## Uganda E-Government Survey 2012



# ICT personnel in central government institutions

- PWDs, 0.8%
- Male, 69.5%
- Female, 30.5%
- Total, 1.6%



- ▶ 1.6% of staff in the respondent institutions are ICT personnel
- ▶ 69% of ICT personnel are male while 31% are female, which is not far off from the overall staff distribution percentages in government institutions of 66% being male while 34% are female.

# ICT staff in central government institutions trained in the use of ICT

- Total, 33.3%
- Male, 61.9%
- Female, 38.1%
- PWDs, 0.5%



- ▶ 33% of staff in central government institutions have been trained to use ICTs.
  - ▶ Once again, the same approximate 2/3 male to 1/3 female proportion is noted here with the gender proportion of trained staff being 62% males and 38% females



# ICT personnel in government institutions

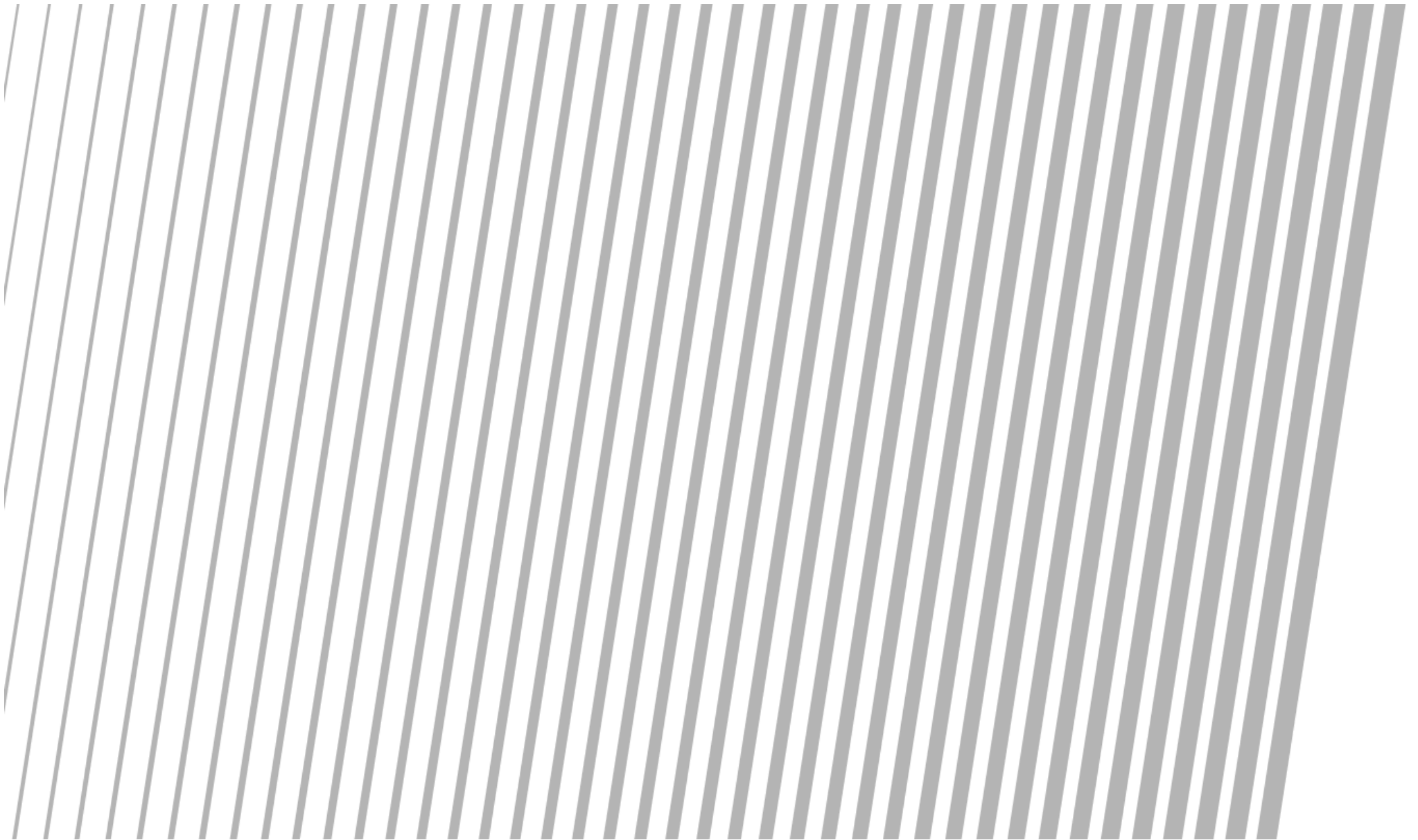
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## Our perspective

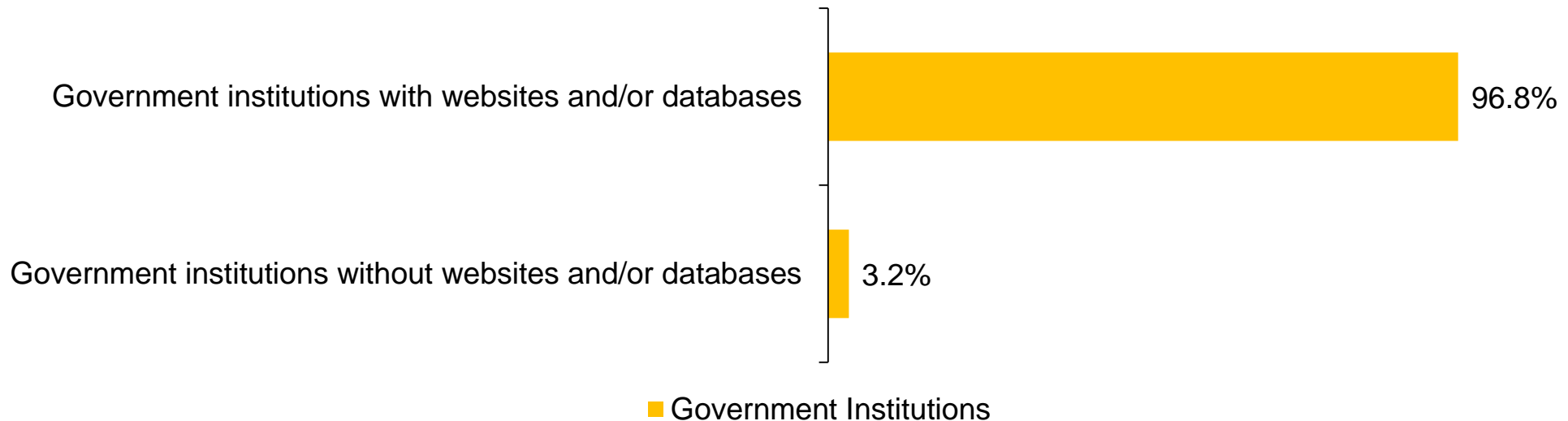
- ▶ From an e-Government promotion perspective, 33% is a low percentage and there is a need for government institutions to engage in training a higher percentage of their staff in the use of ICTs.
- ▶ This 33% statistics is however not a surprise, with 36% of government staff having assigned computers.
- ▶ To improve on the percentage of staff trained in the use of ICT, there is a need to first increase the percentage of staff in government institutions with assigned working computers.

# Service Delivery – Information, Communication and Infrastructure

## Uganda E-Government Survey 2012

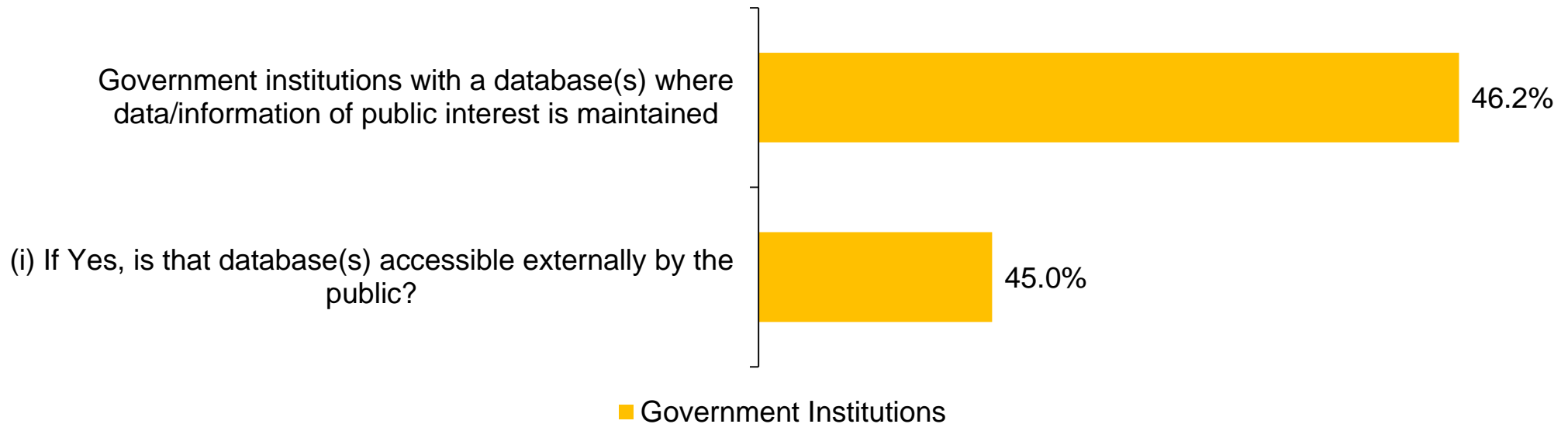


# Percent of central government institutions with websites and/or databases



- ▶ 97% of respondent government institutions have websites.
- ▶ Access to information regarding the mandate and services provided by each of these institutions is therefore readily available. This reflects that Uganda from an e-Government development perspective is at the **connected stage**, which is the first of the four “online service development” stages.
- ▶ This statistics shows a readiness for the **creation of a single government information portal** allowing for links to all government institutions to be hosted on the portal, so that businesses and citizens can access all government sites via one website.

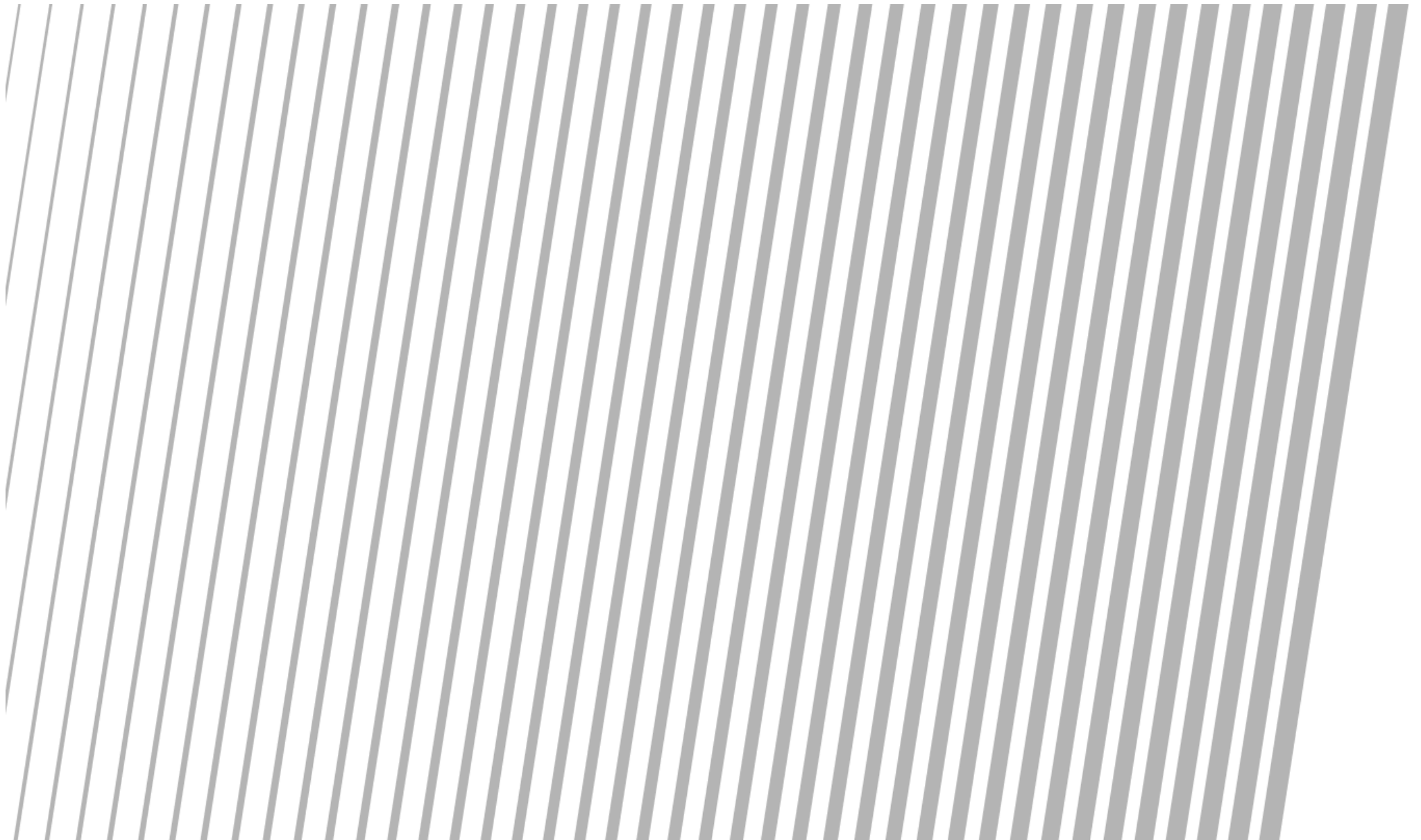
# Percent of central government institutions databases maintaining public information



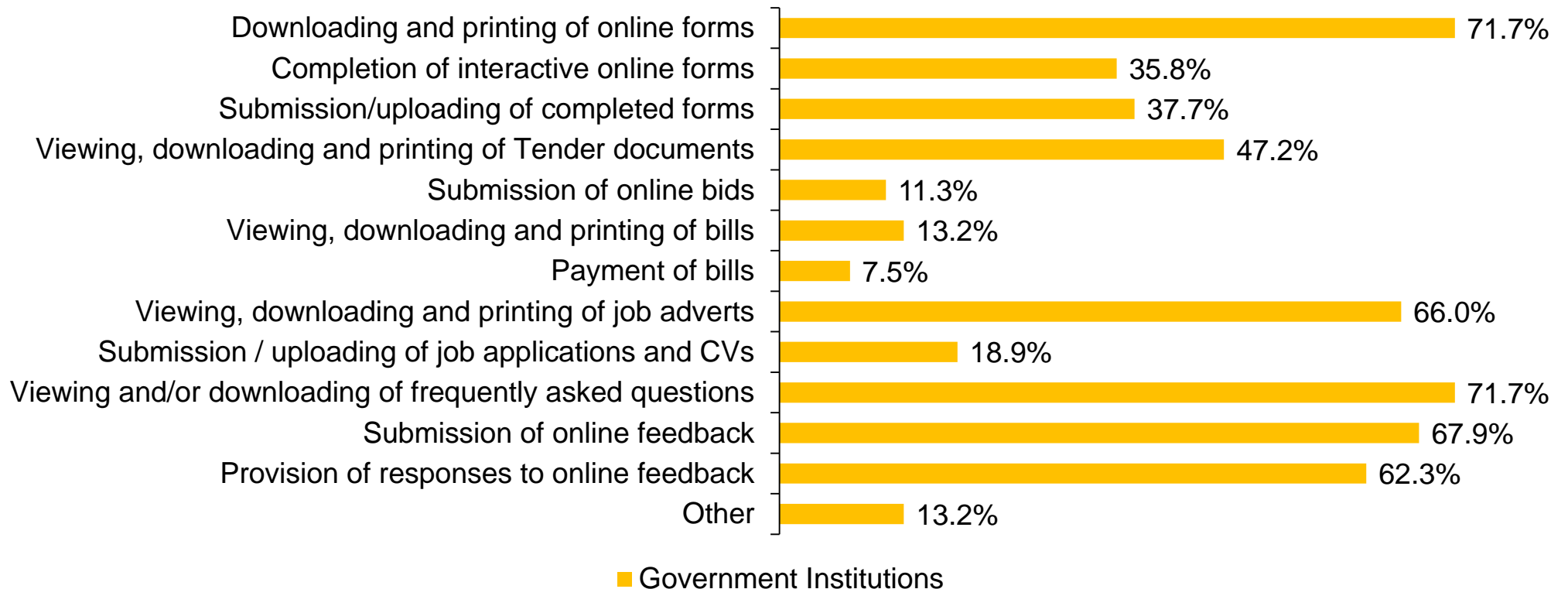
- ▶ 20% of central government institutions have databases maintaining data / information of public interest that are accessible externally by the public.
- ▶ As the current and planned e-Government initiatives are rolled out, it is expected that this percentage would increase significantly as government engages in transacting with businesses and citizens online.

# Online Services

## Uganda E-Government Survey 2012



# Percent of central government institutions providing services online



- ▶ 61% of the respondents indicated that they provide services online; of those that provide such services
  - ▶ 72% allow end users to download and print online forms;
  - ▶ 72% allow end users to view FAQs;
  - ▶ 68% allow submission of online feedback;
  - ▶ 47% allow the viewing, downloading and printing of tender documents;
  - ▶ 36% allow end users to complete interactive online forms and submit/upload completed forms.

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# Percent of government institutions providing services online

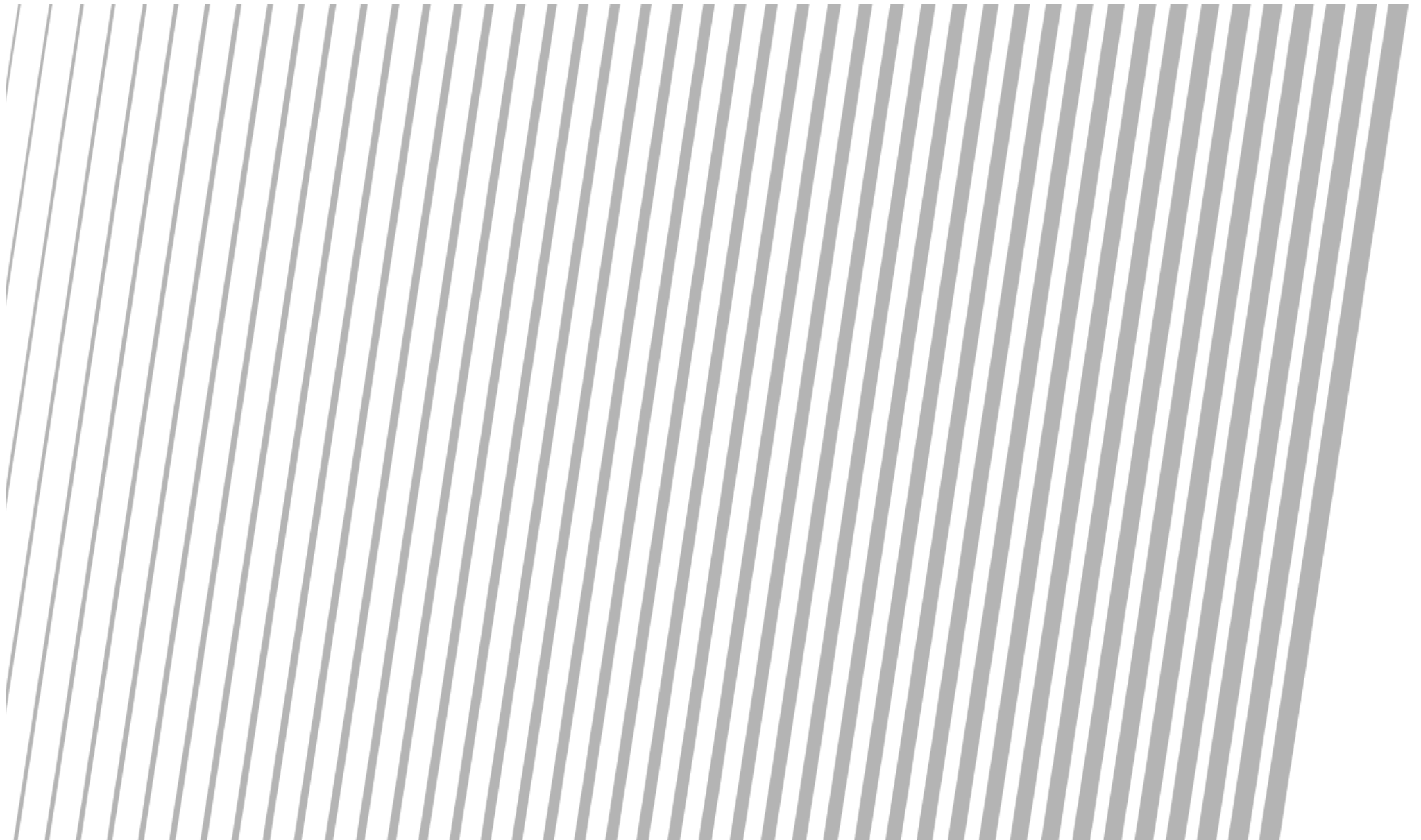
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## Our perspective

- ▶ Only 11% of institutions that provide online services allow end users to submit online bids; while only 8% or allow for payment of bills online.
- ▶ The findings for this indicator reflect that e-Government is still at the early stages of development in Uganda with most central government institutions providing end users with online information; but do not have the necessary processes in place for an end user to initiate and complete a full transactions without physically interacting with the institution using a manual paper-based process.

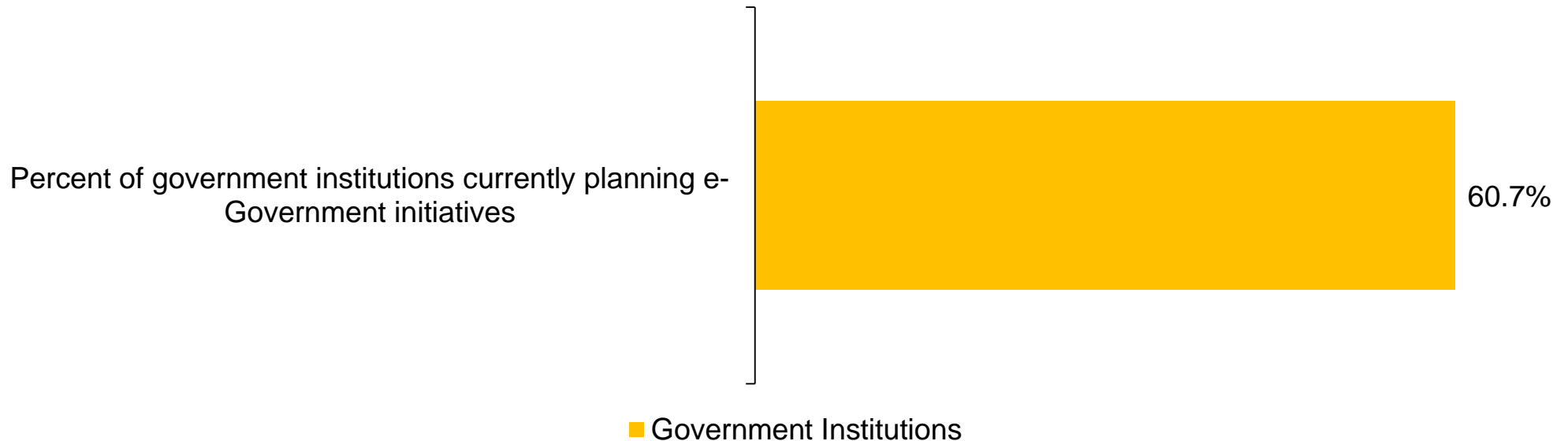
# E-Government Initiatives

Uganda E-Government Survey 2012





# E-government initiatives

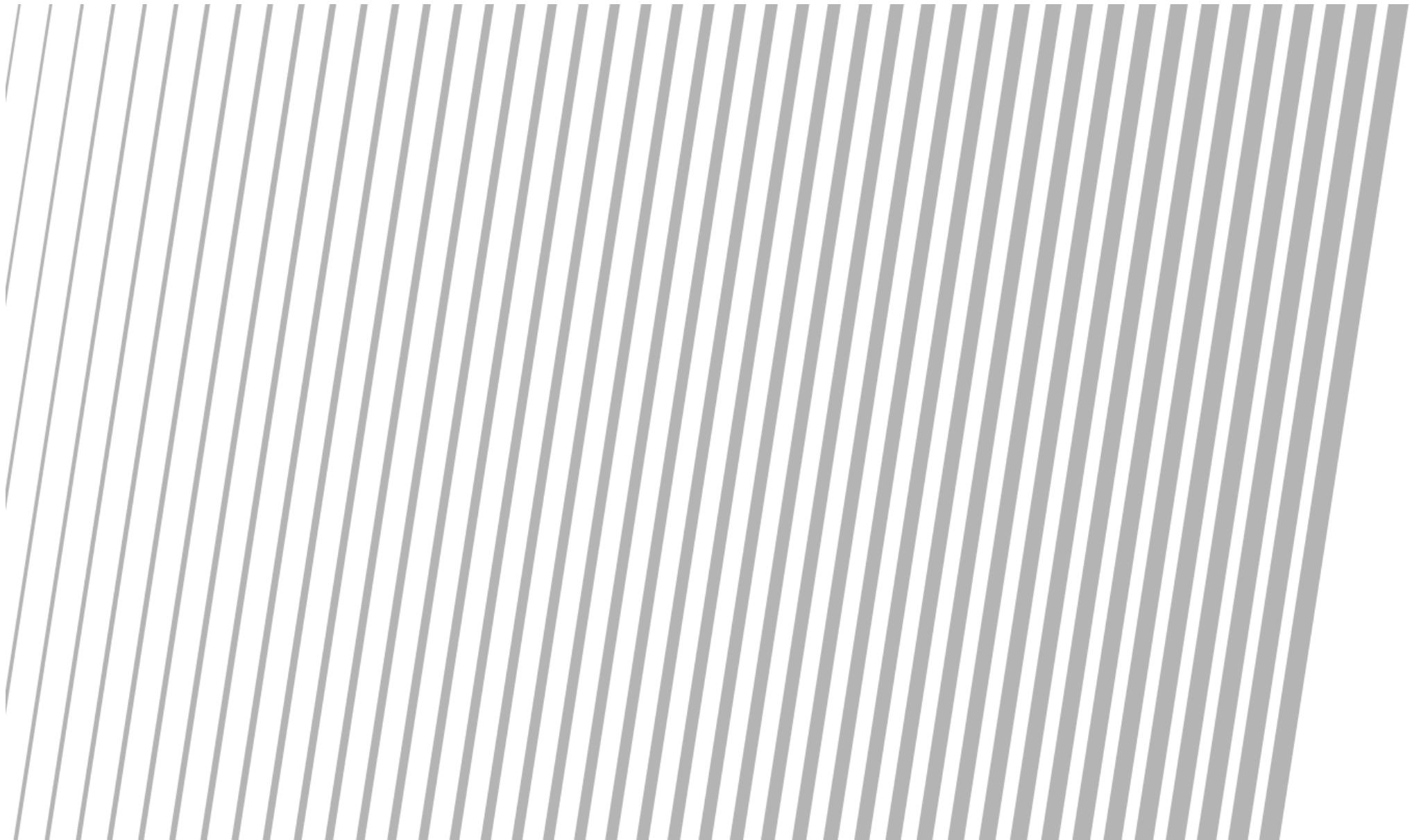


- ▶ With 61% of respondents planning e-Government initiatives, there is a desirable cultural shift within central government institutions to embrace the use of technology to enhance service delivery to businesses and citizens.
- ▶ Further sensitization on the benefits of e-Government within government institutions will go a long way to increasing this statistic to a more desirable percentage.

