COMPENDIUM OF CONCEPTS AND

DEFINITIONS ON CORE

INFORMATION TECHNOLOGY INDICATORS

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ACRONYMS

BPO	Business Process Outsourcing
CPC	Central Product Classification
HEIs	Higher Education Institutions
ICT	Information and Communications Technology
ISIC	International Standard Industrial Classification
ISPs	Internet Service Providers
IT	Information Technology
ITES	Information Technology-Enabled Services
ITU	International Telecommunication Union
LGs	Local Governments
MDAs	Ministries, Departments and Agencies
NBI	National Backbone Infrastructure
NITA-U	National Information Technology Authority
SDGs	Sustainable Development Goals
TV	Television
UBOS	Uganda Bureau of Statistics
UCC	Uganda Communications Commission
UIA	Uganda Investment Authority
NCHE	National Council for Higher Education
UNHS	Uganda National Household Survey
UNPHC	Uganda National Population and Housing Census
URA	Uganda Revenue Authority
URSB	Uganda Registration Services Bureau

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1.0   Introduction

The National Information Technology Authority-Uganda (NITA-U) was established by the NITA-U Act 2009, as a semi-autonomous body under the Ministry of Information and Communications Technology. It is mandated to coordinate, promote and monitor Information Technology (IT) developments in Uganda within the context of National Social and Economic development. NITA-U is also the national coordinating agency for Information Security in Uganda.

Coordination, promotion and monitoring of Information Technology developments therefore requires generation and making available quality IT statistical information for evidence based decision making, planning, management and monitoring. To this end, various international, regional and national frameworks have been designed to enhance the development of Information Technology. These include the post-2015 Sustainable Development Goals (SDGs), Continental Information and Communications Technology Strategy for Africa, East African Community Information and Communications Technology Strategy, Uganda Vision 2040, National Development Plan (NDP), IT Policies, Programmes and Laws.

The Authority has developed and is implementing a National Information Technology Strategic Plan for Statistics as a comprehensive framework within which Information Technology statistical needs are identified, produced and disseminated to inform national, regional and international initiatives.

The harmonization of concepts, definitions and terminologies is a prerequisite for quality statistics hence the urgent need to harmonize the concepts for quality and comparability purposes. The Compendium has, therefore, been developed as a result of recognizing the importance of measuring progress towards the information society through internationally comparable statistical indicators. It is a living document that will be updated every three to five years with input from the respective data sources and subject area specialists in NITA-U.

1.1   Purpose

The purpose of the Compendium guide is to facilitate regular documentation, producer and user access of up to date IT statistics concepts, definitions and terminologies in the

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National, Regional and International Statistical Systems. Specifically, the Compendium is intended to;

i. Promote effective documentation and harmonization of IT statistics concepts, definitions and terminologies among data producers and users.

ii. Increase awareness and usability of IT statistics concepts, definitions and terminologies in the National, Regional and International Statistical Systems.

2.0   Common Concepts, Definitions and Terminologies

2.1   Bandwidth :

This is the amount of data that can be carried from one point to another in a given time period (usually a second). This kind of bandwidth is expressed in bits (of data) per second (bps). Occasionally, it is expressed as bytes per second (Bps). A modem that works at 57,600 bps has twice the bandwidth of a modem that works at 28,800 bps.

2.2   Broadband :

Broadband refers to technologies that provide access to the Internet at download speeds of 256 kbit/s or greater. It includes both fixed broadband technologies and wireless broadband technologies.

2.3   Business Process Outsourcing (BPO):

This is very often used by a large number of industry participants to designate information technology enabled services (ITES) such as those performed by contact centres, technical support services, or account receivable management outsourced to a third party.

2.4   Computer:

This means an electronic, magnetic, optical, electrochemical or other data processing device or a group of such interconnected or related devices, performing logical, arithmetic or storage functions; and includes any data storage facility or communications facility directly related to or operating in conjunction with such a device or group of such interconnected or related devices; (Electronic Transactions Act, 2011).

For statistical purposes, this will include "a desktop computer, a laptop computer or a tablet or similar handheld computer. It does not include equipment with some

embedded computing abilities, such as smart TV sets, and devices with telephony as a main function, such as mobile or smartphones."

2.5   Computer hardware:

All physical parts and components of a computer. In addition, a peripheral is any hardware device connected to a computer, for example the monitor, keyboard, printer, disk, tape, graphics tablet, scanner, joy stick, paddle and mouse.

2.6   Computer Software:

Organised collections of computer data and instructions often categorised under: *system software and application software.*

i.   System Software

Computer programs (instructions) that control, integrate, and manage the individual hardware components of a computer system.

ii.   Application Software

Computer programs (instructions) that accomplish specific tasks for which people use computers, other than just running the computer system.

2.7   Computer Literacy:

Computer Literacy is the knowledge and ability a person has to use computers and technology efficiently.

2.8   Domestic Internet bandwidth:

This refers to the used capacity for exchanging national Internet traffic. Out of the total national bandwidth available in the country (i.e. the potential capacity of the connections), there is a part that corresponds to the contracted or purchased capacity. This contracted capacity refers to bandwidth put into service, but not all of which is used; some is held in reserve for restoration or redundancy. This indicator thus refers to the portion of the contracted capacity that is actually used to carry traffic. It refers to the capacity ISPs use to connect to Internet exchanges.

2.9   Electronic Government (e-Government):

This is the use of information and communication technologies to deliver public services in a convenient, efficient customer-oriented and cost-effective way (NITA-U Act, 2009).