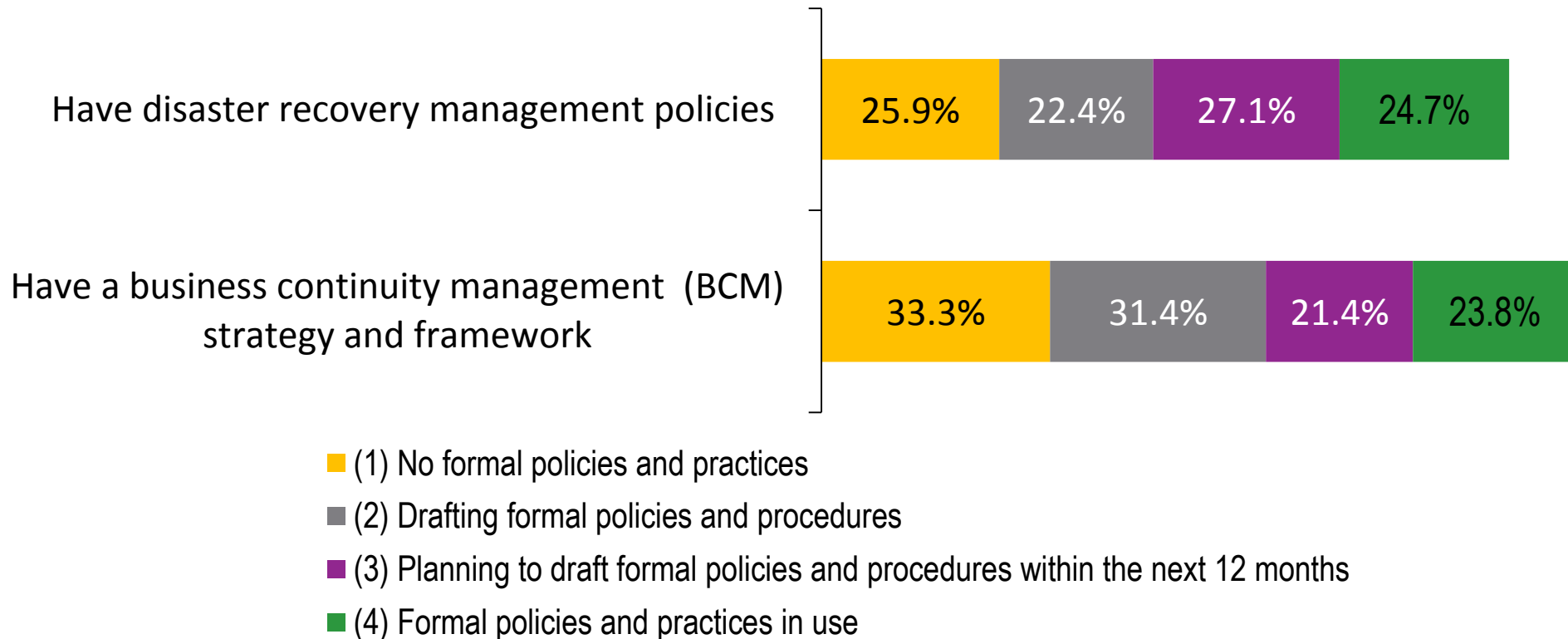
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# Policies, Procedures and Guidelines

Uganda E-Government Survey 2012



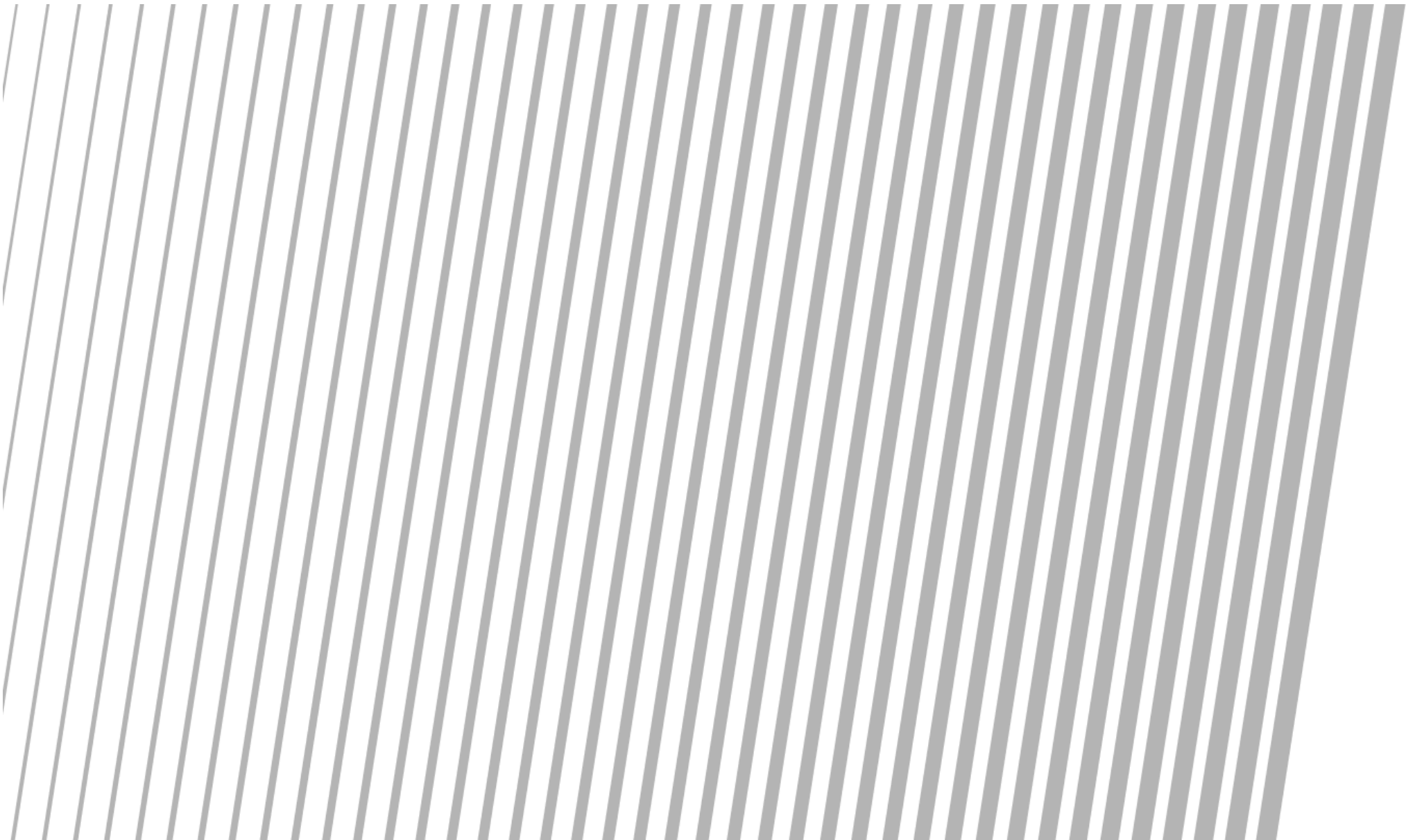
# Percent of central government institutions with BCP/DRP policies and plans



- ▶ Less than 25% of central government institutions have formal policies and practices in use for disaster recovery and business continuity management.
- ▶ Most institutions are still unprepared for catastrophic occurrences/events.

# e-Records Management

## Uganda E-Government Survey 2012

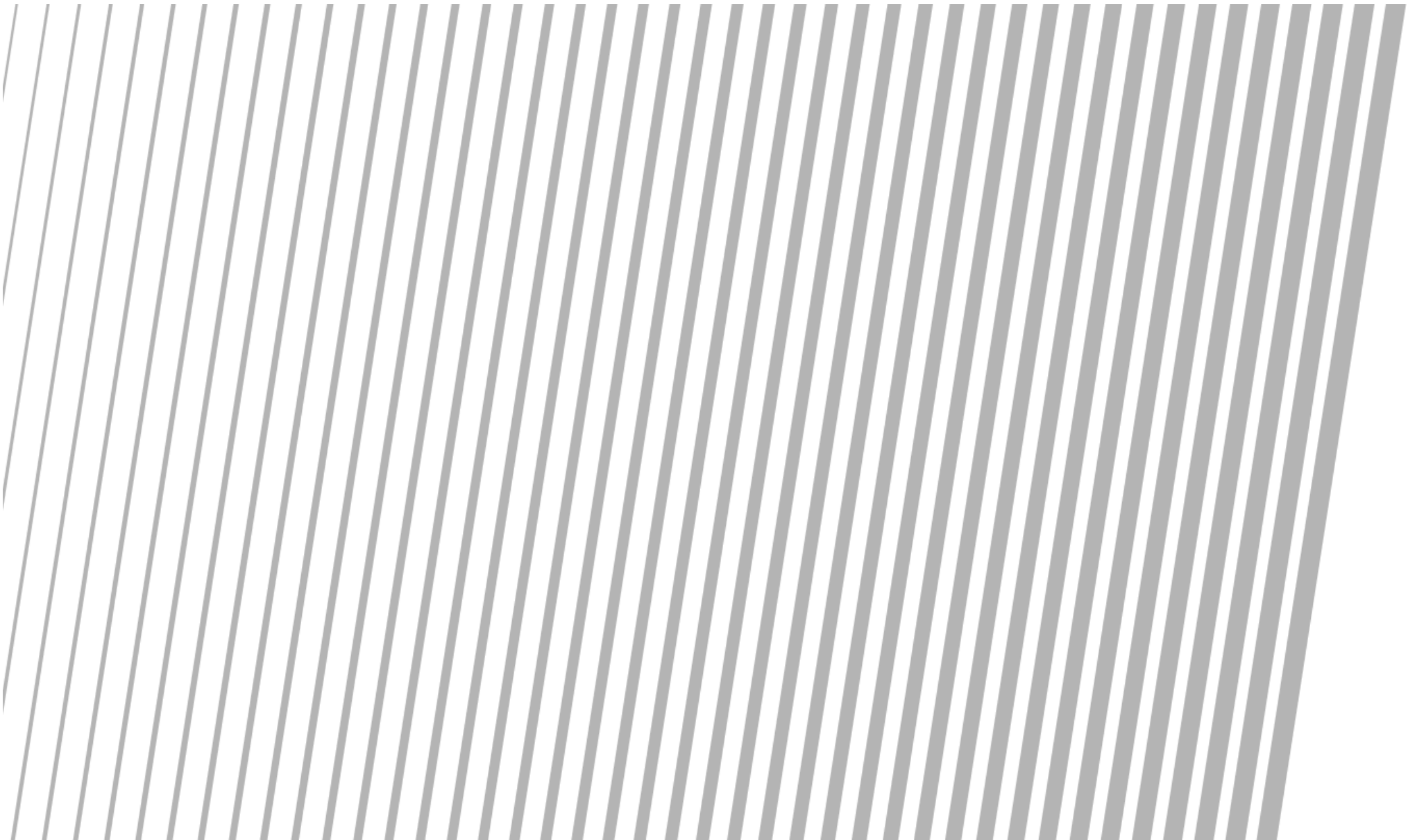


# Average level of records management proficiency in central government institutions

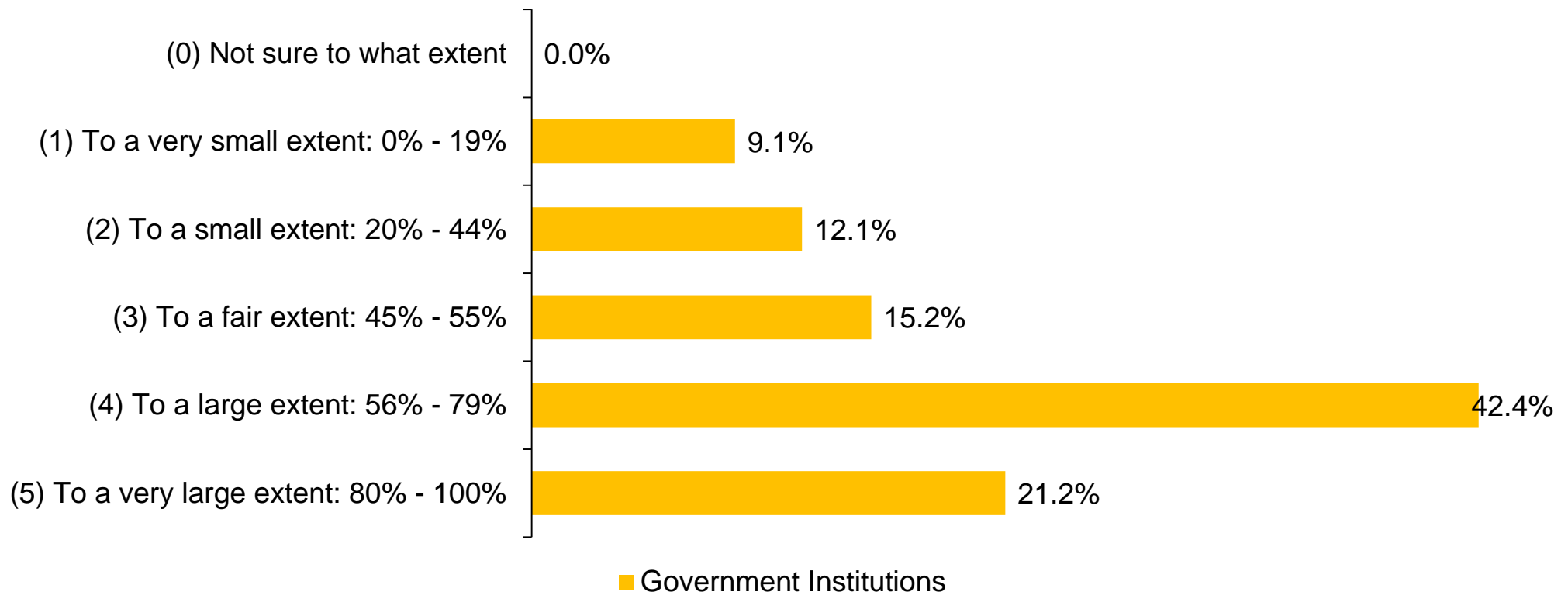


# IT Governance, Strategy, Policies and Linkage to Business Objectives

Uganda E-Government Survey 2012



# Extent to which the IT Strategic Plan supports central government institutions' business objectives



- ▶ Only 54% of respondents believe their IT strategy adequately supports business objectives
- ▶ Considering that only 55% of government institutions have strategic plans; it can be inferred that only 30% of central government institutions have strategic plans that support their business objectives to a large or very large extent.

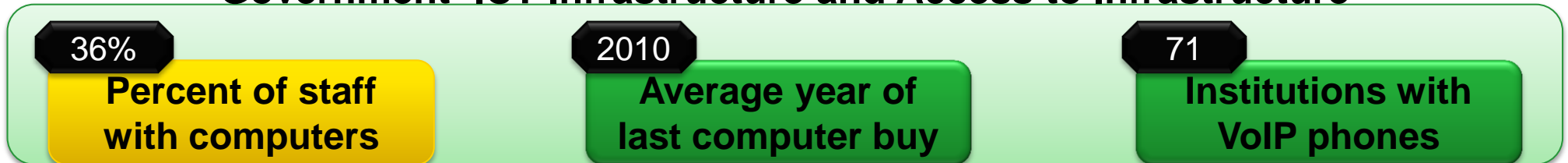
# What is Coming out Strongly

## Government of Uganda E-Government Landscape

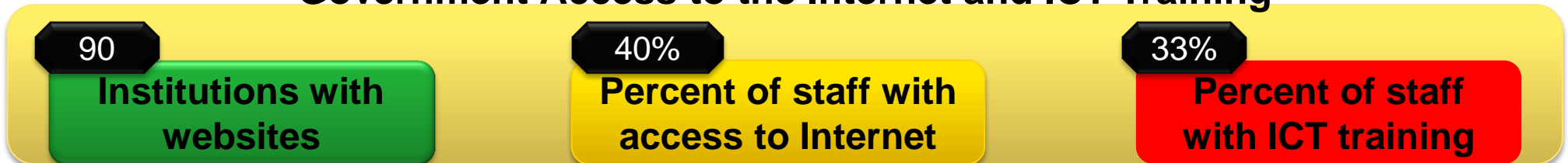
### Government ICT Governance and Spend



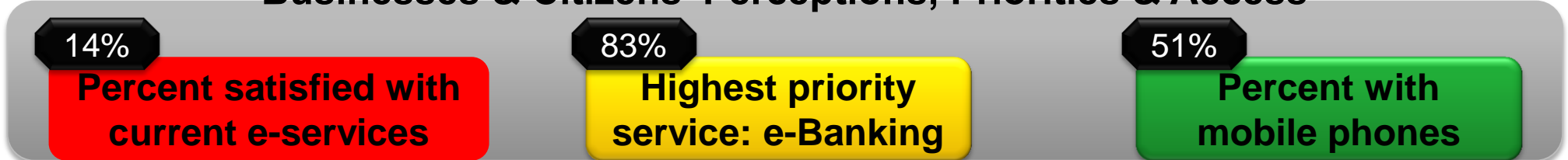
### Government ICT Infrastructure and Access to Infrastructure



### Government Access to the Internet and ICT Training



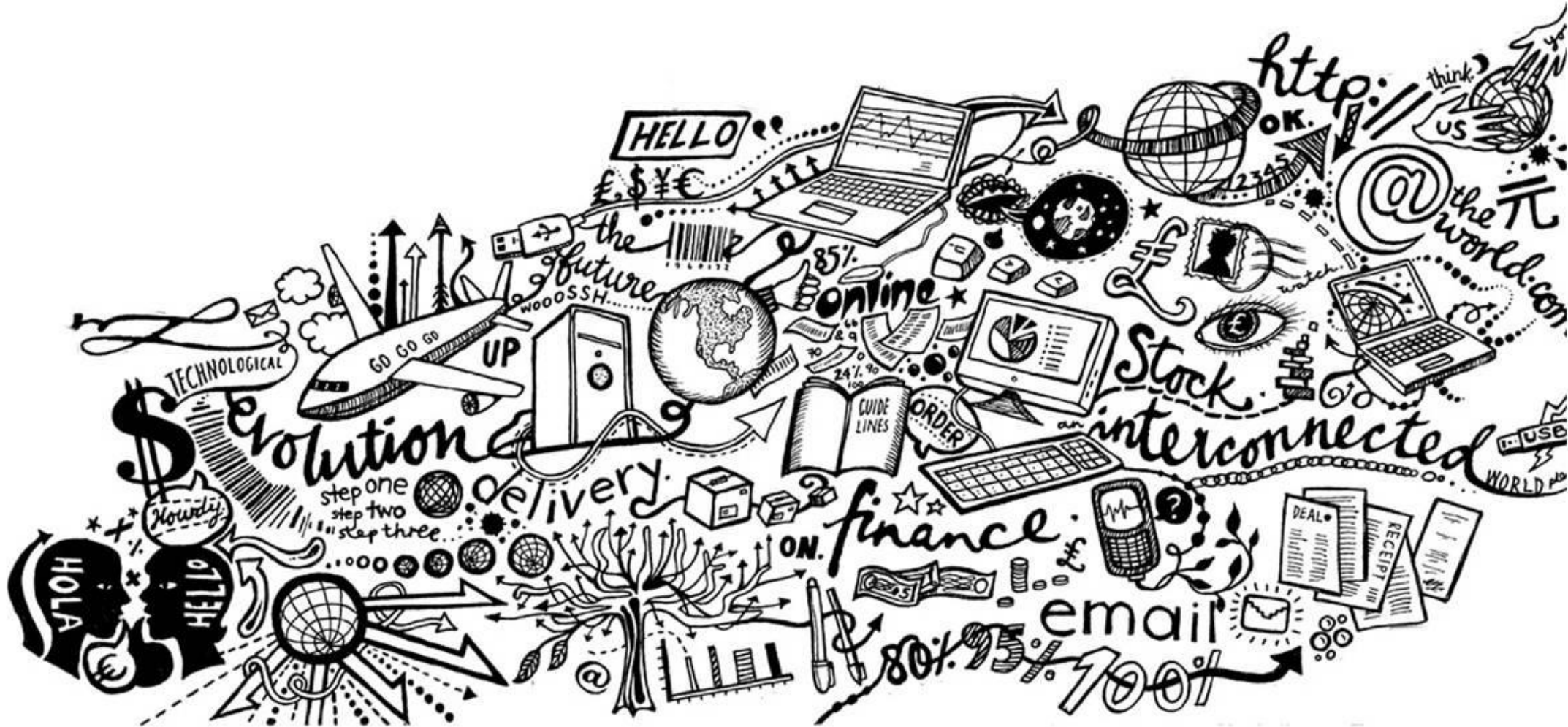
### Businesses & Citizens' Perceptions, Priorities & Access

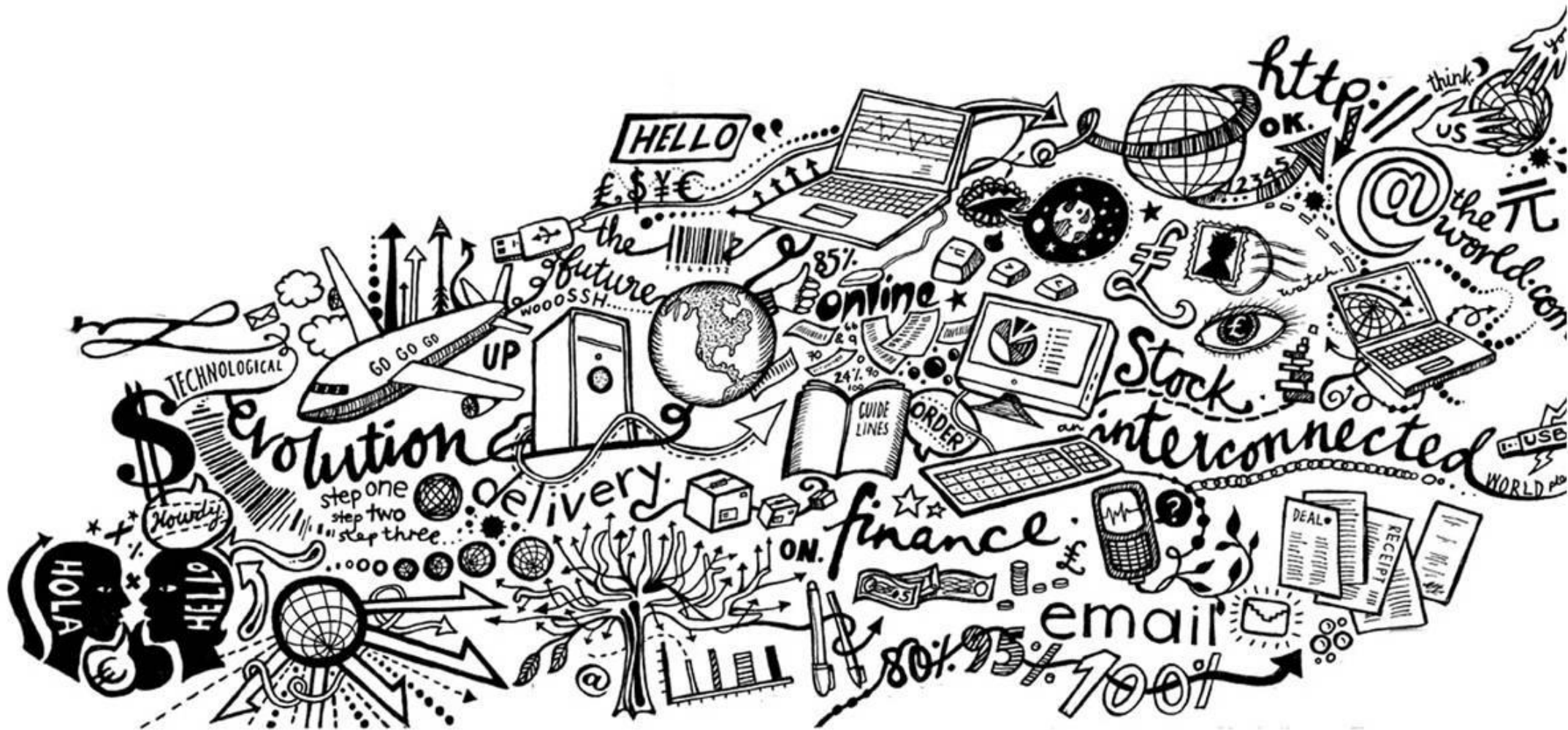


Good    Progressing Well    Needs Addressing    Score



# Thank You







# 1. Introduction



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# Introduction

## What is e-government?

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- ▶ **Broadly defined, E-Government is the use of ICT to promote a more efficient and effective government through;**
  - ▶ **Facilitating accessibility to government services,**
  - ▶ **Allowing greater public **access** to information, and**
  - ▶ **Making government more **accountable**.**



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# Introduction

## What is e-government?

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- ▶ Analogous to e-commerce, which allows businesses to transact with each other more efficiently **(B2B)** and brings customers closer to businesses **(B2C)**,
- ▶ e-government aims to make the interaction between government and citizens **(G2C)**, government and business enterprises **(G2B)**, and inter-agency relationships **(G2G)** more friendly, convenient, transparent, and inexpensive

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# Introduction

## What is an e-government readiness assessment?

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- ▶ Aims to **investigate** and **measure** how the government is able to utilize the opportunities created by Information and Communication Technology through **e-government**.
- ▶ For effective e-government readiness assessment there must be clearly defined e-government targets and parameters for measurement.

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# Introduction

## Why the need for an e-government readiness assessment?

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- ▶ **To create a rational framework for assessing e-Governance initiatives on various dimensions. The justification include;**

### **1.1. Significant investment of resources into e-Governance projects:**

- ▶ Projects are initiated by localized perceptions of the need to exploit ICT for better service, efficiency and transparency.
- ▶ No clear Business case/ ROI before the sanction of a project or during the period of its execution,
- ▶ Is the project proceeding on the right lines to achieve its original objectives.

### **1.2. Subjective assessments & value judgment:**

- ▶ Currently based on subjective assessment and few individual judgment
- ▶ Much less an institutional mechanism, for ensuring a rational and objective assessment of these initiatives.