2.10   Fixed broadband:

This comprises of technologies that provide access to the Internet at download speeds of 256 kbit/s or greater over fixed wired technologies (DSL, Cable modem, FTTH/FTTB, Other fixed wired) and fixed wireless technologies (Satellite and terrestrial).

2.11   Government web portal:

This is a web site or interface that offers a range of resources and services including email, for a, search engine and an integration of websites (National Information Technology Authority, Uganda (E-Government) Regulations, 2015).

2.12   ICT goods:

ICT goods are those that are either intended to fulfil the function of information processing and communication by electronic means, including transmission and display, or which use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process (ISIC Rev. 4).

2.13   ICT Sector:

The ICT sector combines manufacturing and services industries whose products primarily fulfil or enable the function of information processing and communication by electronic means, including transmission and display.   This comprises ICT manufacturing industries, ICT trade industries and ICT services industries (ISIC Rev. 4).

2.14   ICT services:

ICT services are those intended to enable the function of information processing and communication by electronic means (ISIC Rev. 4).

2.15   International Internet bandwidth:

This is the used capacity of international connections between countries for transmitting Internet traffic. Out of the total international bandwidth available in the country (i.e. the potential capacity of the connections), there is a part that corresponds to the contracted or purchased capacity. This contracted capacity refers to bandwidth put into service, but

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not all of which is used; some is held in reserve for restoration or redundancy. This indicator thus refers to the portion of the contracted capacity that is actually used to carry traffic. If the bandwidth is asymmetric, the incoming (downlink) capacity should be provided.

2.16   Information Technology:

This means the science of collecting and using information by means of computer systems and refers to computers, ancillary or peripheral equipment such as printers and scanners, software and firmware services including support services, and related resources and includes any equipment or interconnected systems that are used in the acquisition, storage, manipulation or processing, management, movement, control, display, transmission or reception of data or information (NITA-U Act, 2009).

2.17   Information Security:

This means the protection of information and information systems from unauthorised access, use, disclosure, disruption, modification or destruction (National Information Technology Authority, Uganda (E-Government) Regulations, 2015).

2.18   Information system:

This is a system for generating, sending, receiving, storing, displaying or otherwise processing data messages and includes the internet or any other information sharing system (National Information Technology Authority, Uganda (E-Government) Regulations, 2015).

2.19   Internet:

This is worldwide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only via a computer − it may also be by mobile phone, PDA, game machine, digital TV or other device). Internet access can be via a fixed or wireless network (International Telecommunications Union, 2010).

2.20   Intranet:

This refers to an internal communications network using Internet protocols and allowing communication within an organization (and to other authorized persons). It is typically set up behind a firewall to control access.

2.21   IT- ITES Sector:

This comprises of software industry and information technology enabled services (ITES), which also includes business process outsourcing (BPO) industry. This includes Generic software development, Custom Software Development, Hard and Software Infrastructure Service; Knowledge Process Service; Voice services and Data Services. Based on the International Standard Industrial Classification (ISIC. Ver 4), IT-ITES sector includes the following categories in Table 1 below;

Table 1 – List of IT & ITES sub sectors

ISIC Code	Description
5820	Software publishing
62	Computer programming, consultancy and related activities
6201	Computer programming activities
6202	Computer consultancy and computer facilities management activities
6209	Other information technology and computer service activities
631	Data processing, hosting and related activities; web portals
6311	Data processing, hosting and related activities
6312	Web portals

2.22   Local Area Network (LAN):

This refers to a network connecting computers within a localized area such as a single building, department or site; it may be wireless (International Telecommunications Union, 2010).

2.23   Metropolitan area network (MAN):

A metropolitan area network is similar to a local area network (LAN) but spans an entire city or campus. MANs are formed by connecting multiple LANs. Thus, MANs are larger

than LANs but smaller than wide area networks (WAN). MANs are used to build networks with high data connection speeds for cities and towns.

The working mechanism of a MAN is similar to an Internet Service Provider (ISP), but a MAN is not owned by a single organization. Like a WAN, a MAN provides shared network connections to its users. A MAN mostly works on the data link layer, which is Layer 2 of the Open Systems Interconnection (OSI) model.

2.24   Mobile broadband:

These are technologies that provide wireless high-speed Internet access at download speeds of 256 kbit/s or greater through mobile devices such mobile phones, laptops, tablets and other mobile Internet devices using portable modems (USB modem /dongle, a data card or built-in device (on some laptops), or a mobile Wi-Fi (or MiFi)). Mobile broadband is available with most 2G, 2.5G, 3G and higher speed mobile technologies.

2.25   Mobile broadband-Standard:

These are mobile subscriptions which provide access to the larger Internet with advertised data speeds of 256 kbit/s or greater, which have been used to make an Internet data connection over Internet Protocol in the previous three months. Standard mobile subscriptions are typical voice subscriptions which also provide access to the Internet but are not purchased separately. Subscriptions which only offer "walled garden" or email-only services (or SMS/MMS only) as well as those offering access to the open Internet but that only have made access to "walled garden" and email-only services in the last three months will not be considered. Bundled offers (i.e., voice and data access) for a unique (flat rate) tariff are to be counted if a data connection has been made in last 3 months.