### **1.3. Large national e-Government Strategy & action Plan:**

- ▶ Most governments have various initiatives to implement their e-Government strategies

### **1.4. Steer ongoing efforts in the right direction:**

- ▶ Projects are already in different stages of implementation.
- ▶ Create a set of instruments to administer projects, to appreciate the various attributes of a good e-governance project,
- ▶ Apply midcourse corrections, where needed, and steer these projects in the right direction.

### **1.5. Facilitate funding agencies to take a rational view:**

- ▶ Banks, financial institutions or multilateral funding agencies would like to be assured that the resources would go into projects that are likely to be successful
- ▶ Would like to see appraisals based on widely accepted framework.



# Introduction

## Why the need for an e-government readiness assessment?

Table 4.1 Top 20 countries in e-government development

Rank	Country	E-government development index value	Rank	Country	E-government development index value
1	Republic of Korea	0.8785	11	Singapore	0.7476
2	United States	0.8510	12	Sweden	0.7474
3	Canada	0.8448	13	Bahrain	0.7363
4	United Kingdom	0.8147	14	New Zealand	0.7311
5	Netherlands	0.8097	15	Germany	0.7309
6	Norway	0.8020	16	Belgium	0.7225
7	Denmark	0.7872	17	Japan	0.7152
8	Australia	0.7863	18	Switzerland	0.7136
9	Spain	0.7516	19	Finland	0.6967
10	France	0.7510	20	Estonia	0.6965

Table 4.2 Regional comparisons

Region	E-government development index value	
	2010	2008
Africa	0.2733	0.2739
Eastern Africa	0.2782	0.2879
Middle Africa	0.2603	0.2530
Northern Africa	0.3692	0.3403
Southern Africa	0.3505	0.3893
Western Africa	0.2156	0.2110

- ▶ eGovernment Authority (eGA) of Bahrain
  - ▶ Outsourced the PM aspect of several of its projects as part of the eGovernment strategy (18month project)
  - ▶ Automation of tender processes through e-Tendering system (2 year project)
  - ▶ The project involved more than 64 ministries to be connected to the e-tendering and more than 4000 suppliers.
- ▶ Her Majesty's Revenue and Customs (HMRC), **Central Government Department (HM Treasury), Technology Strategy Board UK**
  - ▶ support includes transformation of the HMRS's information management services function by delivering +300 million pound value of ICT projects across multiple years.
- ▶ East African Community, South African Revenue, Uganda revenue Authority, etc...

# Background to the survey

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- ▶ The efforts towards implementing e-government in Uganda runs as far back as 2004, when an e-readiness assessment was conducted.
- ▶ The study concluded that despite the government will and mandate, the growth of ICT in the country is hampered by funding, investments, and affordability.
- ▶ The GoU conducted a National ICT Master Plan and e-government network feasibility study to chart a technically feasible, coordinated and financially responsible course of ICT development within the country through the master ICT plan and then focus more narrowly on the government sector as a subset within the overall ICT development plan.
- ▶ An e-government framework was developed in 2006 as an engine to kick start a harmonized implementation of e-government initiatives as one of the facets to transform Uganda into a knowledge based economy.
- ▶ The GoU therefore commissioned Ernst & Young to develop an improved tool for conducting regular e-government surveys.

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# Objectives to the e-government survey

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To develop a component based e-government assessment model from which concrete assessment instruments can be developed.

- ▶ Demand – needs on public services and access to information and preferences on delivery
- ▶ Capability – current practice, ongoing initiatives and resources available for ICT
- ▶ Enabling environment – political, legal, regulatory, coordination, cooperation and partnership frameworks
- ▶ Technology – ICT penetration, hardware, software platform and network infrastructure
- ▶ National context – country features such as demographics
- ▶ International context – relationships with the regional and international partners

# Objectives to the survey

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- ▶ Perceptions and challenges – with respect to e-government
- ▶ Develop an e-government readiness assessment framework and indicators appropriate for the Ugandan situation. The framework would be a best of breed of regional and international recognised frameworks.
- ▶ Carry out a diagnostic assessment of the overall country e-government readiness;
- ▶ Create a database of existing core stakeholder demographics (including a human resource and ICT training) and ICT infrastructure, including the information technology system that can be updated online.
- ▶ Identify the critical issues that confront stakeholders and impede the adoption of ICT in service delivery and operations.

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# Objectives to the survey

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- ▶ Prepare recommendations on further possible use of existing ICT systems related to e-government implementation
- ▶ Design and develop an e-government readiness assessment monitoring and evaluation framework
- ▶ Facilitate at least two key stakeholders' workshops, at the start (validation) and the end of the study, to discuss the findings of the diagnostic e-government readiness assessment
- ▶ Prepare a final e-government readiness assessment report to be distributed to all stakeholders



# E-government Indicators

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- ▶ Effective measure of e-government depends on the identification of key indicators.
- ▶ In developing the indicators we considered;
  - ▶ Global best practise indicators (e.g. United National e-readiness survey)
  - ▶ Government of Uganda millennium goals
  - ▶ Mandate and goals of National Information technology Authority
  - ▶ We also consulted our stakeholders which includes - **Government institutions** , **Business & Citizens** ( e.g. Head of institutions, ICT professionals, Academia, Politicians, Students) through a consultative workshop
  - ▶ Reviewed regional and global initiatives and progress on e-government (Interviews, Literature review e.t.c.).

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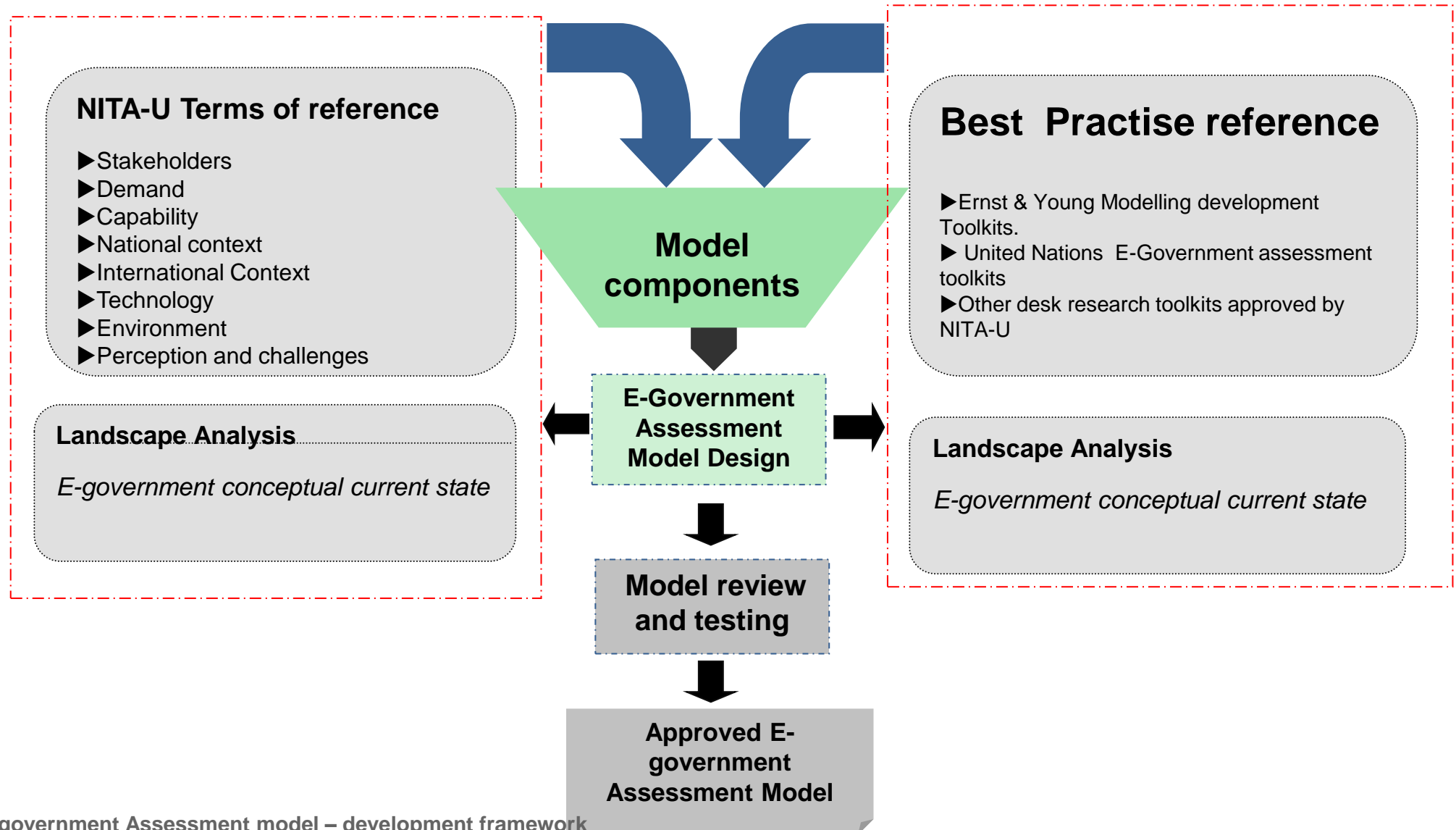
# Government Indicators

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- ▶ **Total of 96 Main Indicators identified.**
- ▶ Main indicators Distribution;
  - ▶ 80 Indicators for Government to Government
  - ▶ 11 indicators for Information Communication technology
  - ▶ 5 Indicators for Government to Business and Government to Citizen
- ▶ Of the main 96 indicators 29 Sub-Indicators were developed where developed totalling to 125 indicators in total.
- ▶ We had a total of 30 iterations that resulted in the final set of Indicators.



# Frameworks and Model Design



E government Assessment model – development framework



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# Methodology overview

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When developing our methodology, we considered the typical steps for any survey project:

1. Establish the goals of the project - What we want to learn
2. Determine the sample - Whom we will interview
3. Choose interviewing methodology - How we will interview
4. Create questionnaire - What we will ask
5. Pre-test the questionnaire (pilot test) - Test the questions
6. Conduct interviews and enter data - Ask the questions
7. Analyze the data – Develop the trends
8. Produce the report

# Survey Process

Survey Step	Brief Description
1. Detailed Current State Review	Interviews, Literature review, Stakeholder consultation workshops, indicator development
2. Preliminary Survey Instrument Design	Drafted the indicator based survey questionnaire and online survey tool
3. Stakeholder Analysis	Interviewed key government, business and citizens stakeholders
4. Survey Design & Survey Instrument Finalization	Agreed the survey design, questionnaire and online e-government survey tool
5. Data Collection (Field Work)	Interviewed 1,419 respondents in 20 districts
6. Designed Tool for Dataset Development	Designed & Tested MS SQL Database
7. Data Entry & Preliminary Data Analysis	Posted data in MS SQL database
8. Data Validation and Dataset Clean Up	Validated the data and performed clean up
9. Detailed Data Analysis	Analysed the Data using MS Excel
10. Conclusions & Recommendation Development	Developed conclusions and recommendations

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# Survey Design

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Involved:

1. Identifying the various types of respondents to be targeted
2. Determining sample size and frame,
3. Developing the questionnaire, and
4. Determining how the data would be collected.

# Field Survey Team – Make up, Training & Pilot Study

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- ▶ 1 engagement partner, 1 team leader, 2 regional managers, with 4 field supervisors and 15 research assistants (19 enumerators) were involved in primary data collection
  - ▶ Minimum qualification of all survey participants was a university degree
  - ▶ Total of 25 team members including a statistician and an IT specialist data entry clerk
- ▶ The research assistants and supervisors were trained.
  - ▶ equipped the enumerators with survey and data collection skills required for this specific survey
  - ▶ Discussed each item on the questionnaire to ensure clarity and test the robustness of the data collection tools.
  - ▶ Member of the NITA-U project team participated to convey importance of the survey
- ▶ A one-day pilot study was conducted the day after the training
  - ▶ to validate the research instrument to assess the clarity of the items on the instrument.
  - ▶ conducted in Kampala city, covering 12 respondents in different sectors.

# Data Entry, Validation and Analysis

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- ▶ Training of Pilot Survey Enumerators: Thursday 19 April 2012
- ▶ Pilot Survey in Kampala: Friday 20 April to Thursday 3 May 2012
- ▶ Training of Main Survey Enumerators: Wednesday 9 May 2012
- ▶ Data collection exercise
  - ▶ Main Survey: Kampala-based Businesses & Citizens: Thursday 10 to Friday 11 May 2012
  - ▶ Main Survey: Upcountry-based Businesses & Citizens: Monday 14 to Friday 18 May 2012
  - ▶ Main Survey: Kampala-based Government Institutions: Thursday 17 May to Friday 22nd June 2012
  - ▶ Official Closing Date -22 June 2012
- ▶ Data Entry Exercise: (Pilot Survey and Main Survey Data entry) Monday 21 May to 29th June
- ▶ Preliminary analysis of the dataset was performed;
  - ▶ Results were used to validate the dataset and address inconsistencies.
  - ▶ Data was cleaned and collated (Monday 25 June to Friday 6 July)
- ▶ Reporting and Presentations of draft results: Monday 9th July to Friday 20th July

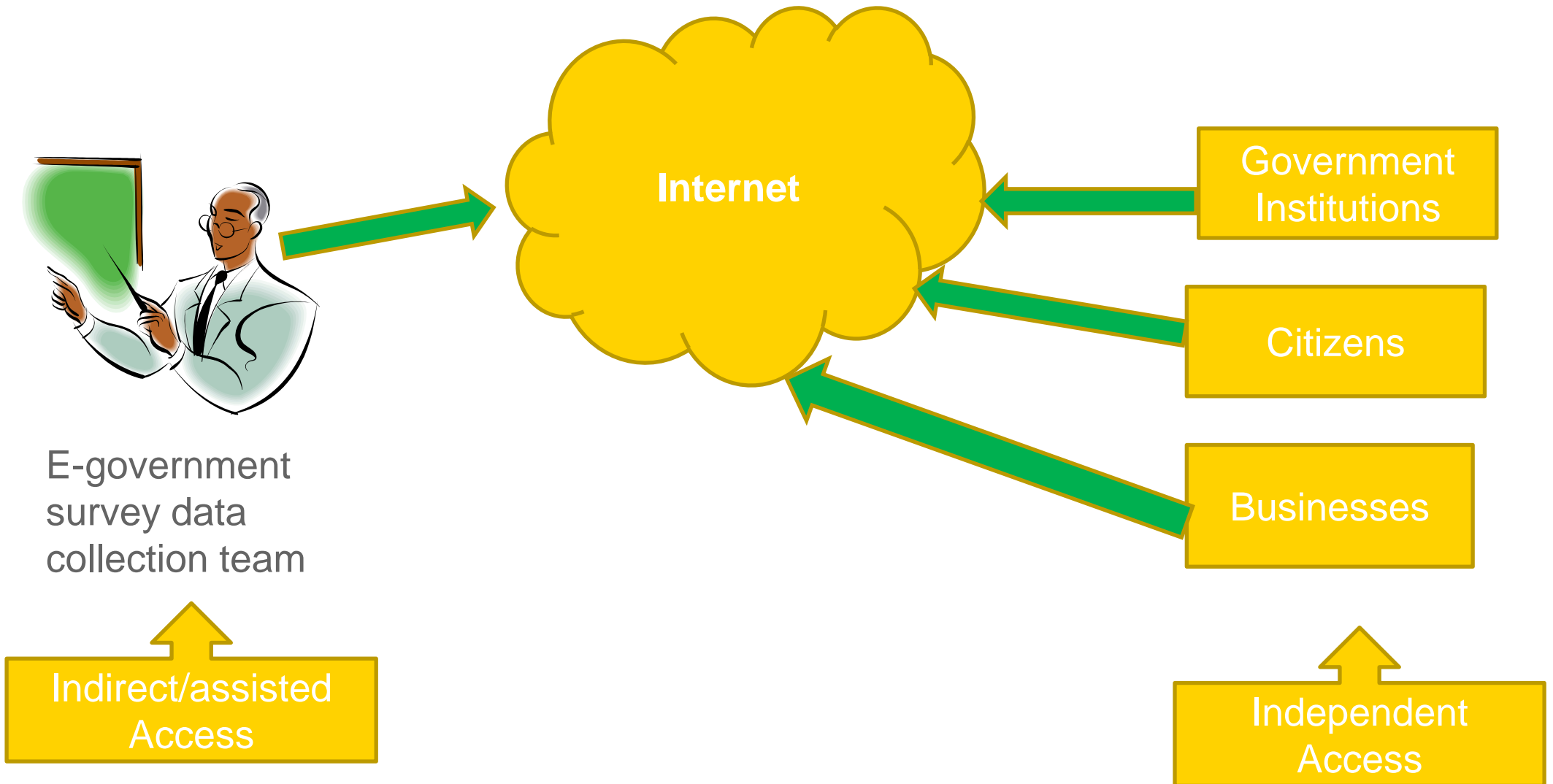
# Online Web-Based Data collection tool

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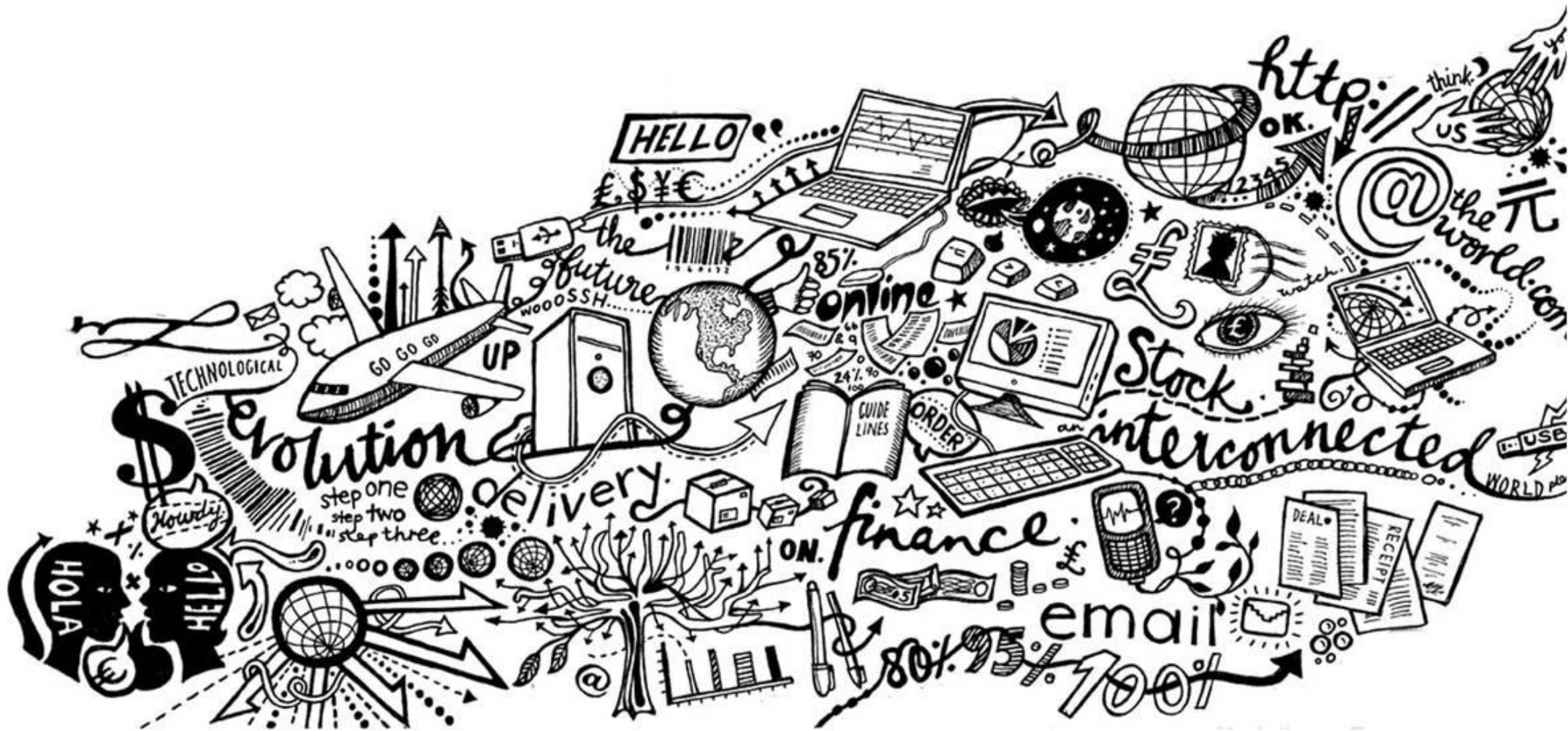
- ▶ Web-based data collection tool was developed based on;
  - ▶ E-government Indicator based questionnaires
  - ▶ Online best practise data collection
- ▶ Can be accessed through the internet from any internet enabled device
- ▶ It has in-built data analysis capabilities.
- ▶ Hosted by NITA-U
  
- ▶ Can be accessed via the NITA-U website or directly
- ▶ <http://41.77.72.34/esurvey>
  
- ▶ Will be officially handed over to NITA at the end of the project



# Online Survey Concept



# Survey Results and Findings

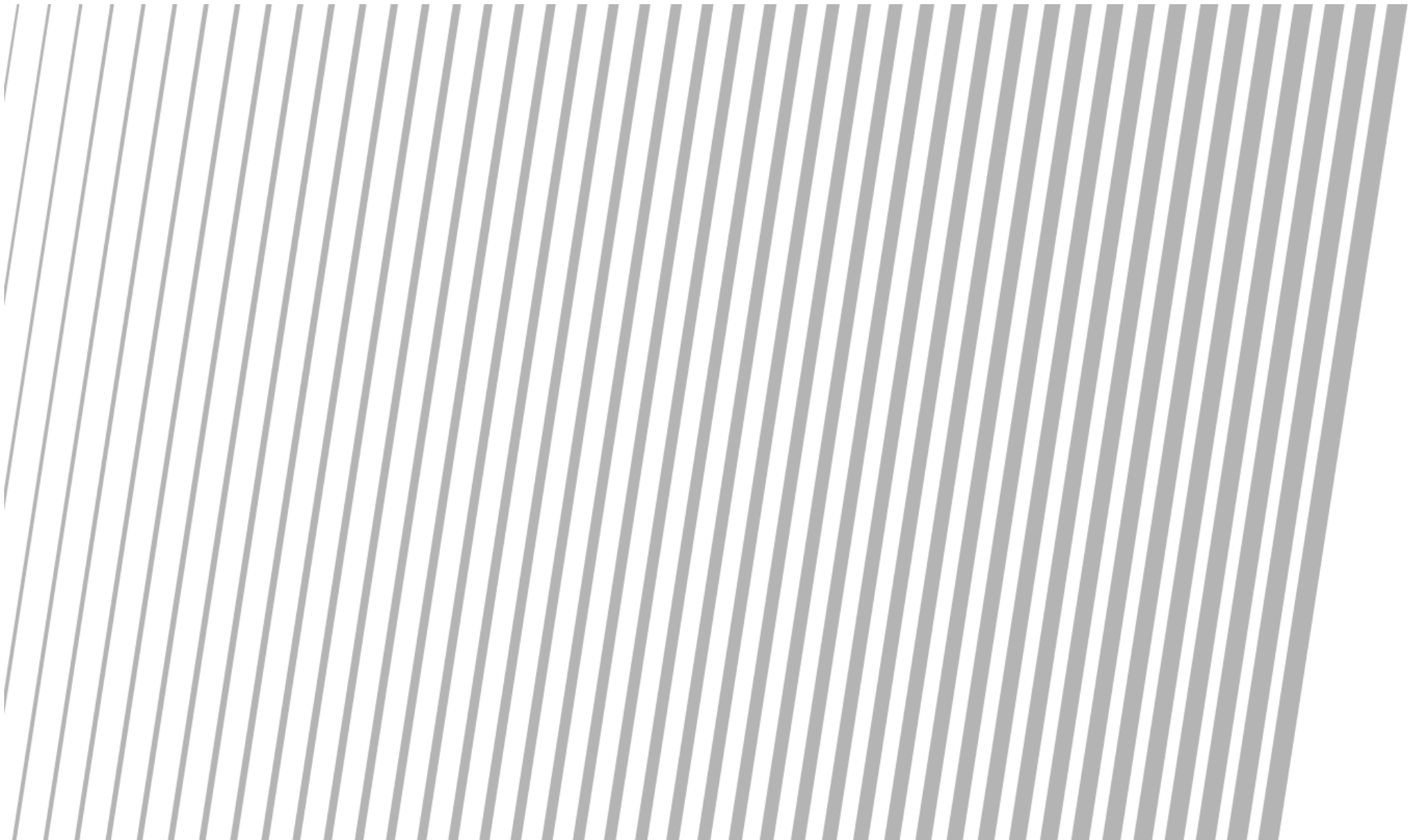




## Government to Government (G2G) Indicators

# ICT Equipment and Staff Access to Equipment

Uganda E-Government Survey 2012



# Staff access to computers in government

## Our perspective

- ▶ 93 Heads of IT for central government institutions responded during the survey, indicating that there are 10,926 government staff in their institutions who need computers to do their work, but do not have them, out of a total of 19,626 staff.
- ▶ On average, there are 211 staff in every central government institution who need computers to do their work, of which only 94 staff have one assigned to them; as per the Heads of IT.
- ▶ Hence 56% of staff who need computers, to do their work do not have them. However, we noted that 52% or 61 staff of the 117 staff who do not have an assigned computer have access to a computer to do their work on an as-need basis.
- ▶ The total percentage of staff with assigned computers and with access to computers is 73%; or 155 staff out of 211 staff in central government institutions who need computers to do their work.

# Staff access to computers in central government

## Our perspective

- ▶ Only 44% of staff in central government institutions who need computers to do their work have a computer assigned to them; while 27% have no form of access to computers whatsoever.
- ▶ In order to meet the objectives of e-government, the **number of computers within central government needs to increase by 126%** to meet current state demands.
- ▶ The basic requirement for central government to provide computers to employees who require computers to do their work to enable service delivery through e-Government initiatives has not yet been met.

# Average age of computers in central government institutions

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## Our perspective

- ▶ Modern day software demands on computers require that computers with **high-end technical specifications** are purchased for them to last a good number of years before requiring replacement.
- ▶ The fact that the central government has less than half of the computers it currently needs presents an opportunity for the government to develop **global standard technical specifications** for the purchase of computer hardware - to be implemented by all government institutions to ensure hardware and software compatibility across government and to promote longevity in terms of the useful life of computers.
- ▶ In the event that such standards do not exist or have not been approved, NITA-U should **publish on its website proposed best practice hardware technical standards** that all government institutions should be encouraged to adopt as a **minimum standard** for any hardware purchases until such standards have been approved and implemented.