2.26   Mobile broadband-Dedicated:

These are dedicated data services over a mobile network which are purchased separately from voice services either as a standalone service (modem/dongle), i.e. excluding mobile handset users or as an add-on data package to voice services which requires an additional subscription. All dedicated mobile data subscriptions with recurring subscription fees are included as "active data subscriptions" regardless of actual use. Pre-paid mobile broadband plans (i.e. all non- recurrent fee subscriptions) require active use in previous 3 months. Subscriptions which only offer "walled garden"

or email-only services (or SMS/MMS only) will not be considered. Bundled offers (i.e., voice and data access) are excluded.

2.27   Public key infrastructure (PKI):

This is a framework for creating a secure method for exchanging information based on public key cryptography (National Information Technology Authority, Uganda (E-Government) Regulations, 2015).

2.28   Website:

This means a location on the internet and a collection of web pages, images, videos, data which are addressed relative to a common Uniform Resource Location (National Information Technology Authority, Uganda (E-Government) Regulations, 2015).

2.29   Wide area network (WAN):

This is a network that exists over a large-scale geographical area. A WAN connects different smaller networks, including local area networks (LAN) and metro area networks (MAN). This ensures that computers and users in one location can communicate with computers and users in other locations. WAN implementation can be done either with the help of the public transmission system or a private network.

2.30   Wireless broadband:

This comprises of technologies that provide access to the Internet at download speeds of 256 kbit/s or greater over wireless technologies. These include; fixed wireless technologies (satellite broadband and terrestrial) and active mobile-broadband connections to the public Internet.

2.31   World Wide Web (WWW):

This is a specific category of internet interface that uses hyperlinks and multimedia documents. The www is a system of Internet servers that supports a collection of documents that are written and formatted using the same type of programming language, called Hypertext Markup Language, or HTML.

3.0   Metadata for IT Statistics

Metadata is data that describes other data. It is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an

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information resource. It may include explanatory notes, information papers, and concepts, sources and methods. Generally, metadata is presented in statistical tables. The row and column descriptions, reference period, geographical area and footnotes associated with the data, statistics or indicators constitute metadata.

3.1   Structure of the Metadata Sheets

This Metadata sheets have been arranged for each indicator under specific components following standard format agreed upon by stakeholders with in the National Statistical System. The detailed information for each indicator includes:

- Indicator
- Definition
- Scope and coverage
- Sources of data
- Compilation practices
- Computation method
- Accessibility and availability of data.
- Periodicity of production
- Comments and limitations

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3.2   Metadata sheets

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
E-Government indicators									
1. **Proportion of persons employed in government organisations routinely using computers**	This refers to all persons working for government organisations including; permanent, part-time, short-term and casual employees that use computers at least once every week.	Percentage	National level Sex Type of government organisation	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government organisations and extractions from Employee monitoring tools and Computer usage logs in government organisations	This is calculated by dividing the total number of employees in government organisations, who use computers at least once every week, by the total number of employees in government organisations. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the egovernment survey Computer usage logs in government organisations 6months	For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post offices are not statistical units. The limitations include; -Need for third-party software to analyse the computer usage patterns in government organisations. - Most operating systems come with inbuilt tools that need customization -Government organisations not having centralized server logons
2. **Proportion of persons employed in government organisations routinely using the**	This refers to all persons working for government organisations including permanent, part-	Percentage	National level Sex Type of government organisation	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government	This is calculated by dividing the total number of employees in government organisations,	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website:	After every 2 years following the egovernment survey	For the purposes of this indicator, government organisations such as individual

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
Internet	time, short-term and casual employees that that use internet at least once every week.				organisations

and extraction from the Employee & Internet Monitoring tools | who use Internet at least once every week, by the total number employees in government organisations. The result is then multiplied by 100 to be expressed as a percentage. | www.nita.go.ug | Bandwidth Monitoring tools-6months | schools, hospitals, health centres, police stations and post offices are not statistical units. -MDAs not having centralized computer servers from where staff internet usage can be managed. |
| 3. **Proportion of ICT employees in government organisations** | This refers to persons employed/sub-contracted to perform ICT functions/roles in government organisations | Percentage | National level Sex ICT roles qualification Type of government organisation | NITA-U | The data is obtained through egovernment surveys conducted by NITA-U in government organisations and employee Monitoring Software in government organisations such as IPPS. | This is calculated by dividing the total number of ICT employees in government organisations by the total number of staff in government organisations. The result is then multiplied by 100 to be expressed as a percentage. | This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug | After every 2 years following the egovernment survey | Definition of ICT employees and distinction between ICT employees and contract staff is a limitation. If information is sought about ICT employees, it should also be collected in respect of ICT contract staff.

For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post offices are not statistical units. |
| 4. **Proportion of government organisations with Web** | This refers to government organisations with a website, | Percentage | National level Type of government organisation | NITA-U | The data is obtained through egovernment surveys conducted | This is calculated by dividing the number of government | This information can be accessed by users from the IT Statistical | After every 2 years following the egovernment | For the purposes of this indicator, government organisations |