# Percentage of central government institutions with ICT equipment

## Our perspective

- ▶ In total, there are 15,808 desktops, laptops and tablet computers of which 84% are desktops, 15% are laptops and 1% are tablet computers.
- ▶ This appears to reflect the desire by government institutions to maintain non-portable computing devices, which may be due to the tradition of having cabled network connections requiring specific non-movable end points, and to address physical security requirements.
- ▶ With the upsurge of wireless networks (LANs, Wi-Fi, 3G mobile, etc), cloud computing, and a cultural shift towards portable computing devices, the government will need to **revisit her policies around the mix of non-portable computing devices** in consideration of the emerging culture of a mobile work force.
- ▶ 86% of the 93 respondents have single function desktop printers totalling to 3,575; with 83% having a total of 959 standalone scanners; and 74% having a total of 282 fax machines - compared to 81% of institutions with 543 multifunctional business printers.



# Percentage of central government institutions with ICT equipment

## Our perspective

- ▶ In view of technology trends, it is important for the government to **encourage the purchase of multifunctional business printers** that can **print, copy, scan and fax** and phase out the standalone machines to save on the overall purchase costs, space allocation and maintenance costs.
- ▶ Government needs to **shift away from** having its current 4,901 **fixed line analogue phones** present in 72% of central government institutions **and increase** on the **fixed line IP phones** which are only present in 27% of institutions and are 1,438 in total **to save on the overall cost of telephony.**
- ▶ A few standardized fixed phone lines managed centrally, with dialling codes for each government institution would save the government a lot of money spent on maintaining direct lines; through the **utilization of the National Backbone Infrastructure to provide low-cost inter-departmental phone calls across all government institutions using fixed line IP phones.**

# Mobile computing trends

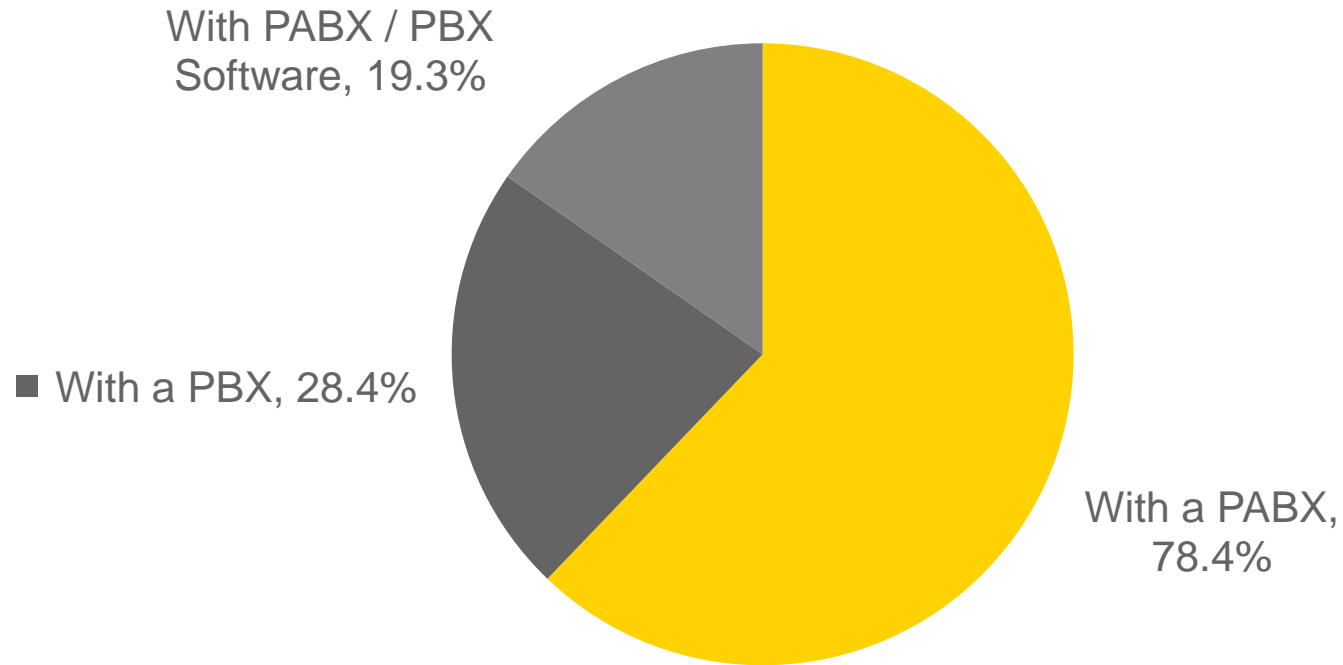
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## Our perspective

- ▶ While personal adaptation rises, business use for tablet computers lags.
- ▶ For the first time, consumer technology trends are driving business technology demands.
- ▶ As the use of tablets continues to rise, government institutions will struggle to find ways to keep pace with the security concerns that come with them.
- ▶ There is therefore a need to **establish governance and guidance for the use of both mobile devices and their associated software** products.
- ▶ Banning the use of mobile devices may actually increase the government's risk exposure, as rogue use might develop; and such a ban would be detrimental to the promotion of e-Government initiatives targeting mobile computing device users.

# Percentage of central government institutions with a business telephone system

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# Access to internet by type of access

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## Our perspective

- ▶ The fibre optic cable, wireless AP and the copper cable, all on fixed broadband are the most common connection options.
- ▶ 20% of government institutions connect via mobile broadband reflecting the increasing important of mobile computing and the transition to a mobile workforce in government.
- ▶ Of concern is the 6% of institutions still connected via Narrowband (Dial Up).

# Software applications

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## Our perspective

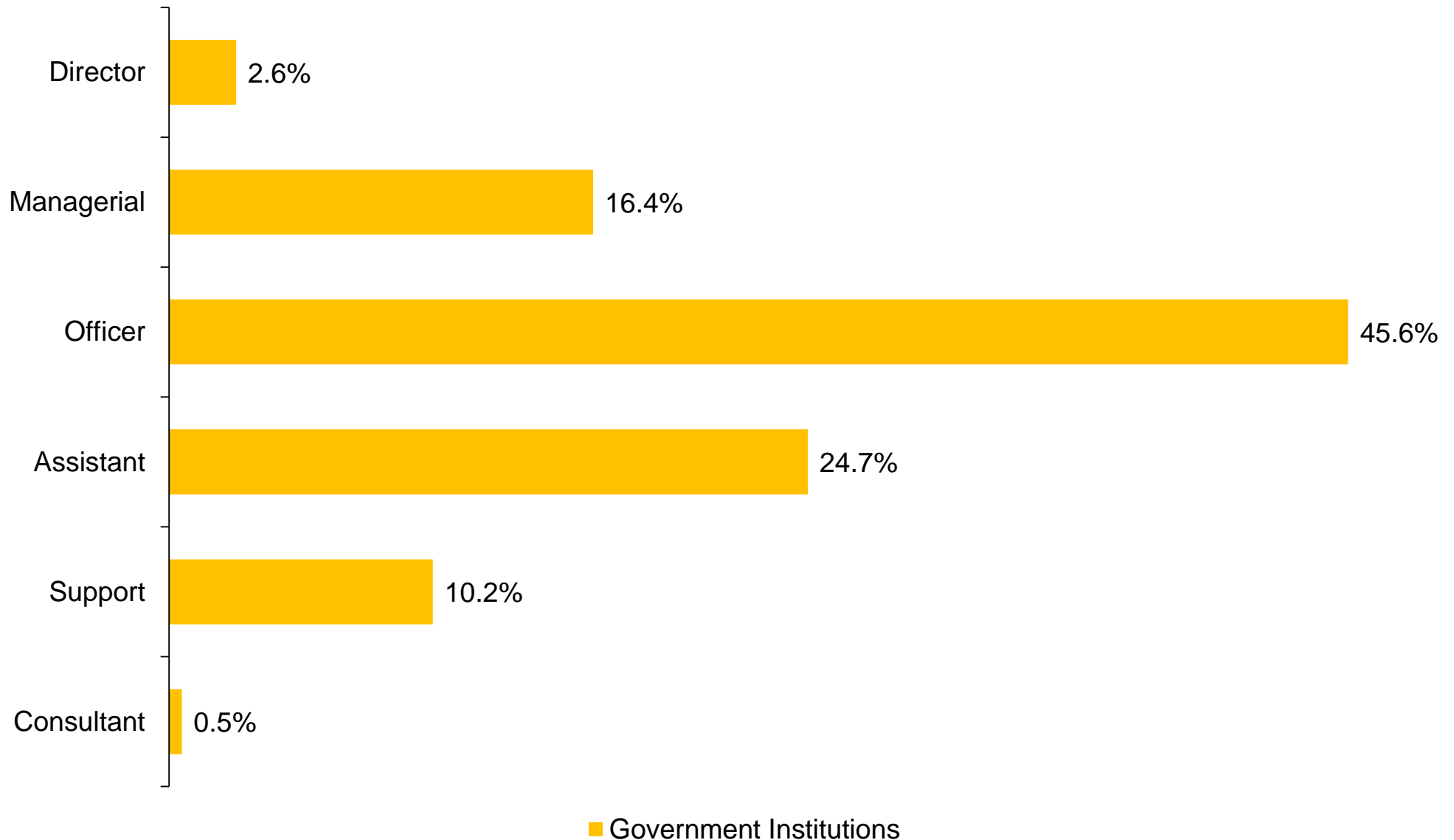
- ▶ With the majority of government institutions having applications that can support online transactions, it is important that the development of e-Government initiatives that support online processes that will benefit businesses and citizens are considered as a priority.
- ▶ The survey did not reflect a consistency in government institutions using other software applications outside of the commonly used Microsoft products for both the operating system and productivity categories.
- ▶ Less than half (45%) of respondents indicated having a software upgrade strategy or policy or guidelines governing software upgrades.
  - ▶ Standard policies regarding software upgrades for proprietary and open source applications should be developed by the government to ensure consistency and compatibility in the versions of software used across government

# ICT Personnel in central government institutions

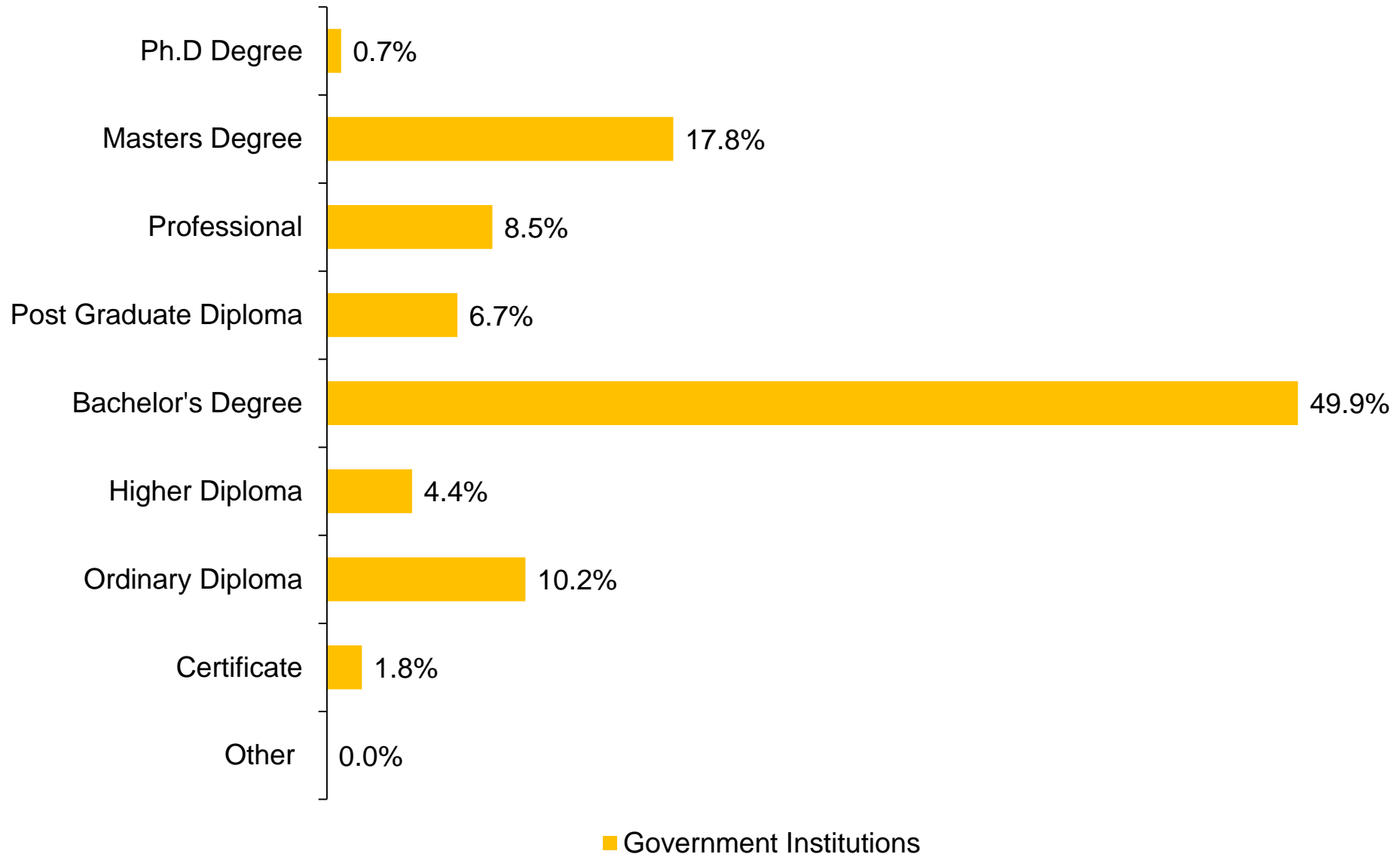
## Our perspective

- ▶ From a gender distribution perspective, this shows a consistency with the distributions of how computers are assigned to staff and how staff have access to the internet.
- ▶ From the results, 0.9% of ICT personnel are persons with disability. This correlates positively with the fact that 0.7% of staff in government institutions are persons with disability.
- ▶ As can be seen, the PWD percentage among ICT personnel is higher than the general average by 0.2%.
- ▶ This means that there are more PWDs in ICT compared to most of the other departments in government institutions. This may be due to the nature of ICT work which in some cases allows for staff to remain in one location for most of the day, especially in large IT departments.

# ICT personnel in central government institutions disaggregated by rank

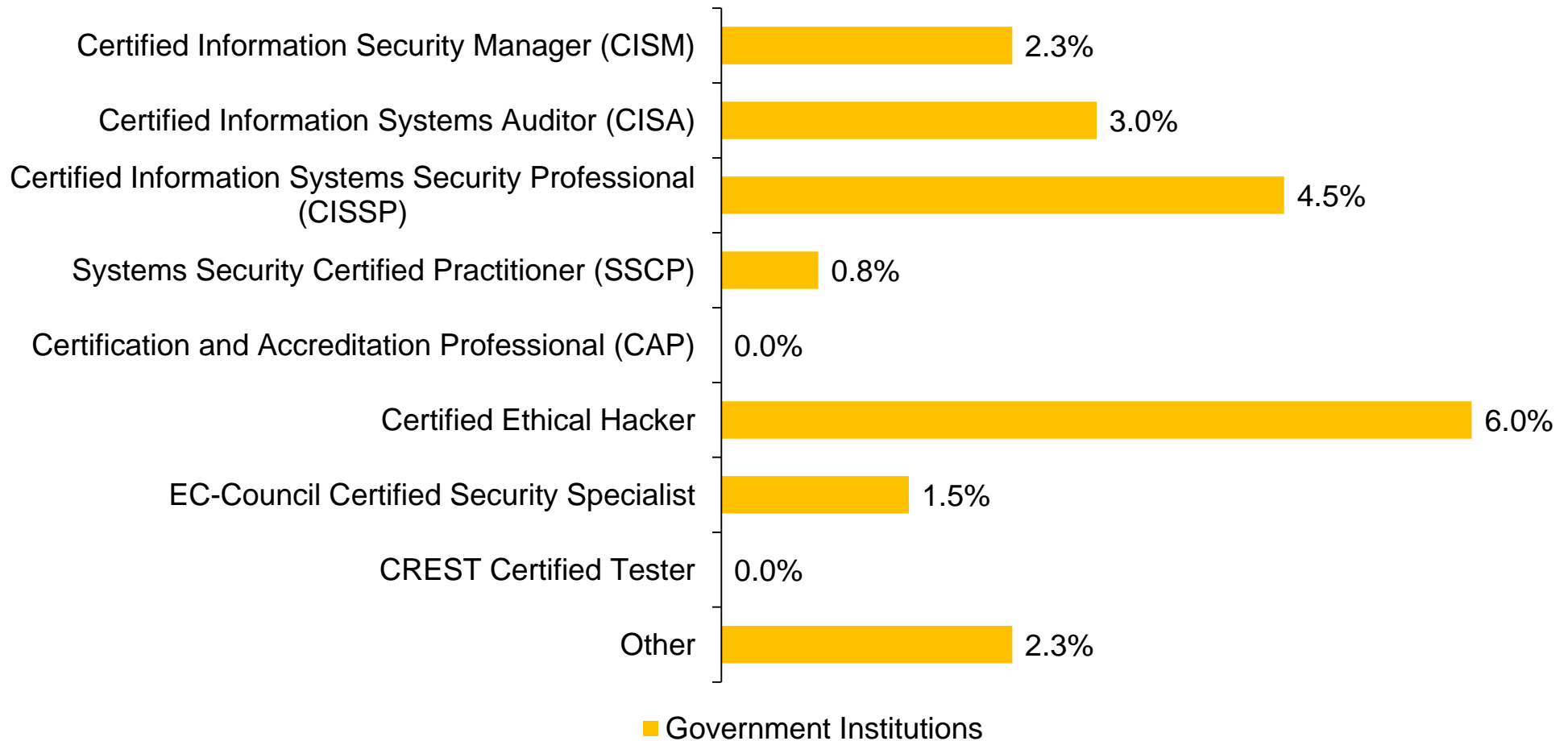


# Average qualifications of ICT personnel in central government institutions



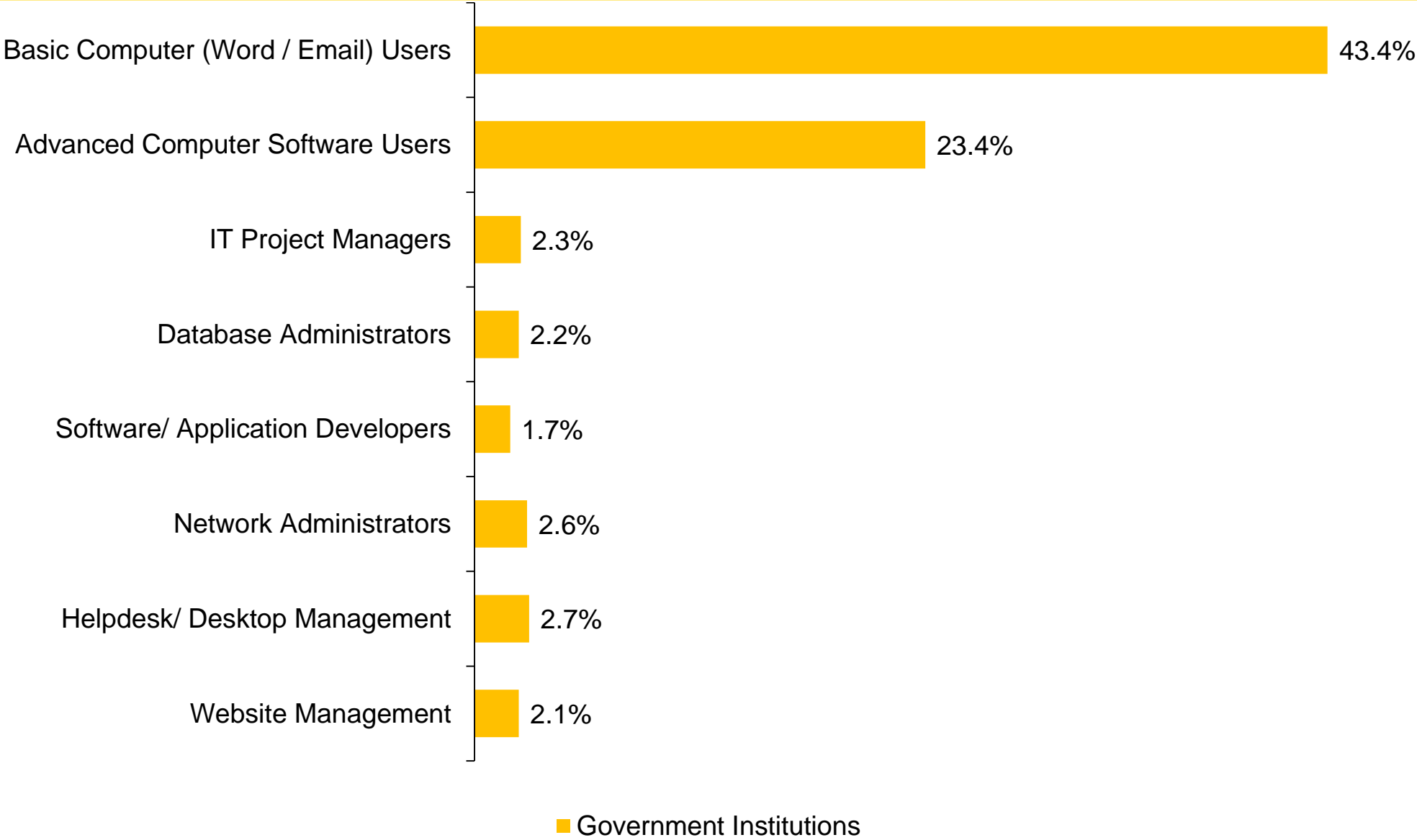


# IT Security personnel in government institutions with professional qualifications

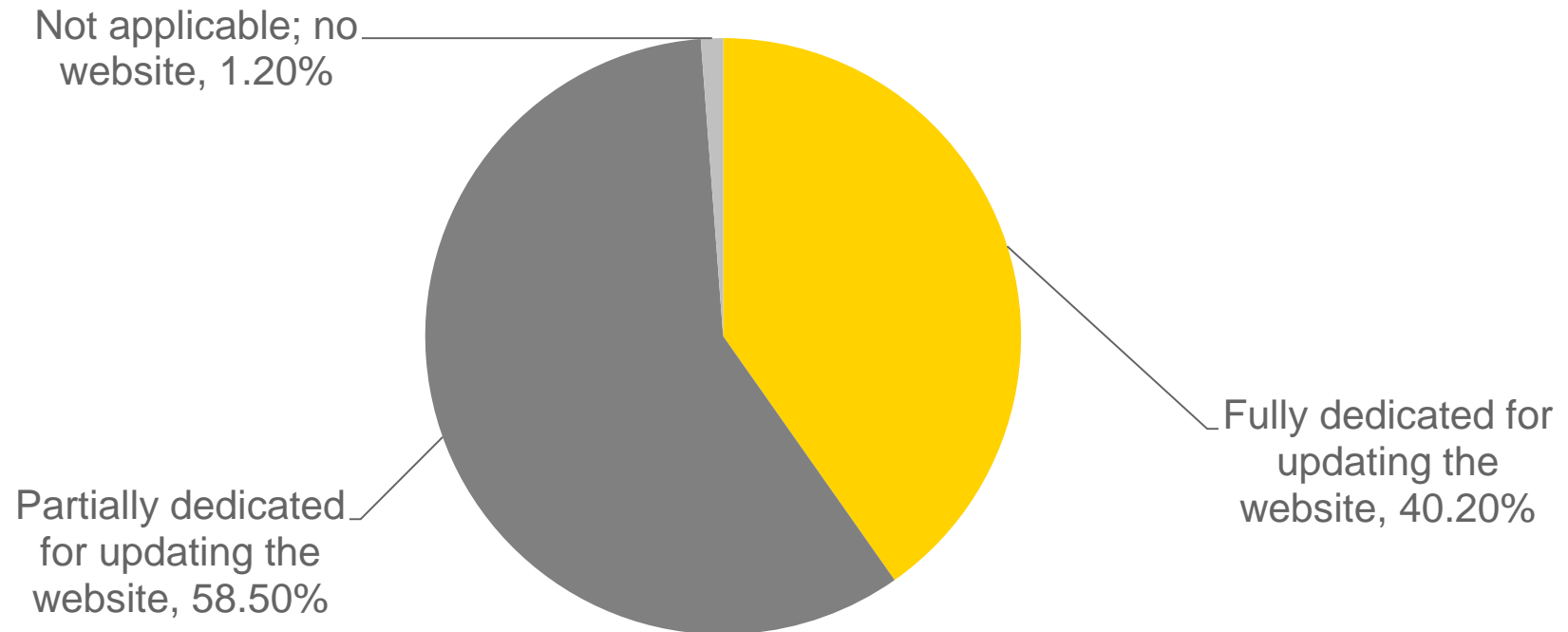


- ▶ The average number of IT security personnel per central Government institution is 1.6 persons

# Average number of staff in a government Institution trained in the use of ICT software

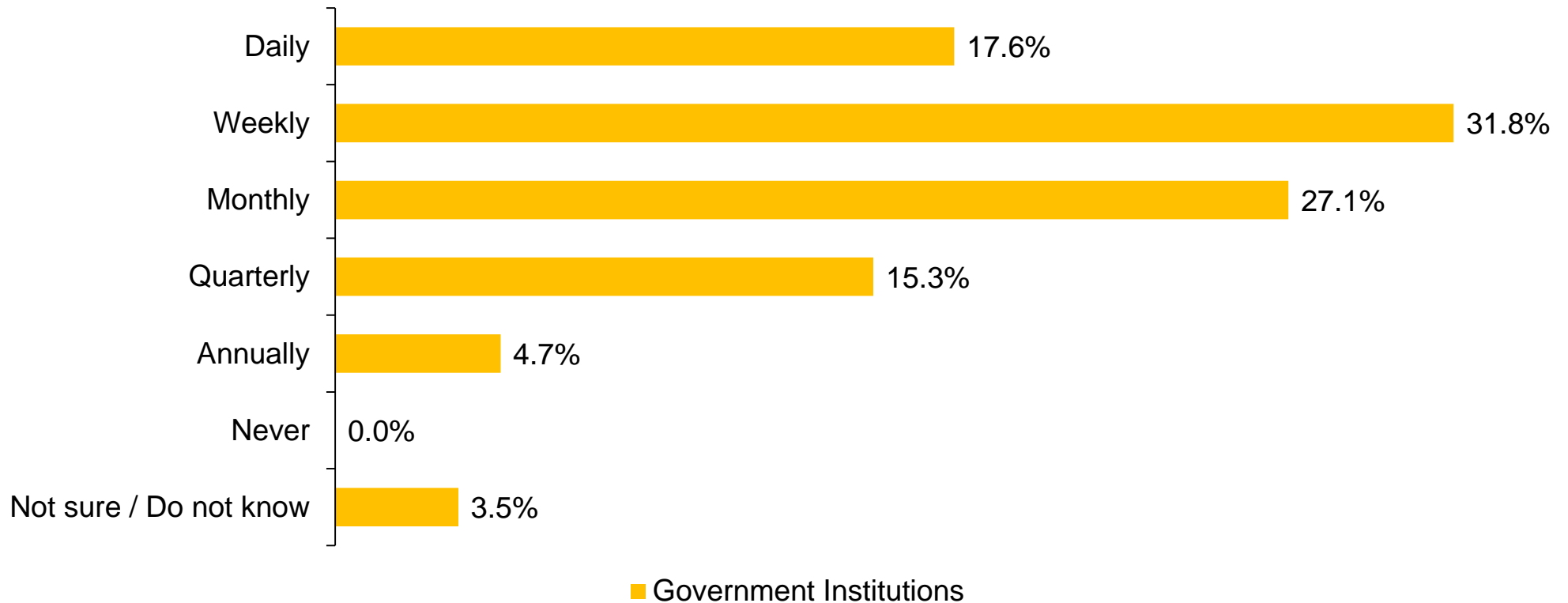


# Percent of central government institutions have resources for updating their website who are:



- ▶ Only 40% of government institutions have a fully dedicated resource(s) for updating their websites, meaning that there are high chances of 60% of the websites having static data for a period of time.
  - ▶ This suggests that there is a time lag between the occurrence of activities/initiatives and the communication of these activities/initiatives to end users of the websites - businesses and citizens.