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
presence	homepage or presence on another entity's website. It includes social media pages and accounts (for example, Facebook, YouTube and Twitter) if the entity has control over content.				by NITA-U in government organisations and assessment of web presence through online searching	organisations with a Web presence by the total number of government organisations. The result is then multiplied by 100 to be expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	survey	such as individual schools, hospitals, health centres, police stations and post offices are not statistical units. Web presence excludes inclusion of an online directory and any other web pages where the entity does not have control over the content of the page.
5. **Proportion of government organisations with a local area network (LAN)**	This refers to government organisations with a network connecting computers within a localized area such as a single building, department or site; it may be wireless.	Percentage	National level Type of government organization	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government organisations	This is calculated by dividing the number of government organisations with a LAN by the total number of government organisations. The result is then multiplied by 100 to be expressed as a percentage. Disaggregated by	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the egovernment survey	For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post offices are not statistical units.
6. **Proportion of government organizations with Wide Area Network (WAN)**	This refers to government organisations with a network that exists over a large-scale geographical area. A WAN connects different smaller networks, including local area	Percentage	National level Type of government organization	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government organisations	This is calculated by dividing the total number of government organisation with WAN by the total number of government organisation. The result is then	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the egovernment survey	For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	networks (LAN) and metro area networks (MAN). This ensures that computers and users in one location can communicate with computers and users in other locations.					multiplied by 100 to be expressed as a percentage.			offices are not statistical units.
7. **Proportion of government organisations with an intranet**	This refers to government organisations with an internal communications network using Internet protocols and allowing communication within an organization (and to other authorized persons). It is typically set up behind a firewall to control access.	Percentage	National level Type of government organisation	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government organisations	This is calculated by dividing the total number of government organisation with an intranet by the total number of government organisation. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the egovernment survey	For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post offices are not statistical units.
8. **Proportion of government organisations with Internet access**	This refers to government organisations that are connected to the Internet through various technologies such as Hardwired broadband access and Wireless broadband access.	Percentage	National level Type of internet access	NITA-U	The data is obtained through e-government surveys conducted by NITA-U in government organisations	This is calculated by dividing the total number of government organisations with Internet access (by each type of access and any access) by the total number of government organisations. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the e-government survey	For the purposes of this indicator, government organisations such as individual schools, hospitals, health centres, police stations and post offices are not statistical units.
9. **Proportion of government organisations**	This refers to government organisations	Percentage	National level Type of services	NITA-U	The data is obtained through e-government surveys	This is calculated by dividing the total number of	This information can be accessed by users from the	After every 2 years following the	Internet-based services, for the purposes of this

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providing services online	which provide Internet-based services. Type of services; e.g. retrieval and printing of online forms, use of interactive online forms, online bids, payment of bills, tax filing applications, company registration, car registration, voting, public grievance systems, online feed back				conducted by NITA-U in government organisations and assessment of online services through online searching	government organisations providing Internet based services by the total number of government organisations. The result is then multiplied by 100 to be expressed as a percentage.	IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	e-government survey	indicator, refer to services that are accessible via a publicly available website. They include situations where an application is downloaded from a website and used on an individual's computer. Such a process may also involve lodgement via the Internet. Publicly accessible websites may require an individual to register as a user and obtain a logon ID, a password and (or) other forms of security. This includes providing a reference or account number (or equivalent) in order to access the service.
10. **Proportion of government organisations providing mobile phone technology accessible platforms**	This refers to government organisations providing mobile phone based applications customized to solve specific user demands	Percentage	National level Type of services	NITA-U	The data is obtained through e-government surveys conducted by NITA-U in government organisations .	This is calculated by dividing the total number of government organisations providing mobile phone based applications customized to solve specific user	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the e-government survey	Mobile phone based applications can either Internet based or not.

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
						demands by the total number of government organisations. The result is then multiplied by 100 to be expressed as a percentage.			
11. ICT expenditure in government organisations (operating/recurrent and capital)	This measures resources that government organisations spend on ICT related activities (Equipment, services, manpower, training among others).	Percentage	National level	NITA-U	The data is obtained through egovernment surveys conducted by NITA-U in government organisations or through FMS, audited reports, PPDA ICT reports and other government organisations financial management systems	This is calculated by dividing the expenditure on ICT related activities by the total expenditure in government organisations The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	After every 2 years following the e-government survey	Definition of ICT related activity and the distinction between operating and capital expenditure. For capital expenditure, whether own account software development is included as an ICT asset.
Indicators on Internet									
1. Fixed Internet subscriptions	This indicator refers to the total number of Internet subscribers with fixed internet access. Specifically the number of customers connected to the various access modes e.g. DSL, Dial up, cable modem etc Only active subscribers that have used the system within the past 3 months should be included.	Number	National level	UCC	Information is obtained from UCC administrative reports based on data submitted by licensed Internet service providers in the country.	Summation of all active fixed Internet subscriptions irrespective of speeds	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	Only active subscriptions that have used the system within the past 3 months should be included. The limitation is failure to get the data in time.
2. Mobile Internet subscriptions	This indicator refers to the total	Number	National level	UCC	Information is obtained from UCC	Summation of active mobile	This information can be accessed	Annually	Only active subscriptions

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	number of Internet subscribers using terrestrial mobile connections within the previous 3 months				administrative reports based on data submitted by licensed Internet service providers in the country.	Internet subscriptions irrespective of speeds	by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug		that have used the system within the past 3 months should be included. The limitation is failure to get the data in time.
3. Fixed broadband subscriptions	This refers to subscribers to high-speed access to the public at downstream speeds equal to, or greater than, 256 kbit/s over fixed wired technologies (DSL, Cable modem, FTTH/FTTB, Other fixed wired) and fixed wireless technologies (Satellite and terrestrial) in the previous 3 months.	Number	National level	UCC	Information is obtained from UCC administrative reports based on data submitted by licensed Internet service providers providing fixed-broadband services in the country.	This is measured as the sum of broadband subscriptions over fixed wired technologies and wireless technologies. Disaggregation is by fixed wired technology and Fixed wireless technology	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	Only active subscriptions that have used the system within the past 3 months should be included The limitation is failure to get the data in time.
4. Wireless broadband subscriptions	This refers to subscribers to high-speed access to the public Internet at downstream speeds equal to or greater than, 256 kbit/s over active wireless-broadband Internet subscriptions using satellite, terrestrial fixed wireless or terrestrial mobile connections during the previous 3 months.	Number	National level Type of technology	UCC	Information is obtained from UCC administrative reports based on data submitted by licensed Internet service providers providing wireless-broadband services in the country.	This is measured as the sum of satellite broadband, terrestrial fixed wireless broadband and active mobile-broadband subscriptions to the public Internet.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	Only active subscriptions that have used the system within the past 3 months should be included The limitation is failure to get the data in time.
5. Active Mobile broadband	This refers to wireless-broadband	Number	National level Type of mobile	UCC	T Information is obtained from UCC	Summation of mobile	This information can be accessed	Annually	Only active subscriptions

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subscriptions	Internet subscribers using terrestrial mobile connections which have been used to make an Internet data connection in the 3 months.		broadband subscription		administrative reports based on data submitted by licensed Internet service providers providing wireless-broadband services in the country. .	subscriptions with advertise data speeds of 256 kbit/s or greater which have been used to make an Internet data connection in the previous 3 months.	by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug		that have used the system within the past 3 months should be included The limitation is failure to get the data in time.
6. International Internet bandwidth	This refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s).	Number	National	UCC	Data on bandwidth can be collected from all ISPs in the country that contract international Internet bandwidth, and then aggregated at the country level.	It is measured as the sum of used capacity of all Internet exchanges (locations where Internet traffic is exchanged) offering international bandwidth.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	This indicator refers to the portion of the contracted capacity that is actually used to carry traffic. If capacity is asymmetric (i.e. more incoming (downlink) than outgoing (uplink) capacity), then the incoming (downlink) capacity should be provided.
7. Domestic Internet bandwidth	This indicator refers to the used capacity for exchanging national Internet traffic. It refers to the capacity ISPs use to connect to Internet exchanges.	Number	National	UCC	Data can be collected from public Internet exchanges in the country, which should be able to supply the aggregated total for an exchange.		This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	If capacity is asymmetric (i.e., more download than upload), the download capacity should be provided. ISPs can have different bandwidth capacities depending on the route and topology of their backbone

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
									networks. Therefore, the methodology to use is to add up the bandwidth that is available to each ISP at locations where Internet traffic is exchanged, such as Internet exchanges or network access points.
8. **Proportion of the population covered by at least a 3G mobile network**	This refers to the inhabitants that are within range of at least a 3G mobile-cellular signal, irrespective of whether or not they are subscribers.	Percentage	National	UCC	The data can be collected from licensed 3G mobile-cellular operators in the country.	This is calculated by dividing the number of inhabitants that are covered by at least a 3G mobile-cellular signal by the total population and multiplying by 100.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	It is based on where the population lives, and not where they work or go to school. It includes the percentage of the population covered by mobile-cellular technologies such as WCDMA (UMTS) and associated technologies such as HSPA, CDMA2000 and related technologies such as EV-DO, mobile WiMAX 802.16e and LTE.
Use of IT by Businesses Indicators									

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
1. **Proportion of businesses using computers**	This refers to the use of computers by businesses during the last three months.	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	This is calculated by dividing the number of businesses using computers during the last three months by the total number of businesses. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical	After every 3 years	The question is asked of all businesses being interviewed. Use can be at the business's premises or elsewhere. Care should be taken with the definition of computer.
2. **Proportion of employees routinely using computers**	It refers to the persons employed by businesses who used a computer at least once every week during the last three months.	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	Calculated by dividing the number of persons employed who used a computer at least once every week during the last three months by the total number of persons employed. The result is then multiplied by 100 to be expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	Persons employed refer to all persons working for the business, not only those working in clerical jobs. They include short-term and casual employees, contributing family workers and self-employed persons, who may be paid or unpaid. The question is asked of all businesses that used computers during the last three months. Use can be at the business's premises or elsewhere but refers to use for

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
									work purposes. The main statistical issue with this indicator is that the result reflects the industrial profile of the country as much as the level of use of ICT by employed people. This arises because the use of ICT at work varies by industry and occupation. Therefore, having a large manufacturing sector may show a lower result on this indicator simply because manufacturing workers are less likely to use ICT than clerical workers. Another issue is the interpretation of "routinely" as "at least once every week".
3. **Proportion of businesses using the Internet**	This refers to the use of the Internet by businesses during the last three months-whether or not the business used a computer (as the Internet may be	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	Calculated by dividing the number of businesses using the Internet by the total number of businesses.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	Internet use may be facilitated by any device enabling Internet access (not only a computer). This includes a mobile phone, PDA etc

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	accessed in other ways).					The result is then multiplied by 100 to be expressed as a percentage.			Use can be via a fixed or mobile network. The question is asked of all businesses - not only those businesses that used a computer. Use can be at the business's premises or elsewhere.
4. **Proportion of employees routinely using the Internet**	This refers to the persons employed by businesses who used the Internet at least once every week during the last three months.	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	This is calculated by dividing the number of persons employed who routinely used the Internet by the total number of persons employed. The result is then multiplied by 100 to be expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	Persons employed refer to all persons working for the business, not only those working in clerical jobs. They include Short-term and casual employees, contributing family workers and self-employed persons, who may be paid or unpaid. The main statistical issue with this indicator is that the result reflects the industrial profile of the country as much as the level of use of ICT by