# Average frequency of central government institutions updating their websites



- ▶ Approximately 50% of websites are updated every week;
  - ▶ with the remaining 50% of websites having static data with time lags from one month to one year.

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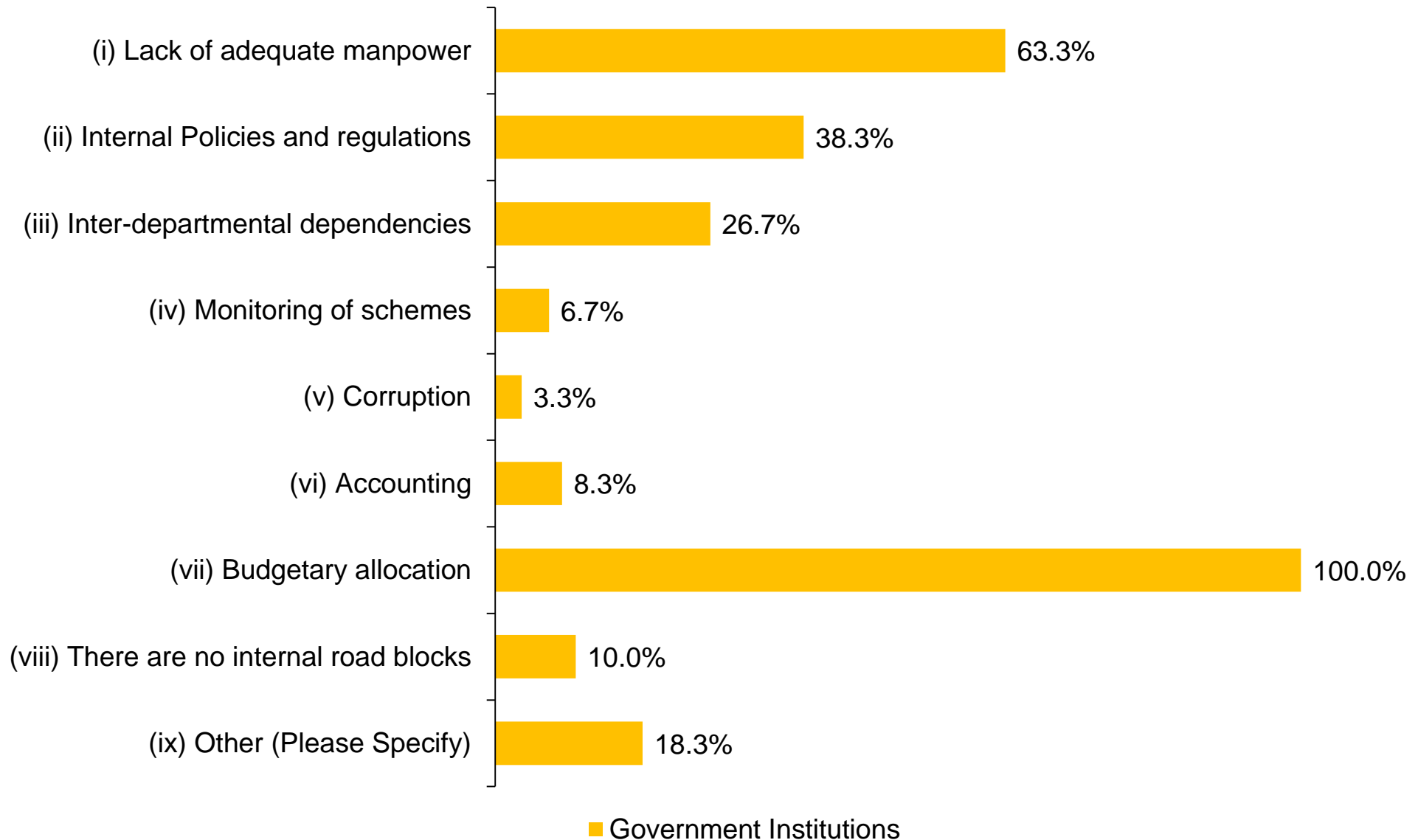
# Average frequency of central government institutions updating their websites

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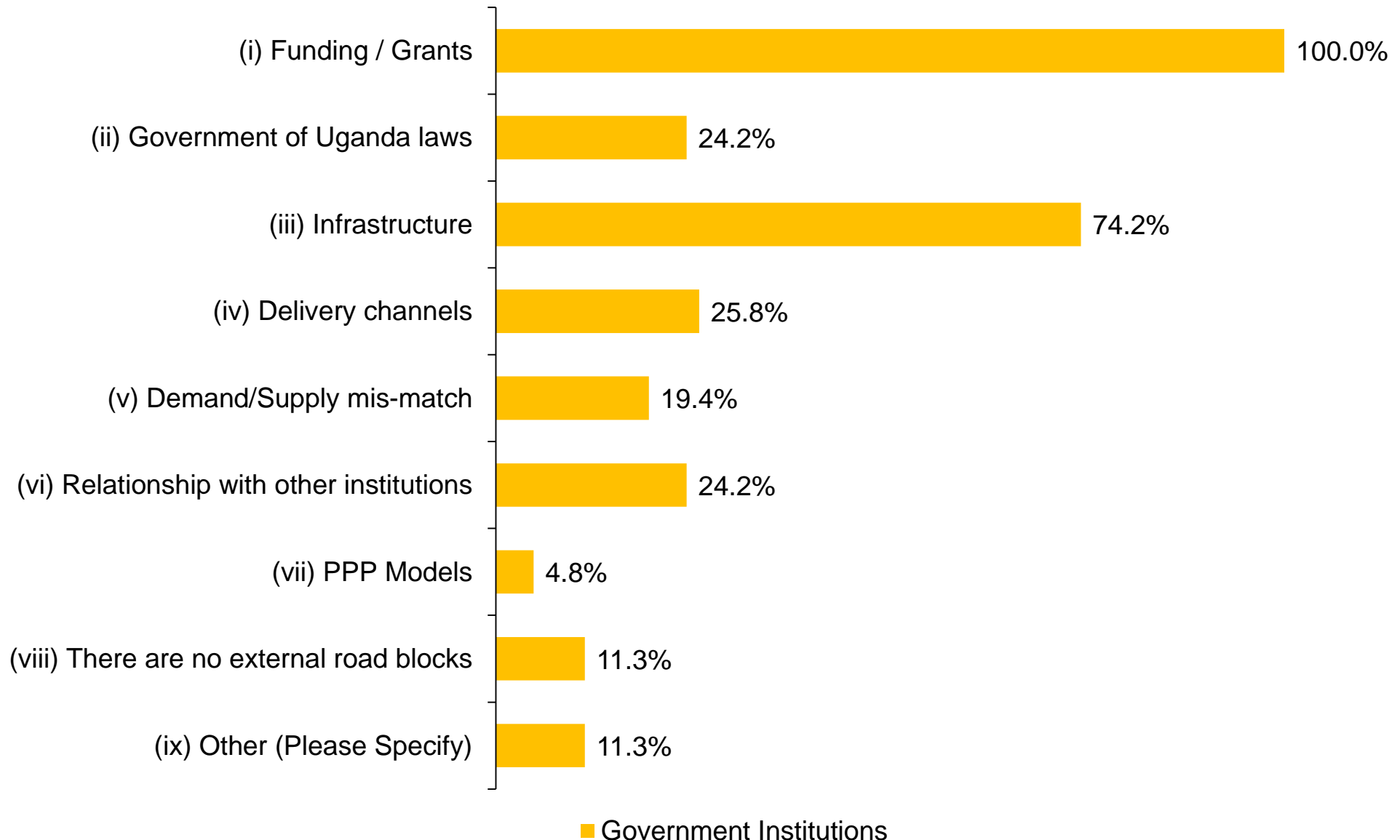
## Our perspective

- ▶ The results imply that most websites maintained by government institutions are primarily for basic information communication and not for transactions with businesses and citizens.
- ▶ We can infer that most processes/interactions between government and businesses and citizens are paper-based.
- ▶ This correlates with the fact that less than 40% of staff in government institutions have an assigned computer and have access to the internet.
- ▶ For e-Government to develop to the next stage of maturity, the percentage of staff with computers and access to the internet needs to double in the short term, and business processes need to be re-engineered and computerized.
- ▶ Subsequently, the majority of transaction related processes with businesses and citizens need to be conducted online via the institutions websites.

# Central Government institutions with existing internal road-blocks in implementing E-Governance initiatives

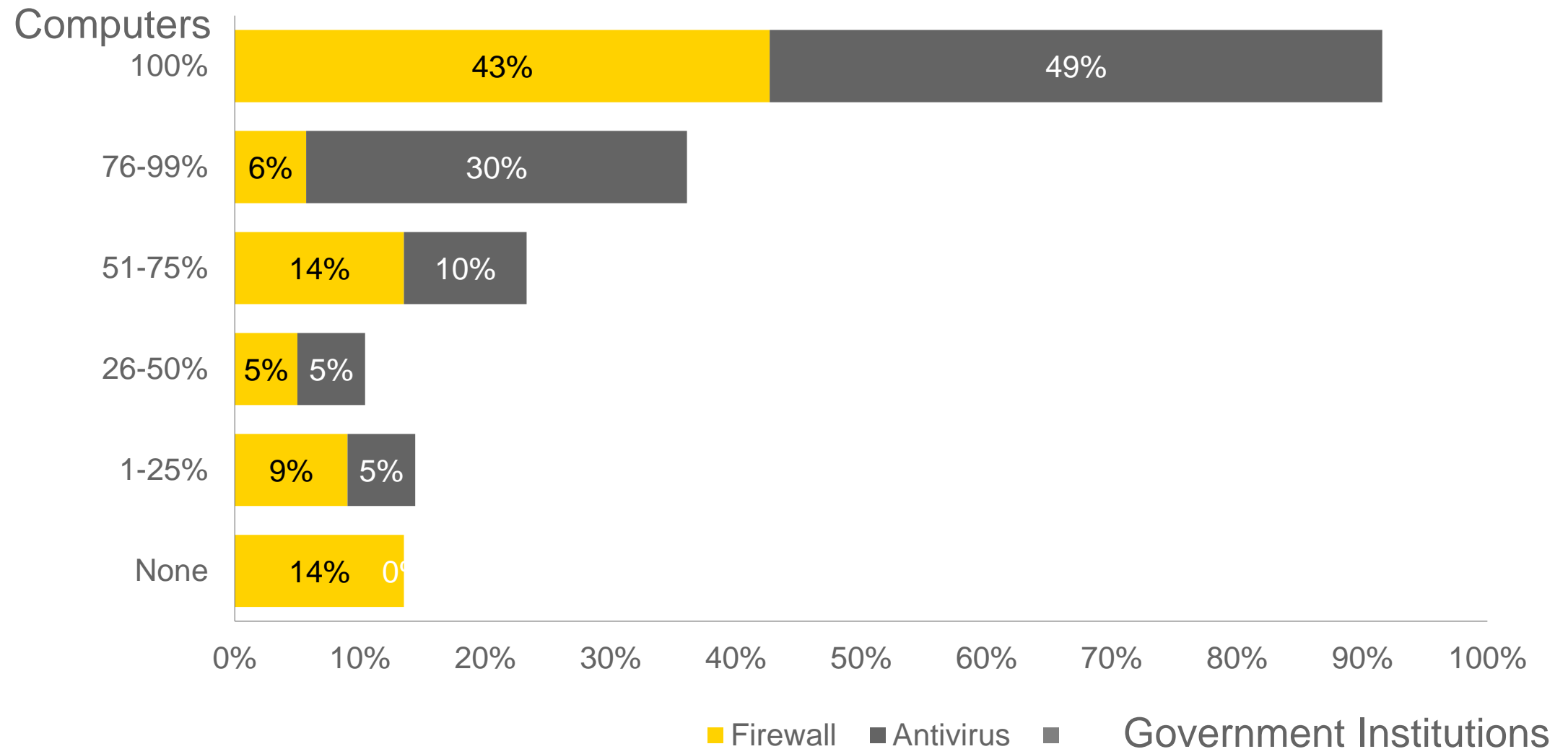


# Central Government institutions with existing external road-blocks in implementing E-Governance initiatives



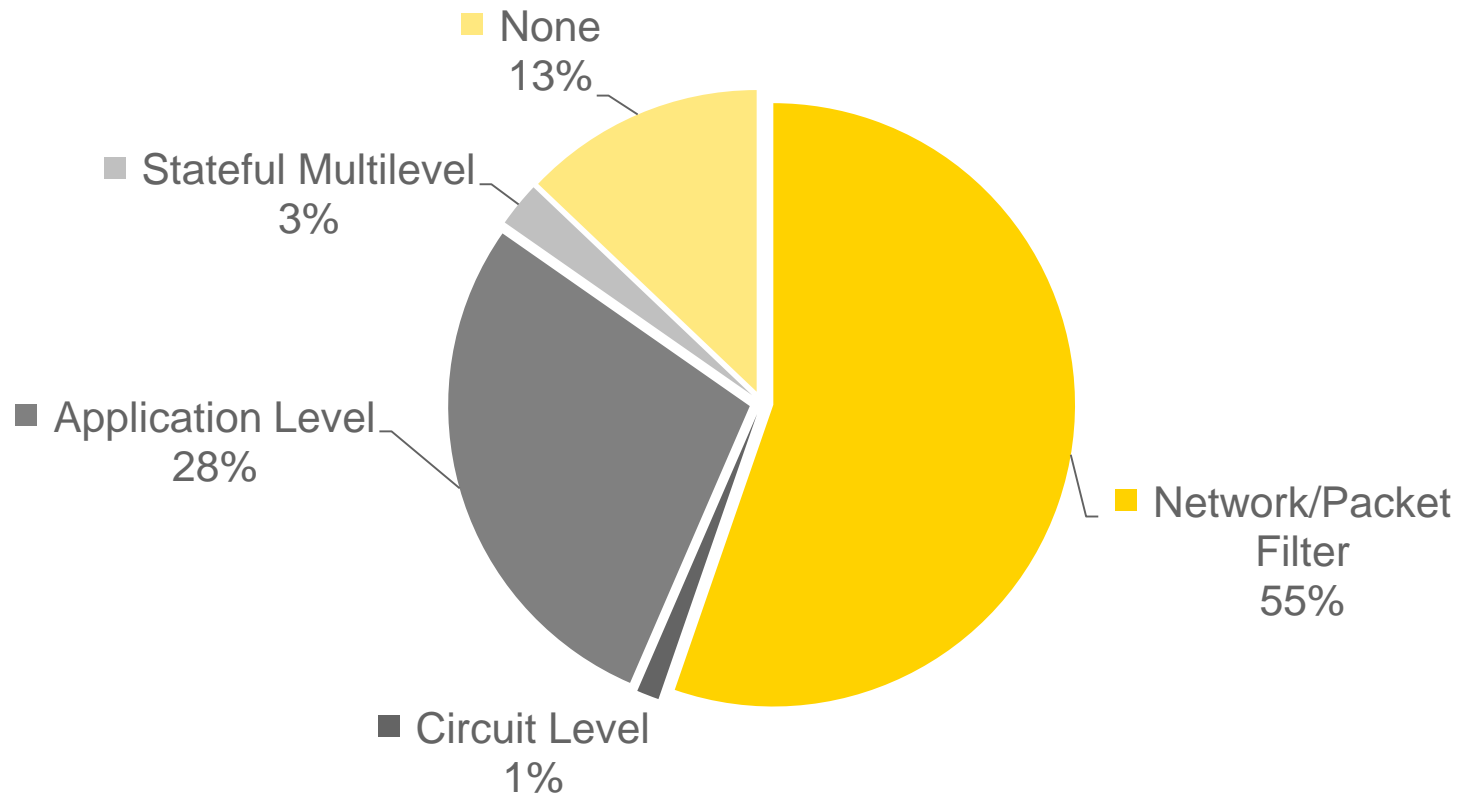
# Percentage of central government institutions' computers that are protected by a firewall and antivirus

Level of government computer protection using firewall and antivirus



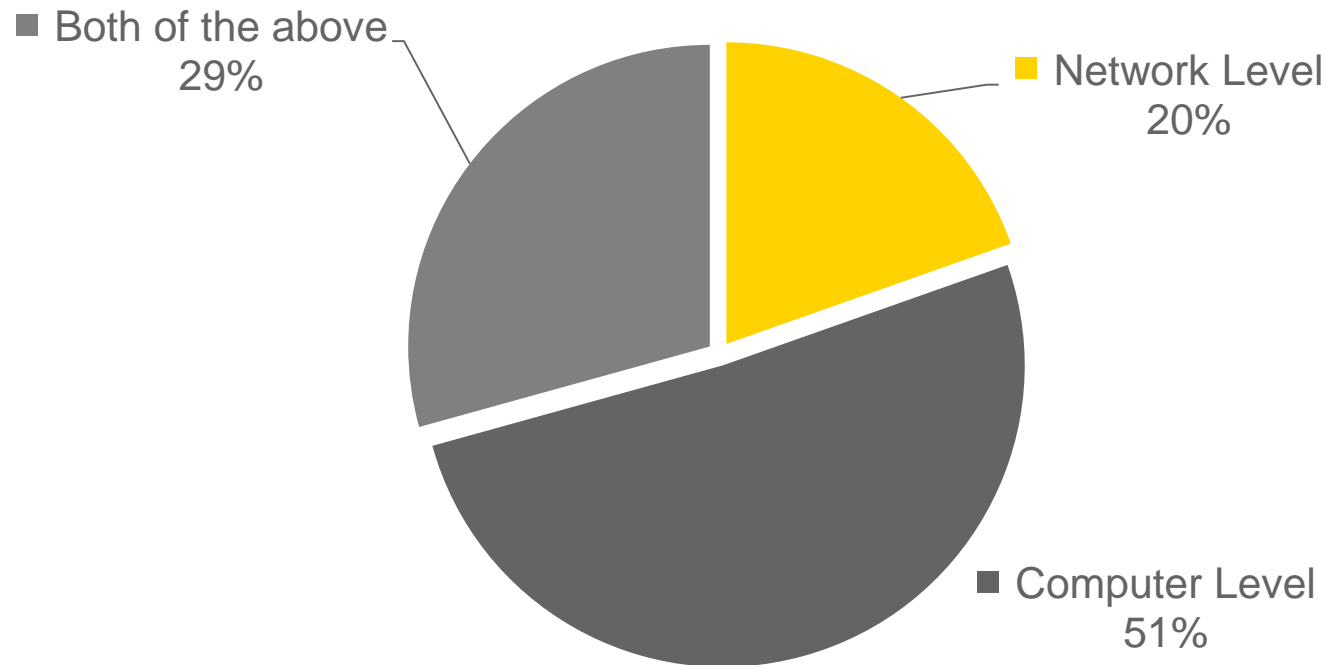


# Percentage of central government institutions' computers that are protected by a firewall by type of firewall



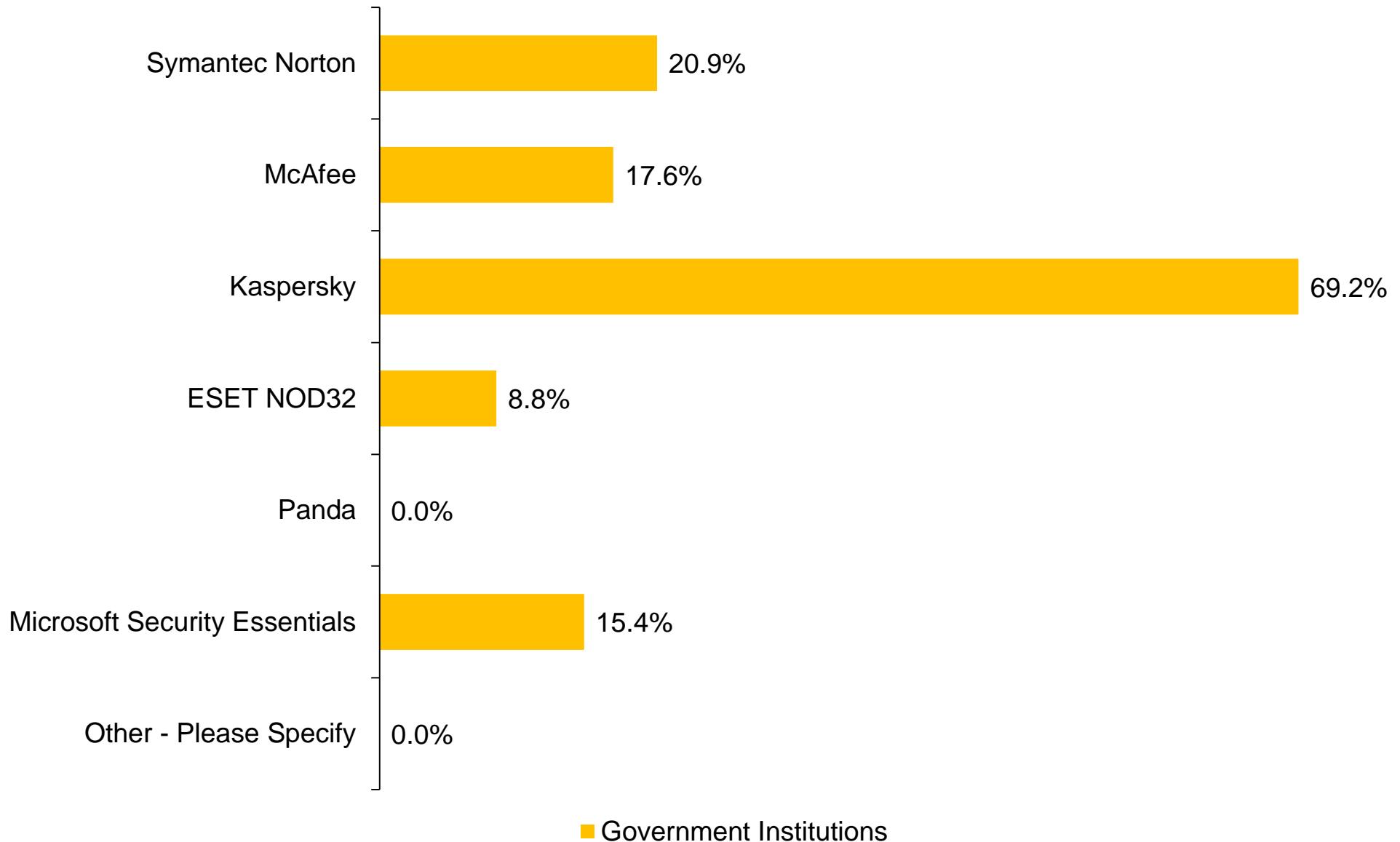
- ▶ 55% of the government institutions' computers are protected by a Network / packet filtering firewall.
- ▶ Of concern are the 13% of institutions with no form of firewall protection.

# Computers in central government institutions that are running antivirus by form of antivirus protection



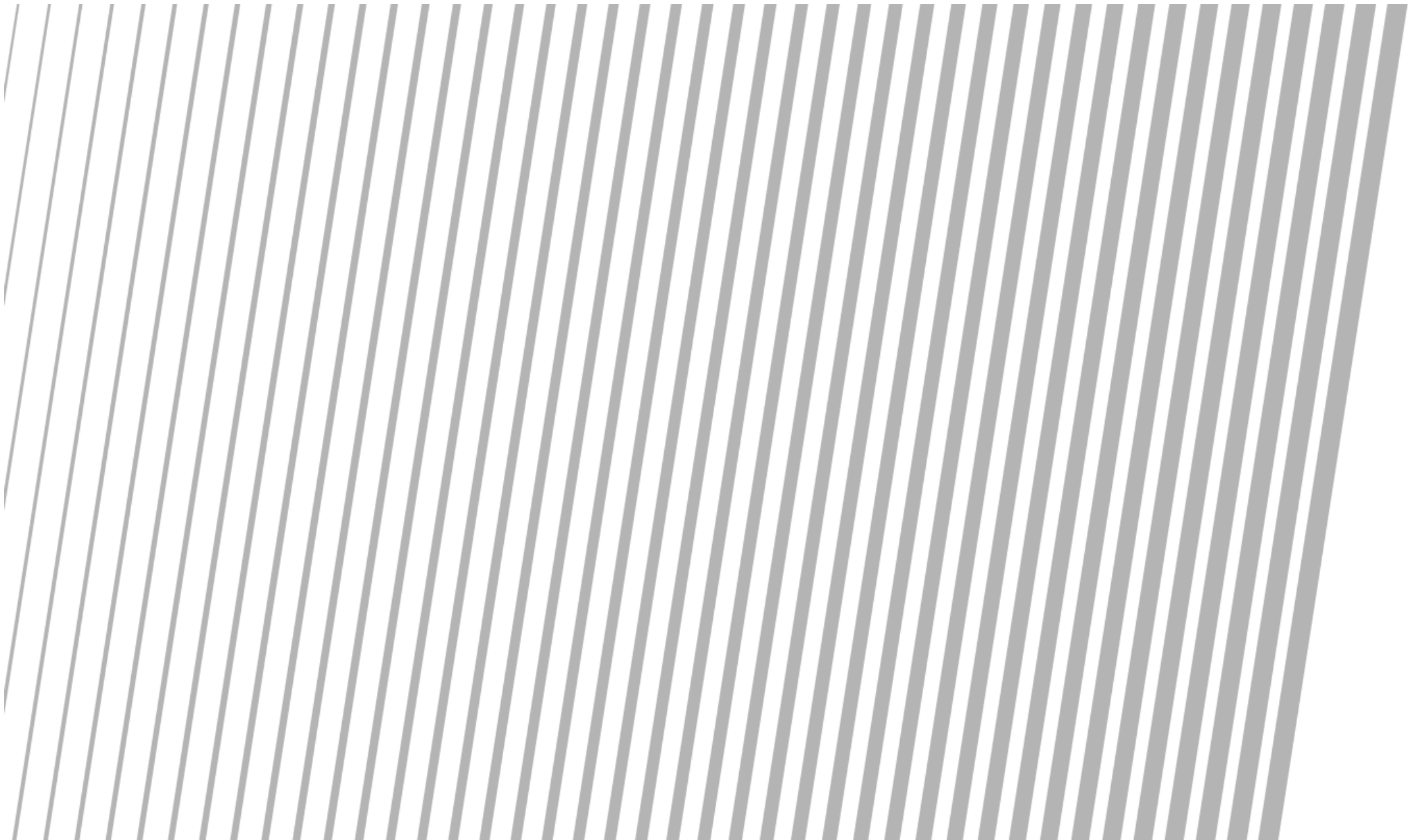
- ▶ 100% of the respondents indicated that the computers in their institutions are either protected by a computer level anti-virus program, a network level anti-virus program or both.
  - ▶ This is an encouraging statistic, with the basic security for government data on computers being provided for by all respondents.