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
									employed people. The issue of interpreting "routinely" being restricted to "at least once a week".
5. Proportion of businesses with a web presence	This refers to businesses with a website, homepage or presence on another entity's website. It includes social media pages and accounts (for example, Facebook, YouTube and Twitter) if the entity has control over content.	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	This is calculated by dividing the number of businesses with a Web presence by the total number of businesses. The result is then multiplied by 100 to be expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	A web presence excludes inclusion in an online directory and any other web pages where the business does not have control over the content of the page. The term 'web presence' is used rather than 'web site', based on the presumption that a presence on the WWW is more important than a web site per se.
6. Proportion of businesses with an intranet	This is a measure of businesses with an internal communications network using Internet protocols and allowing communication within an organization (and to other authorized persons) as at the reference date.	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	This is calculated by dividing the number businesses with an intranet by the total number of businesses. The result is then multiplied by 100 to be expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	The main statistical issue with this indicator is the definition of intranet.
7. Proportion of	This refers to the	Percentage	National level	UBOS,	The data can be	This is most	Abstracts and the	After every 3	Orders received

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
businesses receiving orders over the Internet	incidence of selling over the Internet by businesses during the reference period. It is one of two measures of e-commerce.		Regional level Rural/urban Industry Sector	NITA-U	extracted from Business surveys/inquiries	simply calculated by dividing the number of businesses receiving orders over the Internet by the total number of businesses. The result is then multiplied by 100 to be expressed as a percentage.	NITA-U website: www.nita.go.ug	years	include those via the Internet whether or not payment was made online. They include orders received via websites, specialized Internet marketplaces, extranets, Internet-enabled mobile phones and e-mail. They also include orders received over the Internet on behalf of other organsations and orders received over the Internet by other organsations on behalf of the business. *Orders received* exclude orders that were cancelled or not completed. The main statistical issue with this indicator is the definition and interpretation of Internet selling.
8. **Proportion of businesses placing orders over the**	This refers to the incidence of purchasing over the Internet by	Percentage	National level Regional level Rural/urban Industry Sector	UBOS, NITA-U	The data can be extracted from Business surveys/inquiries	This is most simply calculated by dividing the number of	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	Orders placed include those via the Internet whether or not

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
Internet	businesses during the reference period. It is one of two measures of e-commerce in the set of business use indicators					businesses placing orders over the Internet by the total number of businesses. The result is then multiplied by 100 to be expressed as a percentage.			payment was made online. They include orders placed via websites, specialized Internet marketplaces, extranets, Internet-enabled mobile phones and e-mail. Orders placed exclude orders that were cancelled or not completed. The main statistical issue with this indicator is the definition and interpretation of Internet purchasing.
Household IT access and individual use Indicators									
1. **Proportion of households with a computer**	Household with a computer means that the computer is generally available for use by all members of the household at any time, regardless of whether it is actually used. The computer may or may not be owned by the household, but should be considered a	Percentage	National Sex of the Household head, Type of computer	UBOS	The data can be extracted from UNHS, UNPS and UNPHC	The number of households with a computer, or a given type of computer, is calculated by aggregating the weighted responses. It is calculated by dividing the number of households with a computer (or a	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	Equipment should be in working condition at the time of the survey. This indicator is included in the ICT Development Index and thus considered a key metric for international

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	household asset.					given type of computer) by the total number of households and then multiplying the result by 100.			comparison of ICT developments.
2. **Proportion of individuals using a computer**	This refers to individuals who used a computer from any location in the last three months.	Percentage	National Sex Rural/Urban	UBOS	The data can be extracted from UNHS, UNPS and UNPHC	The number of individuals using a computer is calculated by aggregating the weighted responses.

The proportion of individuals using a computer is expressed as a percentage and is calculated by dividing the total number of individuals using a computer by the total number of individuals, and then multiplying the result by 100. | Abstracts and the NITA-U website: www.nita.go.ug | After every 3 years | Equipment should be in working condition at the time of the survey. |
| 3. **Proportion of households with Internet access** | Household with Internet access means that the Internet is generally available for use by all members of the household at any time, regardless of whether it is actually used. The connection and devices may or may not be owned by the household but should be considered | Percentage | National Sex of the Household head, Internet access type | UBOS | The data can be extracted from UNHS, UNPS and UNPHC | The number of households with Internet is calculated by aggregating the weighted responses.

It is calculated by dividing the number of households with Internet by the total number of households, and then multiplying | Abstracts and the NITA-U website: www.nita.go.ug | After every 3 years | An Internet connection in the household should be working at the time of the survey.

This indicator is included in the ICT Development Index, and is thus considered a key metric for international |

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	household assets.					the result by 100.			comparisons of ICT developments.
4. **Proportion of individuals using the Internet**	This indicator refers to use of the Internet by individual household members from any location in the last three months. This includes those using the Internet from any device (including mobile phones).	Percentage	National Sex Age Frequency of Internet use Location of usage Type of activity	UBOS, UCC	The data can be extracted from UNHS, UNPS and UNPHC In situations where surveys are not available, an estimate can be derived based on the number of Internet subscriptions	The number of individuals using the Internet is calculated by aggregating the weighted responses. It is calculated by dividing the total number of individuals using the Internet by the total number of individuals, and then multiplying the result by 100.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	This indicator is included in the ICT Development Index, and is thus considered a key metric for international comparisons of ICT developments.
5. **Proportion of Individuals with ICT skills, by type of skills**	This refers to ICT skills, defined for the purpose of this indicator as having undertaken certain computer-related activities in the last three months.	Percentage	National Sex Type of skills Age	UBOS	The data can be extracted from UNHS, UNPS and UNPHC	This is calculated as the proportion of computer users who have carried out each computer-related activity. The indicator is expressed as a percentage.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	The tasks are broadly ordered from less complex to more complex, although there is no requirement for a respondent to select simpler tasks before selecting a more complex task.
6. **Household expenditure on ICT**	This measures the expenditure undertaken by households on ICT equipment and ICT services. Classification of Individual Consumption According to Purpose is used in	Number/Percentage	National and Regional levels	UBOS	The data can be extracted from UNHS, UNPS and UNPHC	It can be presented as the amount, or proportion, of household expenditure spent on ICT. Disaggregated by ICT services such as data and airtime. Information on the	Abstracts and the NITA-U website: www.nita.go.ug	After every 3years	The statistical issue of this indicator is the definition of ICT. The indicator provides an indication of the importance of ICTs because it shows how much

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
this case.						percentage) of income that households spend on ICT can be compared to expenditure on other services (such as electricity, food, etc.).			households are prepared to spend on ICT. At the same time, it can be linked to the price of ICT equipment and services and help governments identify ways of reducing the cost and increasing the affordability of ICT.
7. **ICT sector employment**	This is refers to individuals working in the ICT sector. Using ISIC Rev. 4, the ICT sector is defined per the OECD's 2007 definition.	Number	National Sex	UBOS	The data can be extracted from UNHS, UNPS, Labour surveys, employment survey, and UNPHC	The number of individuals working in the ICT sector is calculated by aggregating the weighted responses. It is calculated by dividing the total number of individuals working in the ICT sector by the total number of individuals, and then multiplying the result by 100.	Abstracts and the NITA-U website: www.nita.go.ug	After every 3 years	The statistical issue of this indicator is the definition of ICT sector
ICT Economic Indicators									
1. **ICT sector contribution to GDP (% contribution to GDP)**	This is the contribution of ICT sector to Uganda's GDP. Using ISIC Rev. 4, the ICT sector is defined per the OECD's 2007 definition.	Percentage	National	UBOS	The data can be extracted from UNHS, UNPS and UNPHC	It is calculated by dividing the ICT sector GDP by the national GDP and then multiplying the result by 100.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT sector or the composition of ICT sector following the International Standard for

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
									Industrial Classification (ISIC Rev4)
2. ICT sector GDP growth	This measures the growth of ICT sector GDP over the years.	Percentage	National	UBOS	Extracts from UBOS compiled National Accounts	It is calculated by dividing the difference between the ICT sector GDP for the current and the previous periods by the ICT sector GDP for the previous period and then multiplying the result by 100.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT sector or the composition of ICT sector following the International Standard for Industrial Classification (ISIC Rev4)
3. Contribution of ICT sector to Services Sector GDP	This is the percentage contribution of ICT sector GDP to Uganda's Services Sector GDP	Percentage	National	UBOS	Extracts from UBOS compiled National Accounts	It is calculated by dividing the ICT sector by the total Services sector GDP and then multiplying the result by 100.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT sector or the composition of ICT sector following the International Standard for Industrial Classification (ISIC Rev4)

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Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
4. **ICT sector revenue**	This refers to the total revenue from the ICT sector Using ISIC Rev. 4, the ICT sector is defined per the OECD's 2007 definition.	Number	National Domestic and export revenue	URA	Extracts from URA trade statistics	This is calculated by summing up revenue from the ICT sector.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT sector
5. **ICT goods imports as a percentage of total imports**	This refers to the share of ICT goods imports as a percentage of total imports, both expressed in monetary value. ICT goods are defined per the OECD ICT goods classification based on the Central Product Classification Ver. 2.	Percenatge	National	URA	Extracted URA trade statistics	This is calculated by dividing the value of Uganda's ICT goods imports by the total value of its goods imports. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT goods

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
6. **ICT goods exports as a percentage of total exports**	This refers to the share of ICT goods exports as a percentage of total exports, both expressed in monetary value. ICT goods are defined per the OECD ICT goods classification based on the Central Product Classification Ver. 2.	Percentage	National	URA	Extracts from URA trade statistics	This is calculated by dividing the value of Uganda's ICT goods exports by the total value of its goods exports. The result is then multiplied by 100 to be expressed as a percentage.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT goods
7. **IT-ITES sector revenue**	This refers to the total revenue from IT-ITES sector Consideration of ISIC Rev. 4, to define IT-ITES sector	Number	National	URA	Extracts from URA trade statistics	This is calculated by summing up revenue from the IT-ITES sector.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of IT-ITES sector
8. **IT-ITES sector export revenue**	This refers to the revenue from IT-ITES sector exports/revenue from offshore services Consideration of ISIC Rev. 4, to define IT-ITES sector	Number	National	URA	Extracts from URA trade statistics	This is calculated by summing up revenue from the IT-ITES sector (offshore services revenue)	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of IT-ITES sector
9. **IT-ITES sector domestic revenue**	This refers to the revenue from IT-ITES sector services provided with in the	Number	National	URA	Extracts from URA trade statistics	This is calculated by summing up revenue from the IT-ITES sector services provided	This information can be accessed by users from the IT Statistical Abstracts and the	Annually	The statistical issue of this indicator is the definition of IT-ITES sector