# Computers in central government institutions that have an antivirus program by type of Anti-Virus Software

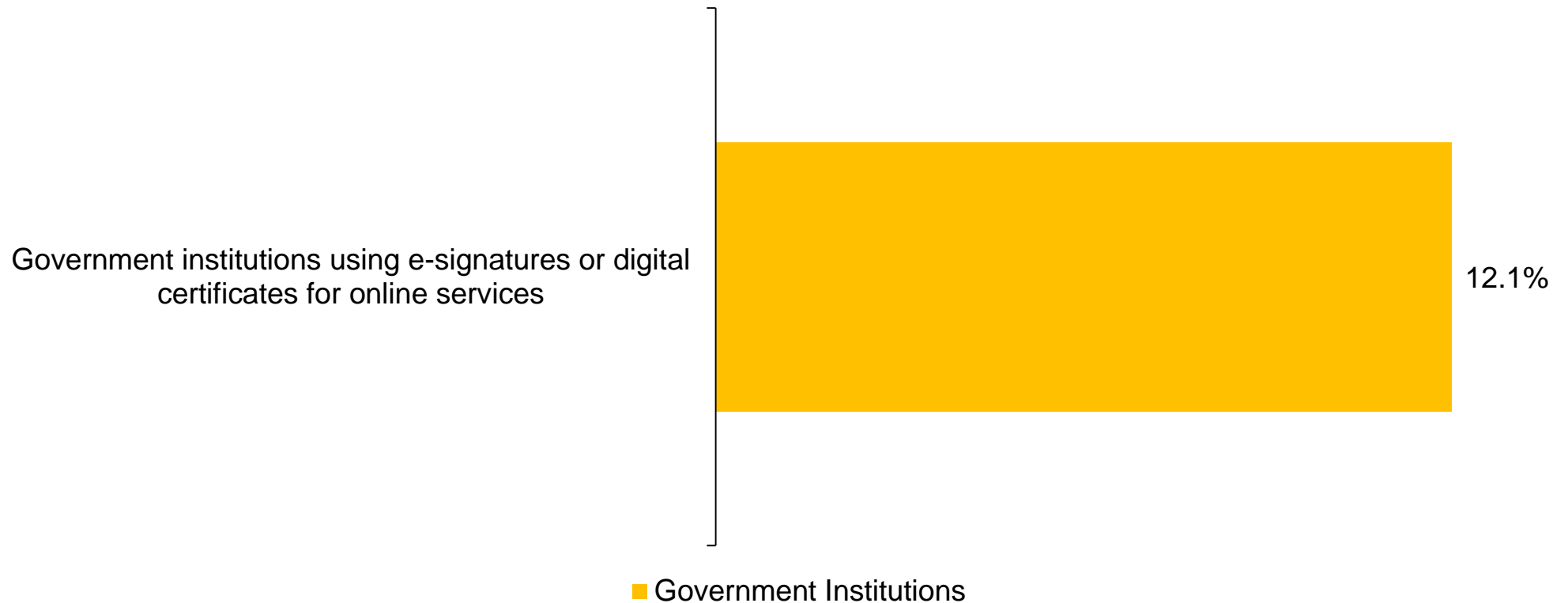


# Information Security

## Uganda E-Government Survey 2012

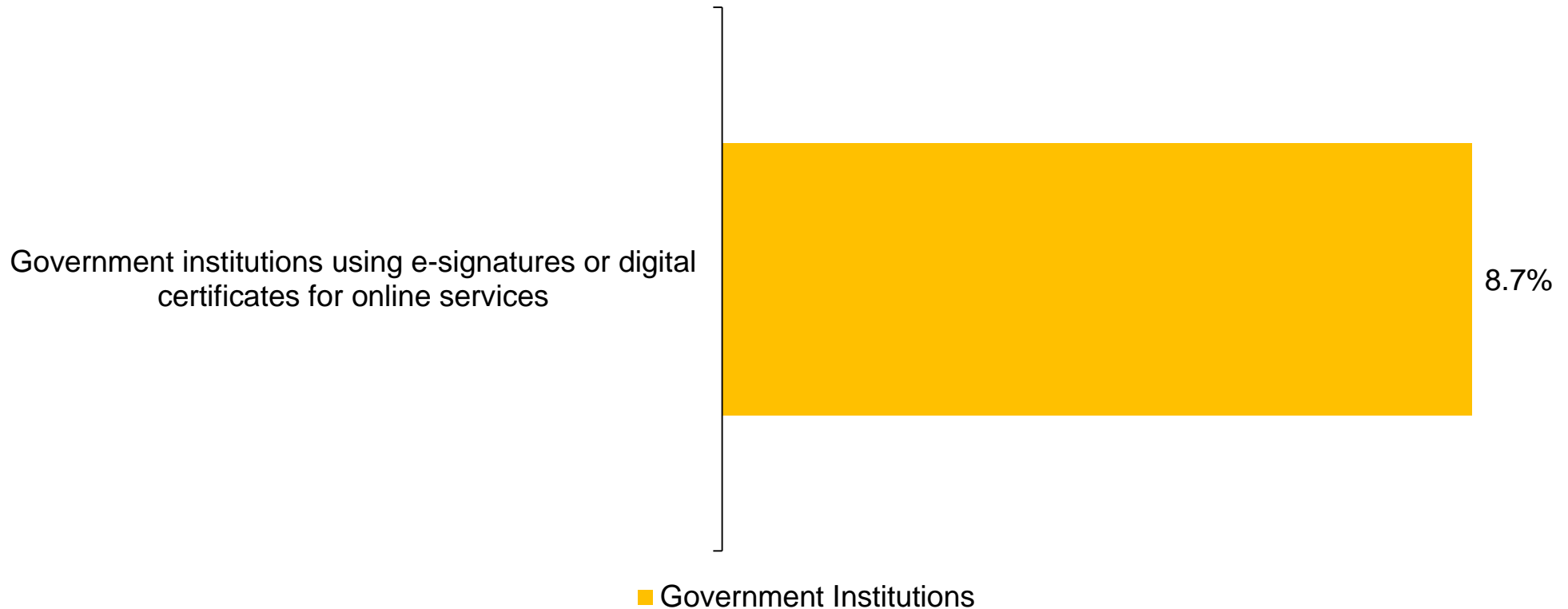


# Percentage of central government institutions using e-signatures or digital certificates for online services



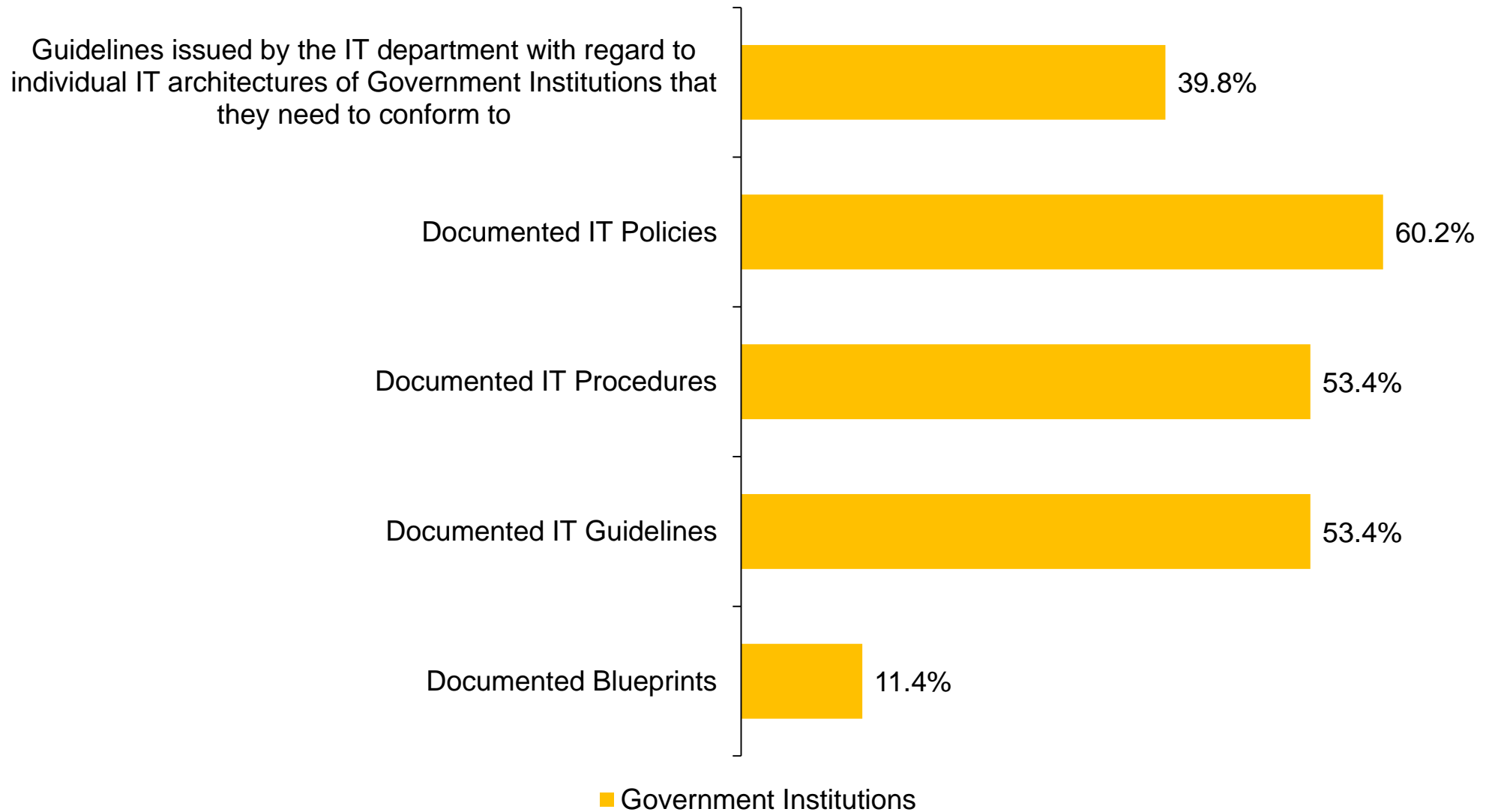
- ▶ Only 12% of respondents indicated that their institutions use e-signatures or digital certificates for online services.

# Percent of central government institutions that have vendors supply them with digital certificates



- ▶ There are currently 8 vendors supplying digital certificates to government. It is important for government institutions to:
  - ▶ Pay special attention to third parties with access to sensitive organizational data.
  - ▶ Understand what data is sent to third parties, how it is sent and if the transmission mechanisms are secure

# Percentage of central government institutions with documented IT policies and procedures



# Disaster Recovery and Business Continuity management

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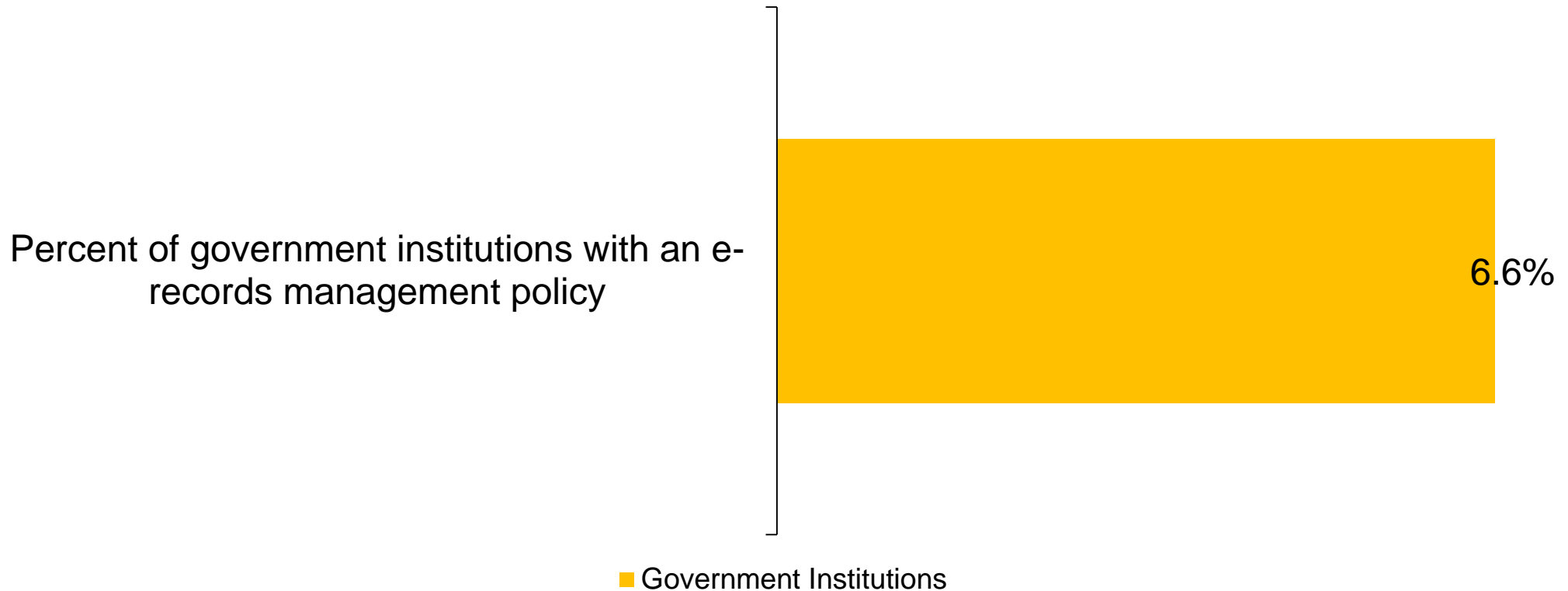
## Our perspective

### Recommendations

- ▶ Prepare for and secure business continuity plans that anticipate high-impact, low-frequency events, and determine which are integrated into a broader risk management framework that focuses on protecting institutions from catastrophic loss.
- ▶ Assess whether the business continuity plan has the right level of maturity in light of the emerging trends and new technologies.
- ▶ Test institution's business continuity plans frequently to help validate their resiliency in practice. The more complex the scenarios that are tested, the better the coverage of the test.
- ▶ Solicit the support of senior management for implementing business continuity programs.

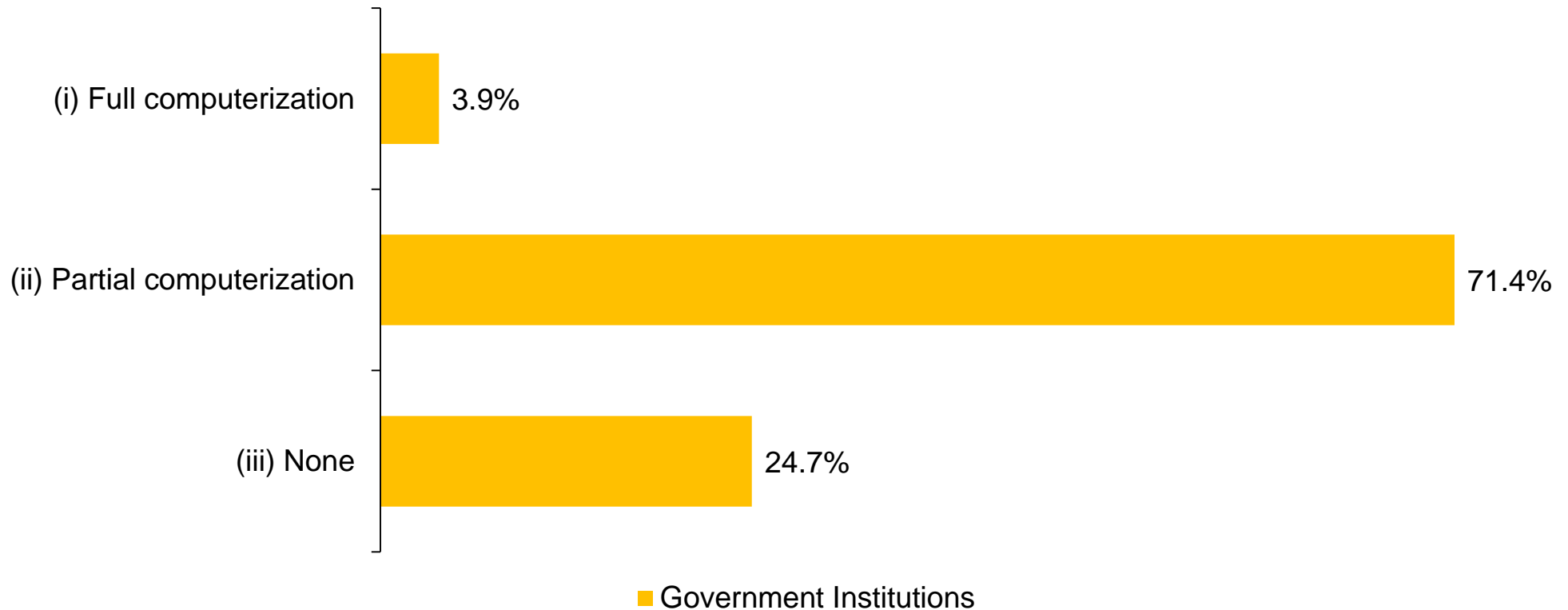


# E-Records management in central government



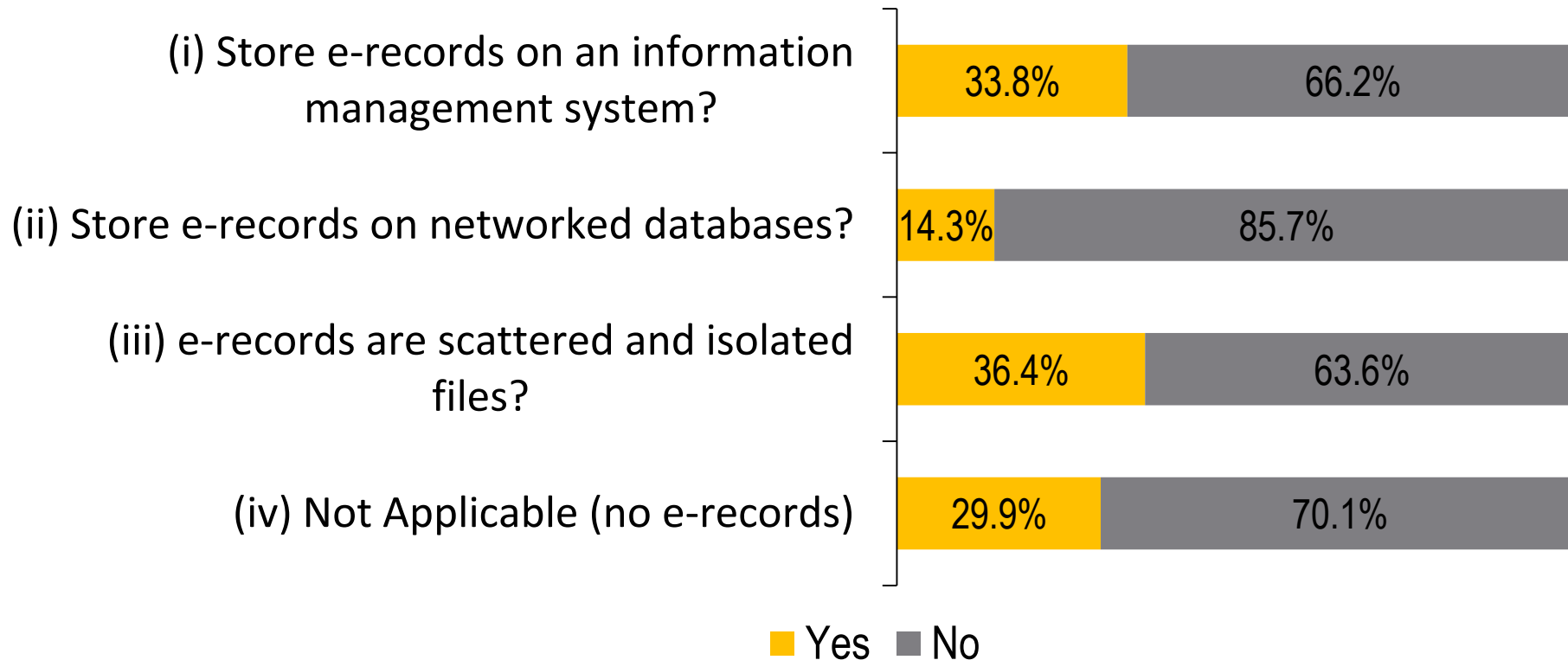
- ▶ 7% of government institutions have an e-records management policy.
- ▶ Government of Uganda does not have a policy or legal framework governing the management of e-records by Government Institutions. The policy and legal framework need to be developed and implemented.

# Percent of central government institutions with records computerization



- ▶ Less than 4% of central government institutions have fully computerized their records management.
- ▶ For e-Government to be successful, all government institutions need to fully computerize their records management.

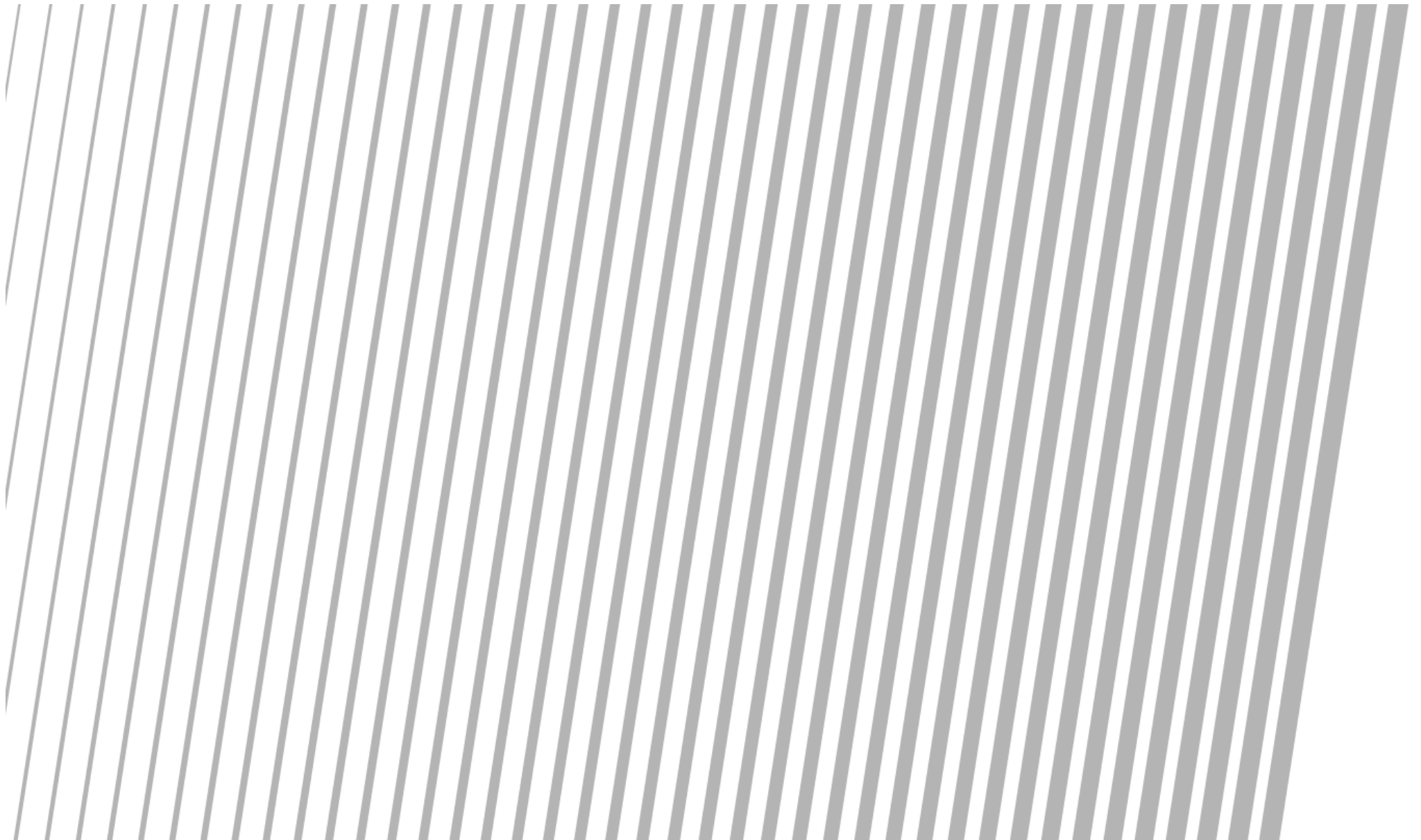
# Average level of e-records management proficiency in government institutions



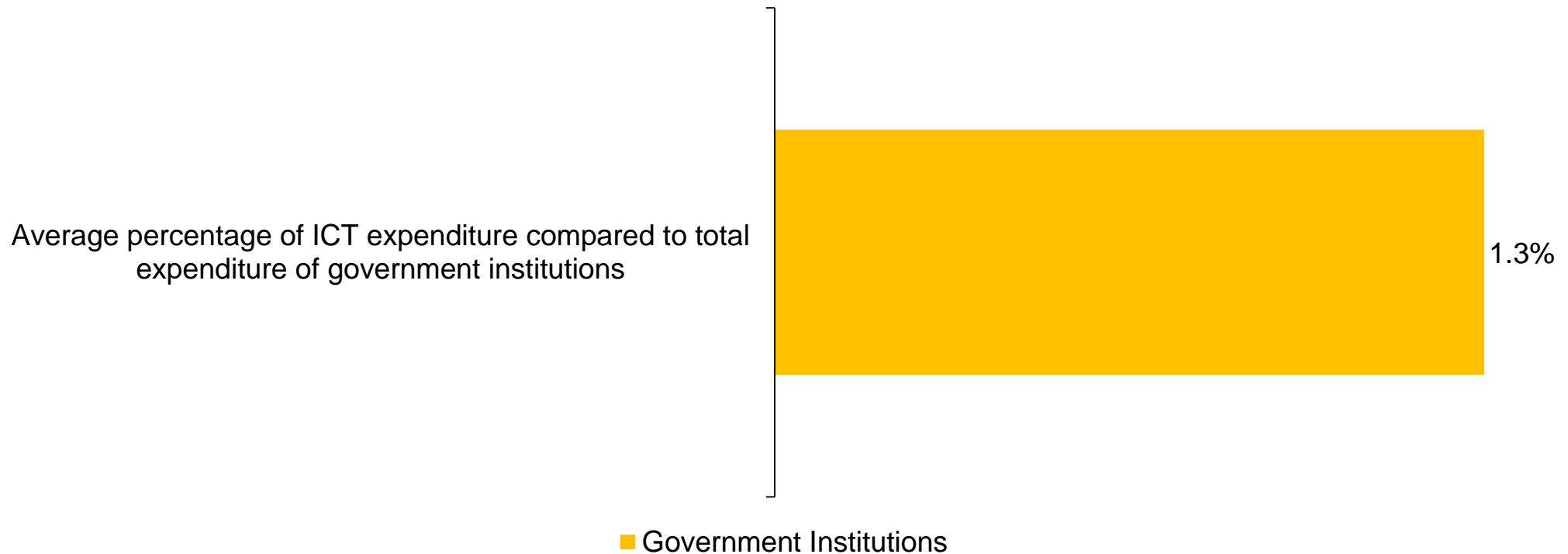
- ▶ The majority of central government institutions have low levels of e-records management proficiency; with
  - ▶ 30% of respondents having no e-records and 36% having e-records that are scattered and isolated files

# ICT Spend

## Uganda E-Government Survey 2012

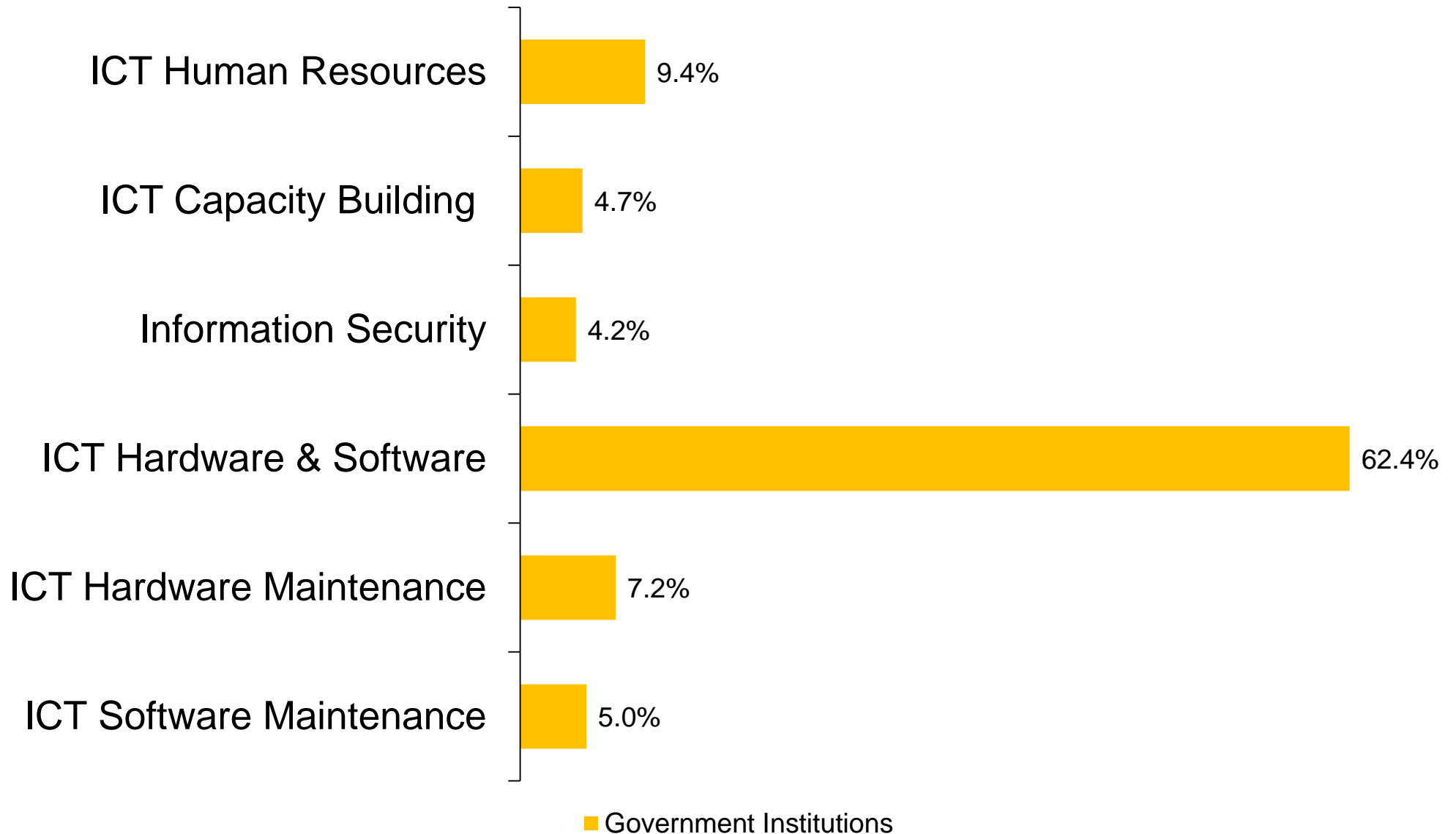


# Average percentage of ICT expenditure compared to total expenditure of central government institutions



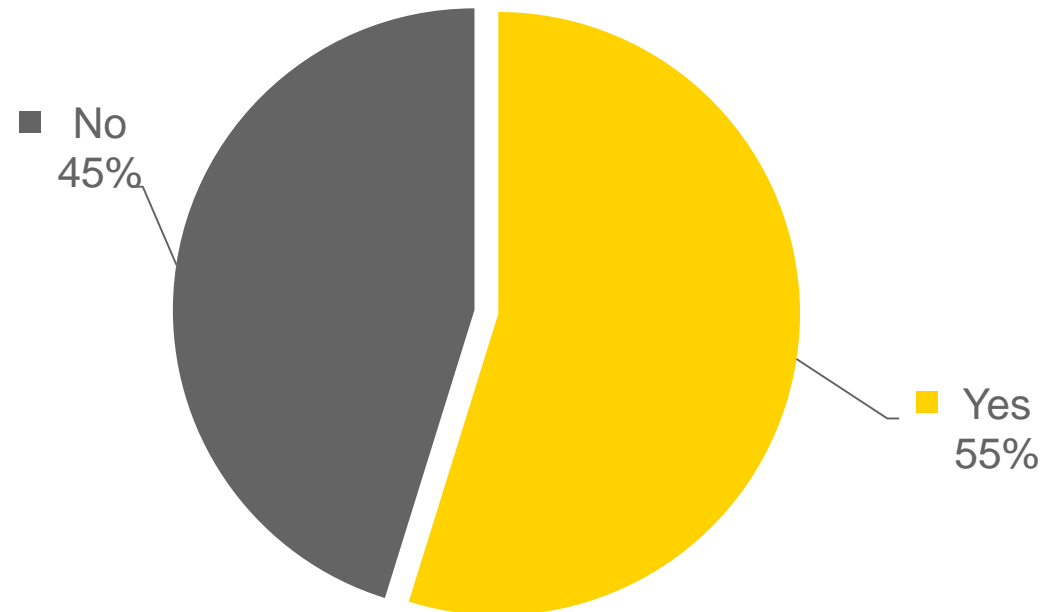
- ▶ The average percentage of ICT expenditure compared to total expenditure of central government institutions is 1.3%. This reflects the low priority that is accorded to ICTs within central government institutions.
- ▶ The National Budget allocation to the ICT sector for FY12-13 is **0.1%**.

# Average percentage of major ICT budget lines expenditure compared to total



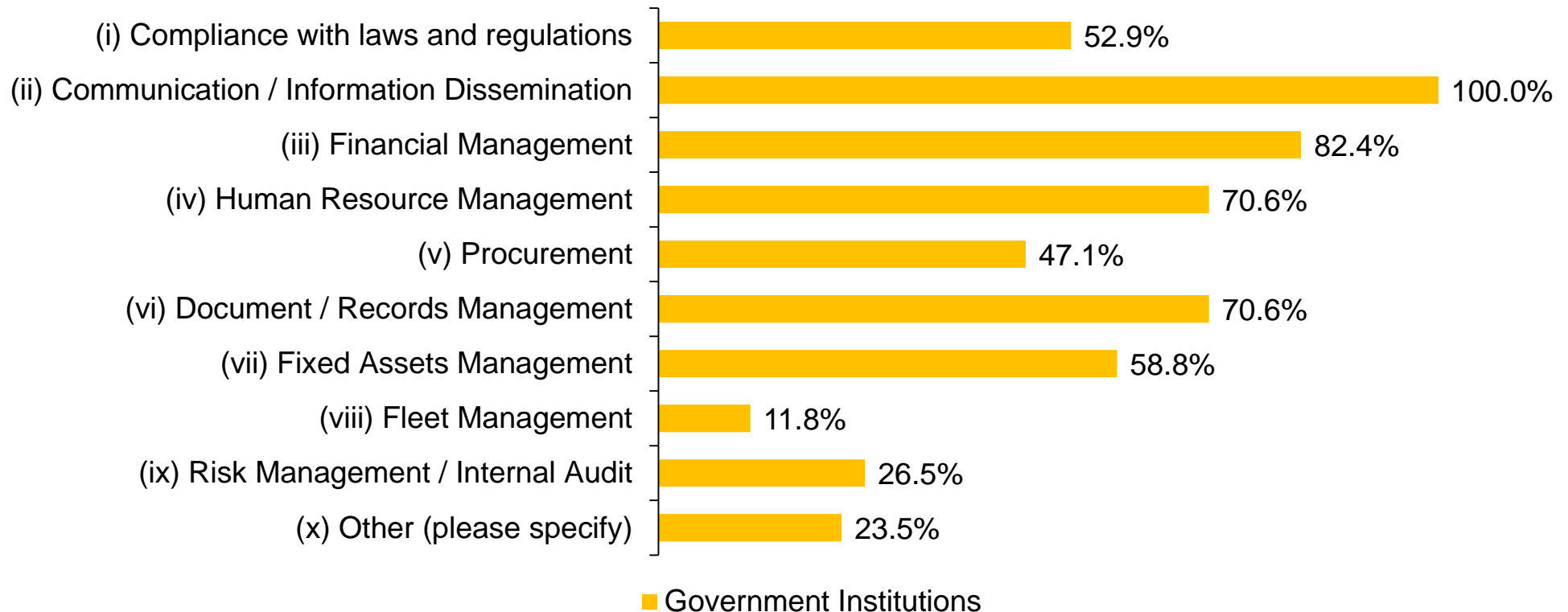
# Percentage of Government Institutions with IT Strategic Plans

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- ▶ 55% of the respondents have a documented IT strategic plan.
  - ▶ For e-Government to be successful, all government institutions should have IT strategic plans that are geared towards enabling the institutions to provide high quality online service delivery that is aligned to the business objectives of the institutions.

# Percent of internal functions supported by central government institutions' IT Strategic Plan

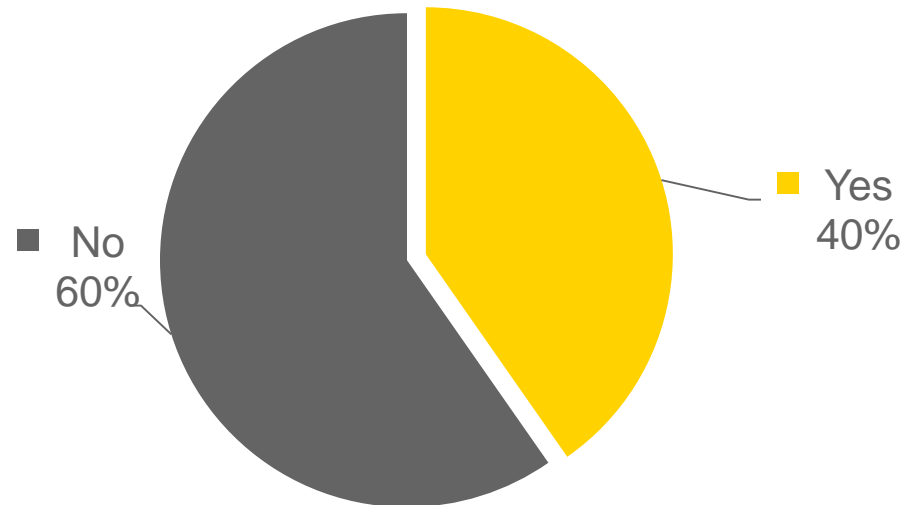


- ▶ The IT strategic plans in government institutions mainly address communication and financial management.
- ▶ Only 9 central government institutions indicated that their risk management programs are addressed by their IT strategic plans. This indicates that few institutions recognize the importance of an IT risk management program.



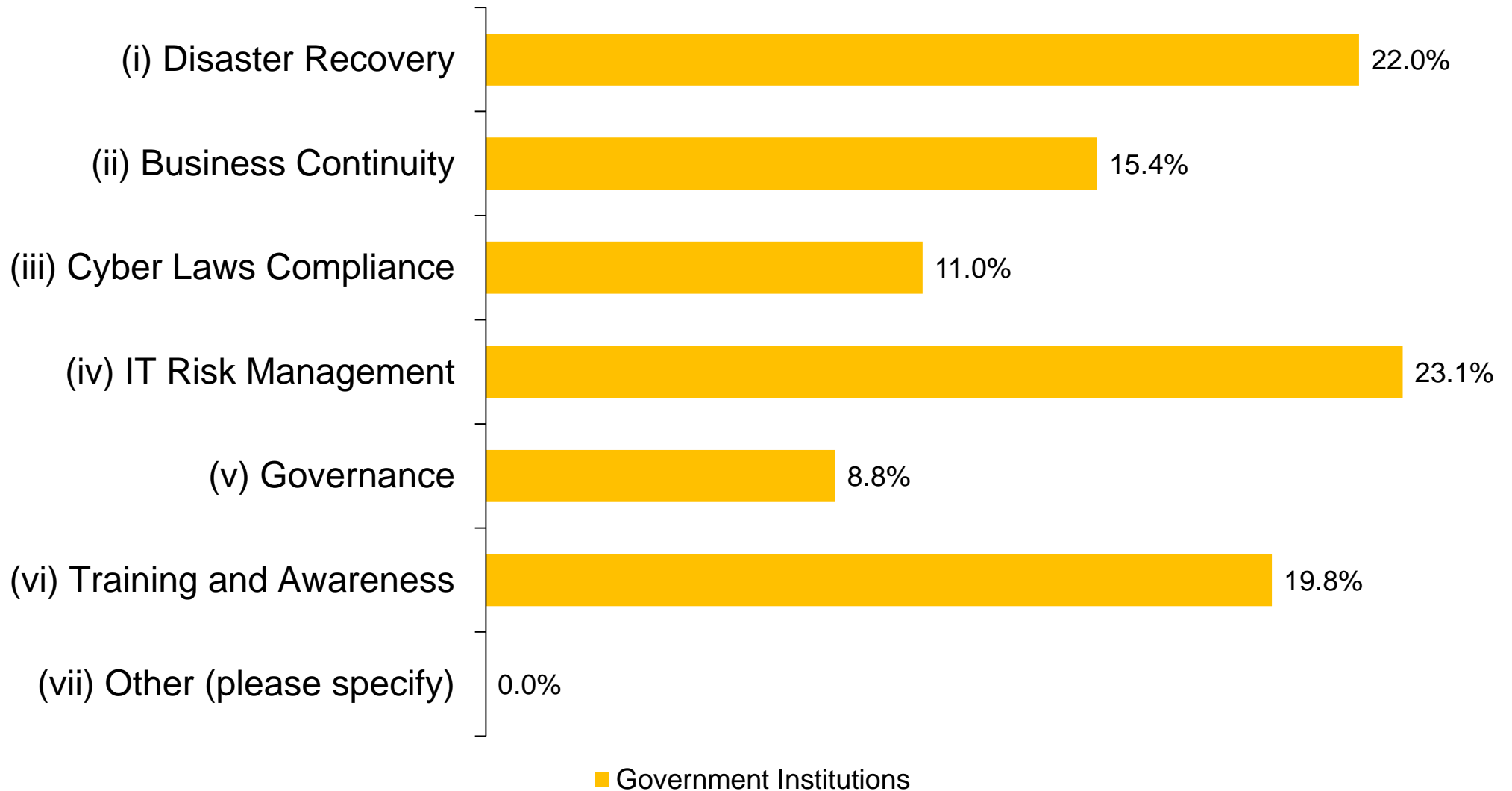
# Percent of central government institutions with an information security strategy

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- ▶ Only 40% of the respondents have a documented information security strategy.
- ▶ 60% of central government institutions need to develop an information security strategy, while the 40% with such strategies need to revisit their strategies to ensure that they:
  - ▶ conform to the current risk landscape.
  - ▶ address the entire IT risk universe in government institutions.

# Extent to which the IT Strategic Plan supports government institutions' business objectives

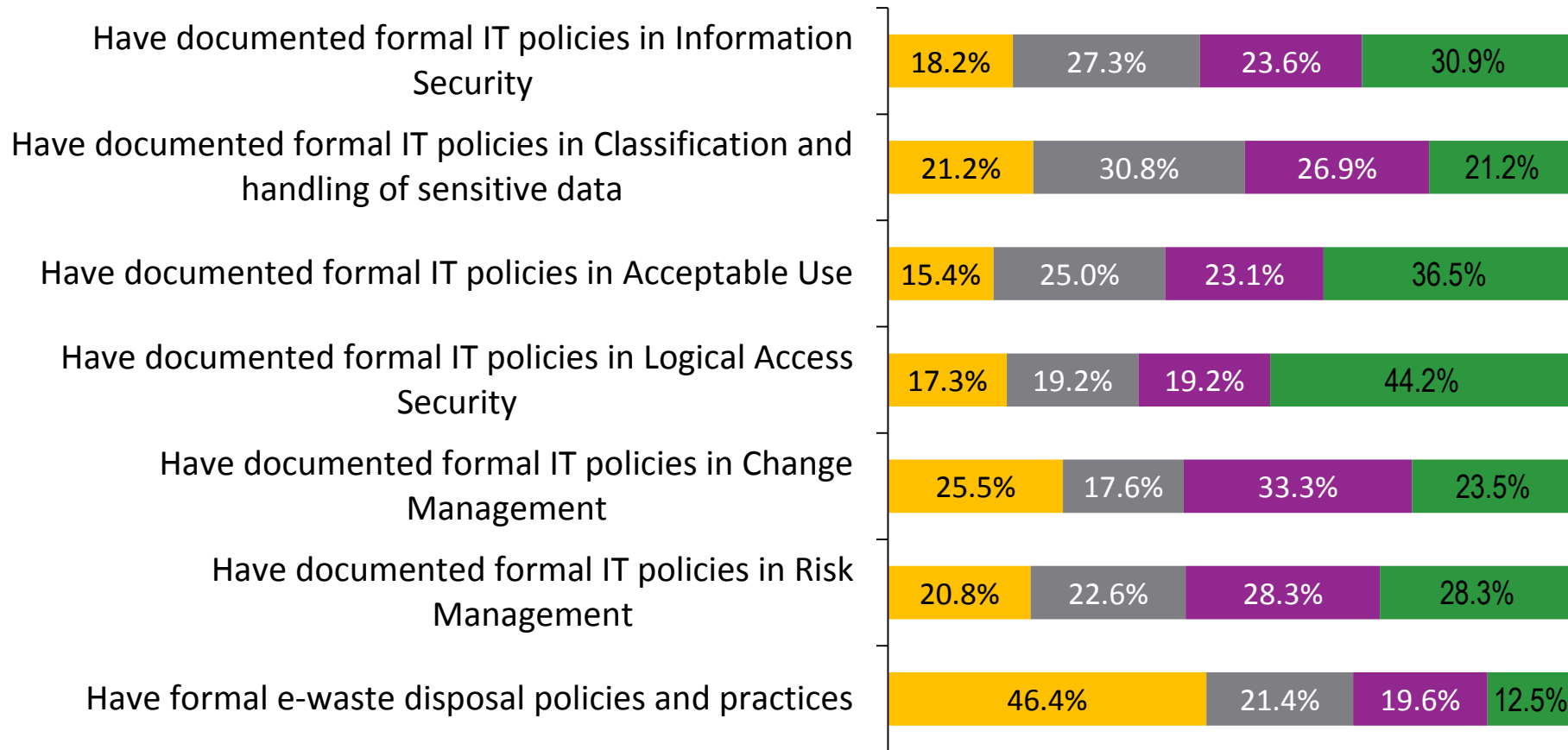


# Average technical specifications for the purchase of computers by government institutions

Item Description	Unit of Measure	Value
Random Access Memory	Gigabytes (Gb)	2.3
Processor speed	Gigahertz (GHz)	2.3
Hard disk space	Gigabytes (Gb)	294

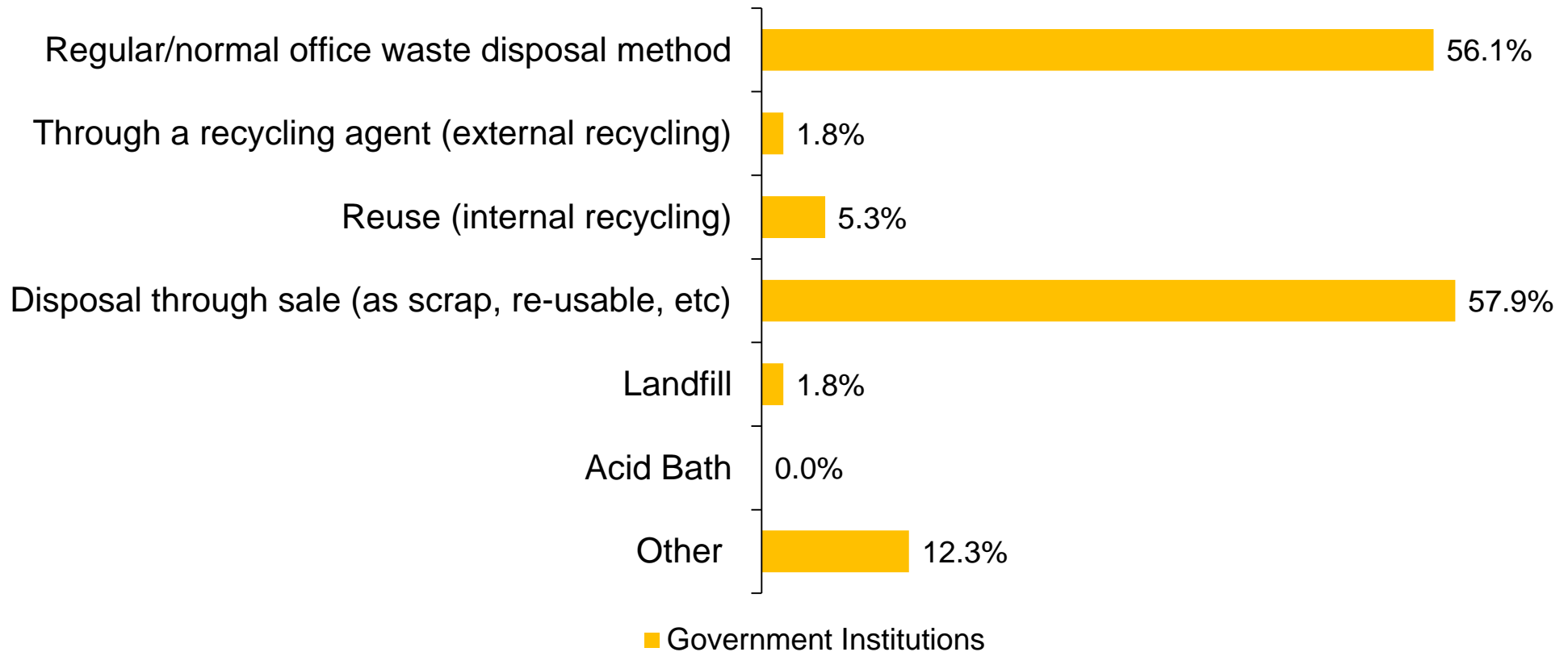
- ▶ Only 57% of government institutions have a policy for the purchase of computers that specifies minimum technical specifications for RAM, Processor Speed and Hard Disk Space.
- ▶ With the introduction of further e-Government initiatives, the average RAM of 2.3GB for the current average computer in central government institutions will be inadequate.
- ▶ A minimum of 4GB RAM for all new computers purchased by government should be observed until a policy outlining the standard requirements for RAM, processor speed and hard disk space are developed, communicated and implemented.