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	country/revenue from onshore services Consideration of ISIC Rev. 4, to define IT-ITES sector					with in the country(revenue from onshore services)	NITA-U website: www.nita.go.ug		
10. Number of registered ICT Companies	Number of companies registered to carryout ICT related services	Number	National	URSB, UCC, URA, NITA-U		This is calculated as the sum of all companies registered to carryout ICT related services.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT company
11. Number of licensed companies to carry out ICT related projects	This measures the total companies licensed to carryout ICT related projects/services	Number	National	UIA	Extracts from UIA statistics	Calculated by summing up all licensed ICT related projects	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT company or ICT project
12. ICT planned capital Investment	This measures total funds planned to be invested in firms or enterprises to run ICT related projects/services	Number	National	UIA	Extracts from UIA statistics	This is calculated by summing funds planned to be invested in firms or enterprises to run ICT projects.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT company or ICT project
13. ICT actual capital Investment	This measures total funds invested in firms or enterprises to run ICT related projects/services	Number	National	UIA	Extracts from UIA statistics	This is calculated by summing funds planned to be invested in firms or enterprises to run ICT projects	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	The statistical issue of this indicator is the definition of ICT company or ICT project
14. ICT planned employment	This measures total number of planned jobs to serve in ICT related business	Number	National	UIA	Extracts from UIA statistics	This is calculated by summing all employees to be working in firms or	This information can be accessed by users from the IT Statistical	Annually	The statistical issue of this indicator is the definition of ICT

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
						enterprises to run ICT projects.	Abstracts and the NITA-U website: www.nita.go.ug		company or ICT project
15. ICT actual employment	This measures the total actual number of employees to serve in ICT related businesses	Number	National	UIA	Extracts from UIA statistics	This is calculated by summing all actual jobs created by firms running ICT projects	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug	Annually	
IT Education Indicators									
1. **Proportion of learners enrolled at higher education institutions (HEIs) in IT courses**	This refers to learners registered for courses of study in Information Technology and Computing in HEIs	Percentage	National Sex Programme of study Level of qualification	NCHE	Extracts from NCHE ICT Statistics	This is the total number of learners enrolled for courses of study in Information Technology and Computing in as a percentage total number of learners enrolled at Tertiary level irrespective of field of study.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug Or at NCHE website www.unche.or.ug	Annually	The challenge with this indicator is disaggregation of enrolment by Sex, programme of study and level of qualification.
2. **Proportion of graduates with IT qualifications**	This refers to learners who have completed courses of study in Information Technology and Computing in HEIs	Percentage	National Sex Programme of study Level of qualification	NCHE	Extracts from NCHE ICT Statistics	This is the total number of graduates in Information Technology and Computing as a percentage of total number of students that graduated in that academic year irrespective of the field of study.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug Or at NCHE website www.unche.or.ug	Annually	The challenge with this indicator is disaggregation by Sex, programme of study and level of qualification.
3. **Number of IT training institutions**	This measures the Institutions that offer IT training to produce the ICT workforce to the country at tertiary	Number	National	NCHE	Extracts from NCHE ICT Statistics	This is the total number of tertiary Institutions that offer ICT training to produce the ICT workforce to the country at	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website:	Annually	The statistical issue with this indicator is the definition of IT training institutions. Some institutions

Indicator	Definition and standard classifications	Unit of measure	Disaggregation	Sources of data	Compilation Practices	Computation method	Accessibility and Availability of data	Periodicity of production	Comments and limitations
	level.					tertiary level	www.nita.go.ug Or at NCHE www.unche.or.ug		other than those under NCHE may have been accredited as IT training institutions by other regulators such as BTVET or NITA-U
4. **Student to computer ratio in HEIs**	This measures student access to computers for learning and research at a time in HEIs	ratio	National	NCHE	Extracts from NCHE ICT Statistics	This is the total number of students per computer should they need to use the computers at the same time.	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug Or at NCHE www.unche.or.ug	Annually	The statistical issue with this indicator is the distinguishing shared computers with staff and those dedicated to students
5. **Staff to computer ratio in HEIs**	This measures academic staff access to computers for learning and research at a time in HEIs	ratio	National	NCHE	Extracts from NCHE ICT Statistics	This is the total number of staff per computer dedicated for teaching, learning or research	This information can be accessed by users from the IT Statistical Abstracts and the NITA-U website: www.nita.go.ug Or at NCHE www.unche.or.ug	Annually	The statistical issue with this indicator is the distinguishing shared computers with staff and those dedicated to staff

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1. The ISIC, Rev.4 industries in the ICT sector

ICT manufacturing industries	
2610	Manufacture of electronic components and boards
2620	Manufacture of computers and peripheral equipment
2630	Manufacture of communication equipment
2640	Manufacture of consumer electronics
2680	Manufacture of magnetic and optical media
ICT trade industries	
4651	Wholesale of computers, computer peripheral equipment and software
4652	Wholesale of electronic and telecommunications equipment and parts
ICT services industries	
5820	Software publishing
61	**Telecommunications**
6110	Wired telecommunications activities
6120	Wireless telecommunications activities
6130	Satellite telecommunications activities
6190	Other telecommunications activities
62	**Computer programming, consultancy and related activities**
6201	Computer programming activities
6202	Computer consultancy and computer facilities management activities
6209	Other information technology and computer service activities
631	**Data processing, hosting and related activities; web portals**
6311	Data processing, hosting and related activities
6312	Web portals
951	**Repair of computers and communication equipment**
9511	Repair of computers and peripheral equipment
9512	Repair of communication equipment

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