# Percentage of government institutions that have documented formal IT policies.



- (1) No formal policies and practices
- (2) Drafting formal policies and procedures
- (3) Planning to draft formal policies and procedures within the next 12 months
- (4) Formal policies and practices in use

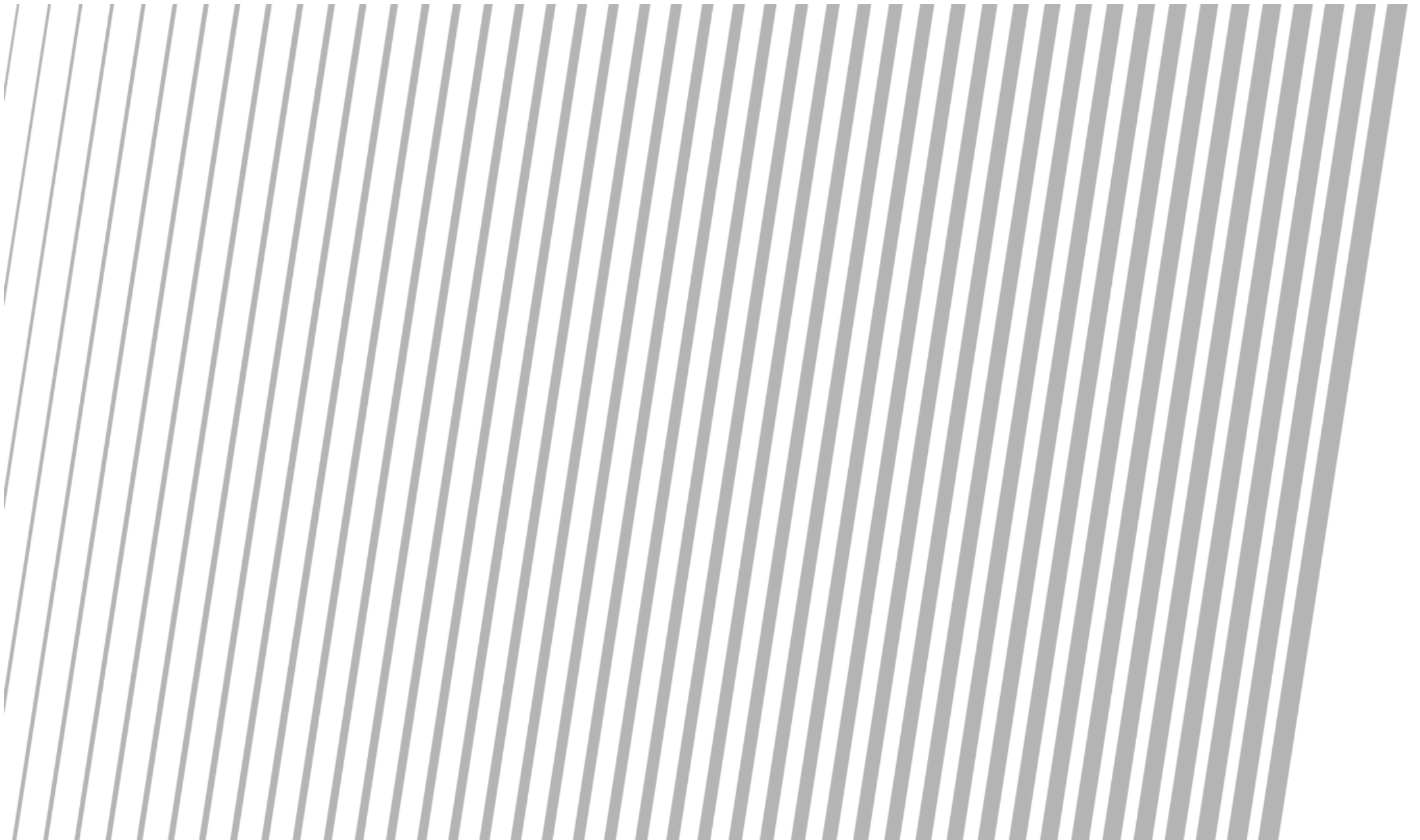
# Average manner in which government institutions dispose of e-waste



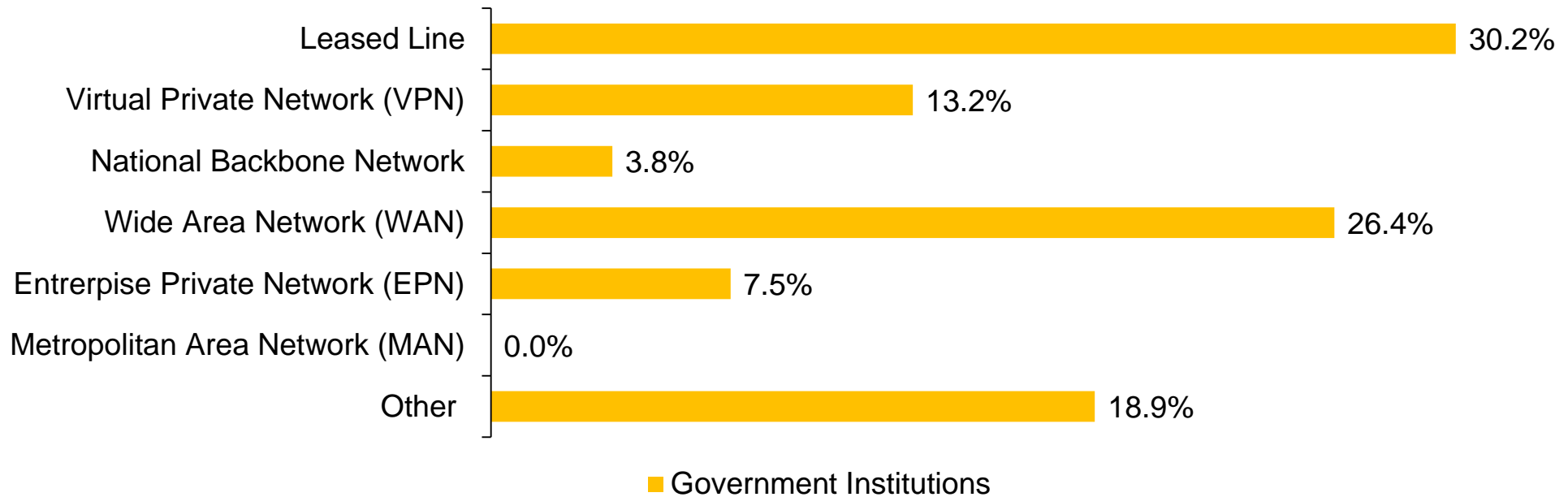
- ▶ The government needs to develop an e-waste policy; considering that the majority of institutions use regular waste and scrap sale disposal methods for dealing with e-waste.

# Organizational Network and Leased Lines

Uganda E-Government Survey 2012



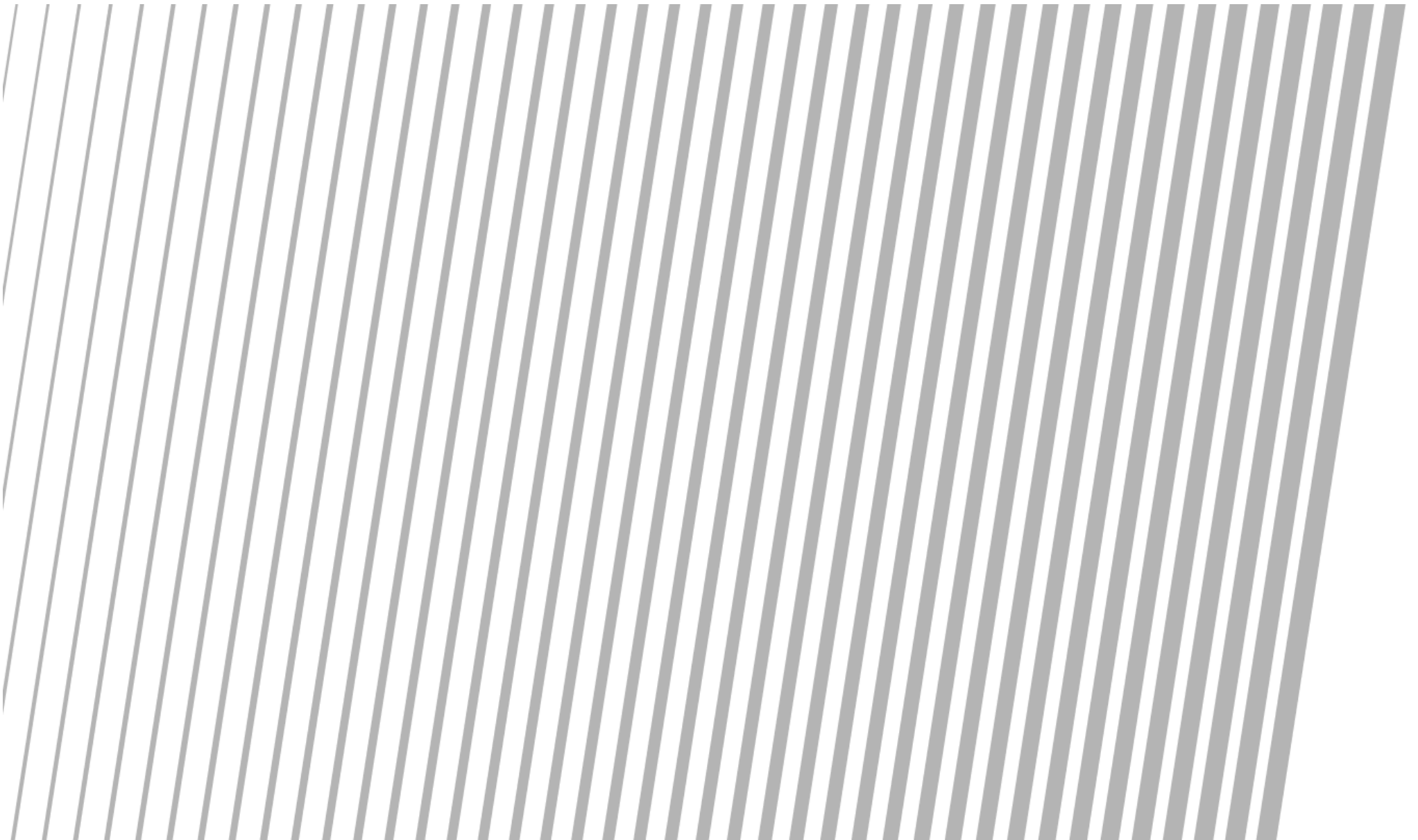
# Average manner in which offices of central government institutions are connected from an IT perspective



- ▶ That majority of central government offices are connected through leased lines and wide area networks.
- ▶ Only 4% of the respondents are connected through the National Backbone Network; rendering its development ineffective in the current state. 100% of government institutions should be connected via the National Backbone Network in order for the government to realize the benefits envisaged in the massive cost of setting up the infrastructure.

# ICT indicators on ICT Infrastructure and Access

Uganda E-Government Survey 2012





# ICT indicators on ICT Infrastructure and Access

Item Description	Value
Fixed telephone lines per 100 inhabitants	1.2
Mobile cellular telephone suscriptions per 100 in habitants	48.9
Fixed Internet subscribers per 100 inhabitants	0.3
Fixed broadband Internet subscribers per 100 inhabitants	0.1
Mobile broadband subscriptions per 100 inhabitants	1.1
International Internet bandwidth per inhabitant (bits/second/inhabitant)	No Data
Percentage of the population covered by a mobile cellular telephone network	No Data
Number of IT enabled services which are offered on mobile applications by Telecommunication Service Providers segregated by regional coverage	No Data
Fixed broadband Internet access tariffs per month: In UGX as a percentage of monthly <i>per capita</i> income	No Data
Mobile/cellular telephone prepaid tariffs per month: In UGX as a percentage of monthly <i>per capita</i> income	No Data
<i>(i) Average cost of mobile telephone prepaid tariff per minute in UGX</i>	240
Percentage of localities with public Internet access centres (PIACs)	No Data

# ICT indicators on ICT Infrastructure and Access

## Our perspective

- ▶ With only 1 person in every 100 people having a fixed telephone line or 1% of the population; there is a high likelihood that due to the infrastructure requirements for having a fixed telephone line, more and more people will use mobile phones to meet their communication needs due to the mobile nature of the modern workforce.
- ▶ E-Government initiatives should be therefore be geared toward developing mobile phone technology accessible platforms as opposed to focusing on using fixed telephone line technology.
- ▶ With a 51% mobile phone penetration rate, more than half of the population is ready to access e-Government services via the mobile phone.
- ▶ The majority of the fixed internet subscribers are mostly likely to be medium and large size businesses as well as government institutions. As noted, mobile broadband subscribers are 4 times the number of fixed internet subscribers and 12 times the number of fixed broadband internet subscribers.
- ▶ Consequently, the earlier recommendations for government to develop e-Government initiatives with mobile technology accessible platforms is sound.

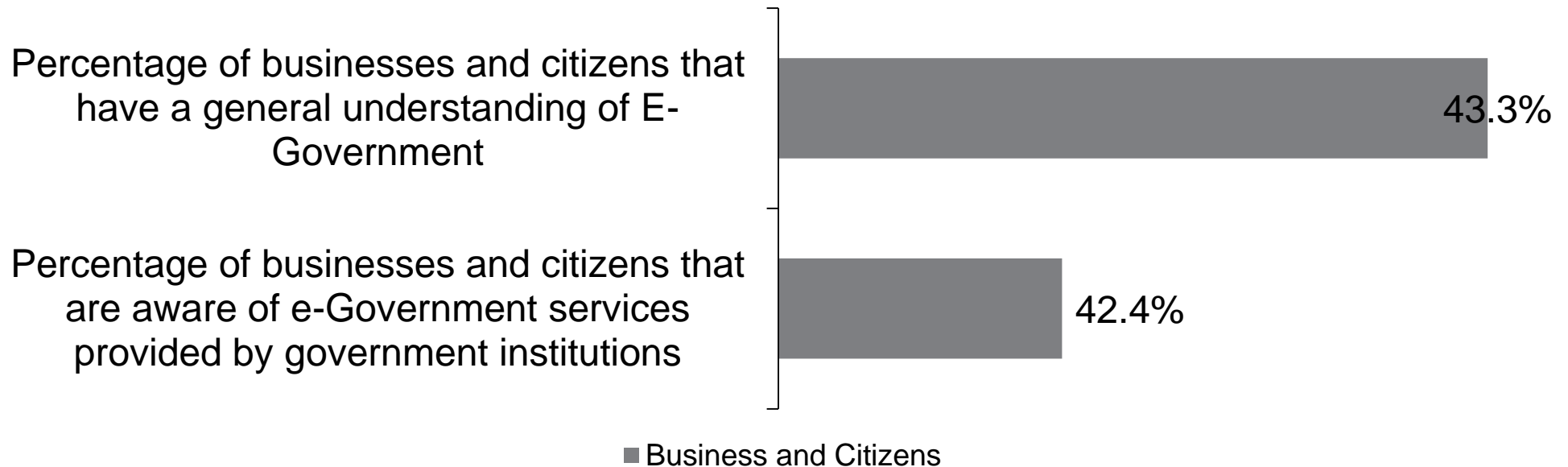


## Government to Businesses (G2B) and Government to Citizens (G2C) Indicators



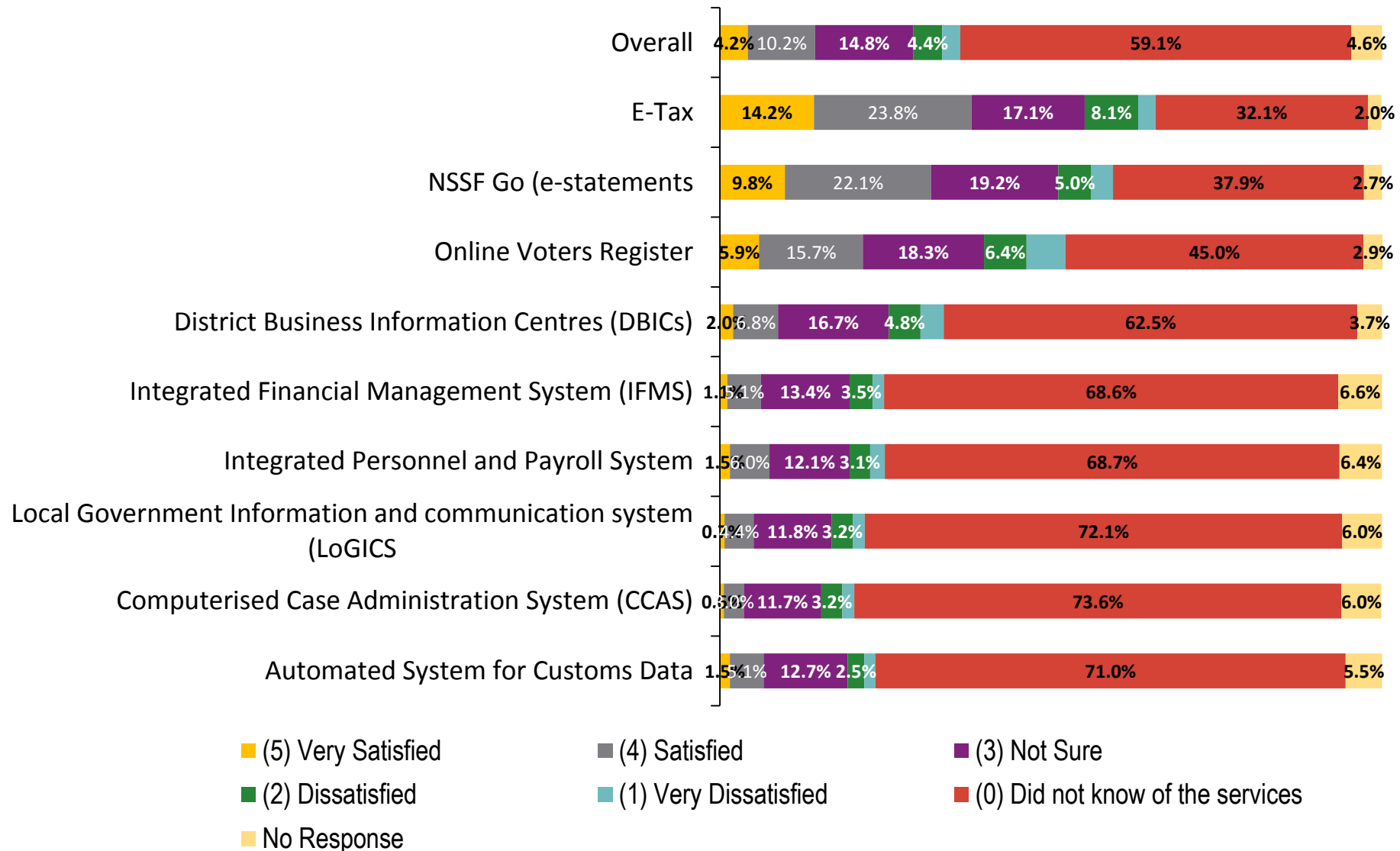
## Government to Businesses (G2B) and Government to Citizens (G2C) Indicators

# Understanding and awareness of e-government by Businesses and Citizens

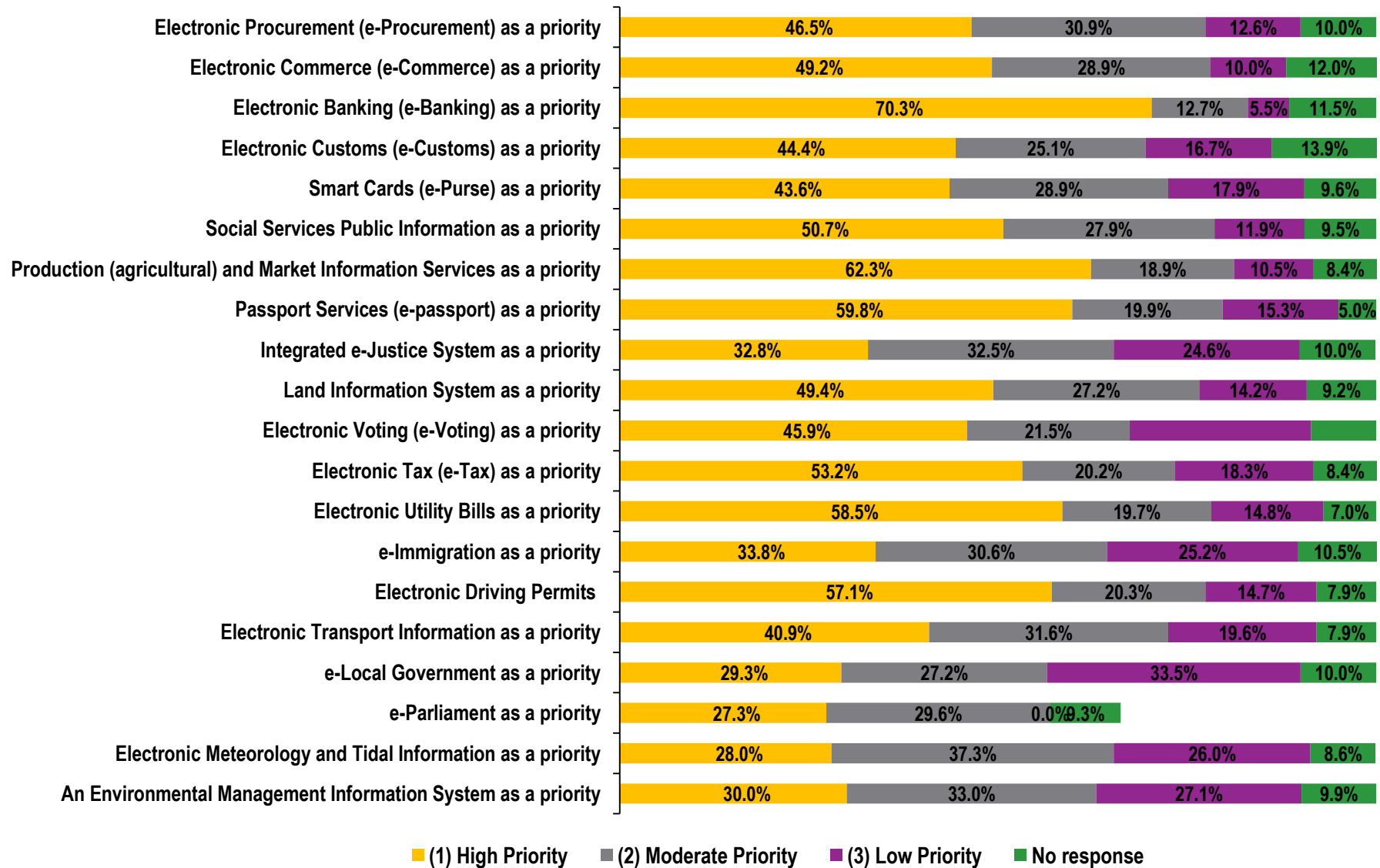


- ▶ Less than 50% of businesses and citizens have a general understanding of e-Government, with only 42% of them aware of the current e-Government services provided by government institutions.
- ▶ There is a need to conduct nation-wide sensitization of businesses and citizens on what e-Government is and of its benefits to businesses and citizens.

# Degree of satisfaction of e-government service users with established e-Government services (Businesses & Citizens)



# User priority of current and planned e-government services (Businesses & Citizens)



# User priority of current and planned e-government services (Businesses & Citizens)

## Our perspective

- ▶ 47% of respondents want to have the ability to view tender documents online; download bidding documents; upload bids; track the status of their bids; and find out who the best evaluated bidders are; and who the tender is awarded to online.
- ▶ 49% of the respondents want to have the ability to buy and sell products and services online.
- ▶ 70% of businesses and citizens regard e-Banking as a high priority. This represents the highest score of all current and planned e-Government initiatives; with respondents wanting to be able to make payments and receive monies online without having to go to the banking hall. This is an indication of banking hall fatigue.
- ▶ 44% of respondents want to have the ability to declare their imports and exports online and make the necessary payments.



# User priority of current and planned e-government services (Businesses & Citizens)

## Our perspective

- ▶ 44% of respondents want to have the ability to carry around plastic cards as an alternate form of money for low value transactions or in order to accumulate loyalty points for later redemption.
- ▶ 51% of respondents want to have the ability to access social services public information online.
- ▶ 62% of the respondents want to have the ability to access Production (agricultural) and Market Information Services online.
- ▶ 60% of respondents want to have the ability to apply for passports and renew them online.
- ▶ 33% of respondents want to have the ability to file cases with court and obtain updates on the developments in their cases online.

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# User priority of current and planned e-government services (Businesses & Citizens)

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## Our perspective

- ▶ 49% of respondents want to have the ability to apply for land titles, view existing titles and access information regarding available land and land sales online.
- ▶ 46% of respondents want to have the ability to register to vote, confirm polling data and vote online.
- ▶ 53% of respondents want to have the ability to register for tax, submit tax returns and pay for tax online.
- ▶ 59% of respondents want to have the ability to receive electronic utility bills, make payments and track their status online.
- ▶ 57% of respondents want to have the ability to apply for driving permits and renew driving permits online.

# User priority of current and planned e-government services (Businesses & Citizens)

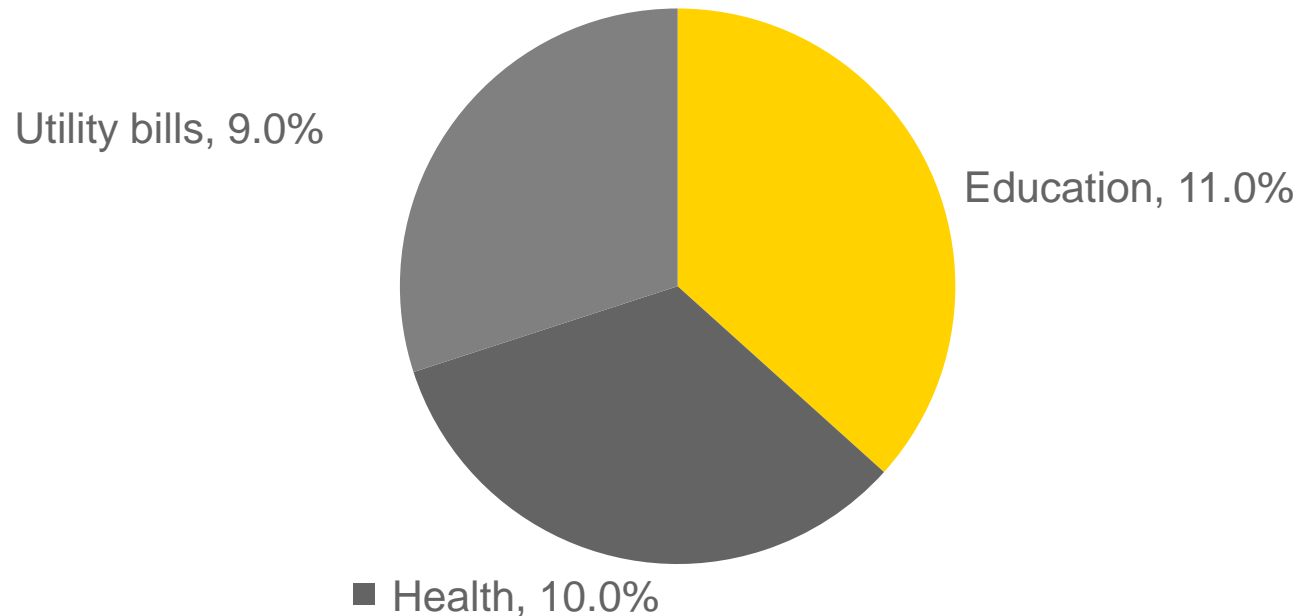
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## Our perspective

- ▶ 41% of respondents want to have the ability to obtain transport information online.
- ▶ 29% of respondents want to have the ability to obtain Local Government information online.
- ▶ 27% of respondents want to have the ability to obtain parliamentary information, proceedings and updates on the development, debating and approval of legislation online.
- ▶ 28% of respondents want to have the ability to obtain weather and climate information online.
- ▶ 30% of respondents want to have the ability to obtain environmental management information online.

# Top 3 e-Government services that Businesses and Citizens would like the government provide

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- ▶ The top 3 e-Government services that businesses and citizens would like the government to provide relate to the following:
  - ▶ Education
  - ▶ Health Care
  - ▶ Utility Bills (information and payment)

# Top 3 e-Government services that Businesses and Citizens would like the government provide

## Our perspective

- ▶ Education has a 15.2% share of the national budget for the fiscal year 2012/13 or UGX 1,624.6 billion, while Health has a 7.7% share of the budget or UGX 828.5 billion.
- ▶ Combined, the two sectors take up 22.9% of the national budget or UGX 2,453.1 billion. Consequently the aspirations of the Ugandan people in relation to Education and Health being the top two concerns for businesses and citizens is reflected in the national budget priorities.
- ▶ Businesses and citizens are interested in e-Education and e-Learning, as well as obtaining information on health and medicine - including locations of hospitals, clinics, health centres and pharmacies. They also want to know about HIV/AIDS, sex education, prescription drugs and over-the-counter drugs, as well as preventative health care.
- ▶ Businesses and citizens are also interested in obtaining utility invoices/bills online or via phone and making payments for utility bills online and by phone.