An Easy Guide to the Internet Connectivity in Uganda

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Knowledge Sharing, Advocacy & Expertise in ICT 4 Development

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Foreword

Increasingly the Internet has become a fact of everyday life for vast numbers of Ugandans who use it explicitly, or even implicitly, as they go about their everyday lives. Users and usage alike are increasing dramatically, all over the country and the Internet is firmly established as a critical infrastructure.

Over the last few years we have seen the industry on the African subcontinent grow in leaps and bounds. Not only are we playing Catch-up but we are also leading in certain areas. This puts those of us who are technically inclined in a very exciting spot with numerous potential.

However as they say money makes the world go round and we cannot deliver those services without consideration of the cost and the affordability to the end user. This leads to the age old cycle of the need for volume; low prices lead to high volume of clients however you need high volume of clients to offer low prices.

So where are we in Uganda?

At the end of a five year exclusive period, we now have a new telecoms policy with a catalogue of possibilities resulting in a potential number of services that will create a mountain of ambiguities.

This handbook gives a comprehensive coverage of the service providers and their pricing policy. The Acronyms section breaks down the techie\sales talk while the rest of the book takes a novice or a seasoned user through the world of purchasing internet services in Uganda.

On behalf of the Uganda service providers Association, (UISPA) I welcome its publication and highly recommend it to anyone with an interest in using or offering internet services. And as the industry changes I urge the editors to continuously release timely updates to keep the public abreast but also keep the market in check by providing a benchmarking platform.

Badru Ntege
Chairman Uganda ISP Association
Board Member African Network Information Center (AfriNIC)

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What is Internet?

The Internet is a global network connecting millions of inter-networked computers. (Inter-network – to mean across network thus the word Internet). This network enables global communications between all connected devices. The Internet can be compared to an international communications utility servicing many computers. It is sometimes compared to a giant international plumbing system. The Internet itself does not contain information. It is a misstatement to say a "document was found on the Internet." It would be more correct to say it was found through the Internet.

Connectivity news flash

•   The Government of Uganda is in the process of setting up a National Data Transmission Backbone using fibre cable that will link all districts in the country. This is one of the interventions of the National ICT Master Plan. The Government of the peoples Republic of China will be providing assistance to the Government of Uganda for this purpose.

The Eastern African Submarine Cable System (EASSY)

The level of use of the Internet in Uganda has been constrained by the high cost of Internet connection. This is partly due to the fact that Uganda is currently using Satellite technology for connection to the rest of World, and this technology is much more expensive than the alternative fibre cable. It is for this reason that the Government of Uganda and the local Internet and telecom service providers joined the EASSY project (East African Submarine Cable System) which envisions linking Eastern and parts of Southern Africa to the International fibre optic system.

According to the EASSY secretariat the mission of the submarine cable is "to develop an undersea fibre optic cable that will provide ample connectivity and capacity among the countries in Africa, and the rest of the world" The advantages and benefits of the EASSY system include:

•   Reduce payments to foreign satellite facility providers
•   Provide more profitability for telecom entities thus enhancing the chance of successful privatization
•   Reduce unit costs for global connectivity leading to increased profits, and lower tariffs and charges for the end users
•   Help Africa compete in the global market
•   Bring the power of high speed, high bandwidth connectivity to Africa
•   Enable new services and products not possible hitherto due to bandwidth restrictions

It is estimated that the cable will reduce connectivity costs in Eastern and Southern Africa by more than 50 percent once it becomes operational. But while the benefits of this system are certain, consensus is yet to be reached among governments, telecom operators and development agencies with the financing and ownership model.

Internet Services available in Uganda

	Service	Description
1.	DSL	An acronym for Digital Subscriber Line. Digital telephone line is capable of carrying both Data and voice at the same time. Therefore you can have your landline acting as a route for Internet Connectivity as well. Telephone companies can do this under your request for service.
2.	ISDN	Short for Integrated Services Digital Network is a digital telephone line that can be used for voice, fax, and data communication like a regular telephone line but can transfer data five times faster and allow you to talk on the phone with one person while sending data to another. This is a special service that you can order from your phone company.
3.	VSAT	The word VSAT stands for Very Small Aperture Terminal. The word Terminal in this case refers to the small Satellite dish that is installed on your location. This is a satellite communication system that can serve your home and business. Business and home users also get higher speed reception than if using ordinary telephone service, ISDN or Dial-up.
4.	Dial-up	This is connecting to the internet using a telephone line. Your computer connects via a modem to the Internet Service Provider, which in turn is connected to the Internet with a high-speed link. Many computers come with built in dial-up modems. Dial-up service is not always connected to the internet thus you need to use your ISP software to dial each time you want to connect. The types of modems that can be used to connect under Dial-up include: • Fixed Line, the standard copper wire telephone line • A Fixed Cellular Terminal/ PC card- This enables you to connect to the Internet through GPRS (General Packet Radio Service) and enables connectivity wherever there is mobile phone network coverage. • Fixed Wireless Terminal (Tele-saver phone) - Enables you to connect to the Internet through CDMA (Code Division Multiple Access) available in selected areas through a telecom company.
5	Wireless IP	Radio-based systems that allow transmission of information without a physical connection, as opposed to transmission systems that require a physical connection, such as copper wire or optical fibre.
6	Leased Line	Refers to a phone line that is rented exclusively for an internet connection 24 hours a day, seven days a week. High-speed connections tend to require a leased line.
7	Fibre	This is a technology that uses glass to transmit data. A fibre optic cable consists of a bundle of glass threads, each of which is capable of transmitting messages in the form of light. Fibre optic has a much greater capacity than metal cables, which means they can carry more data.
8	WIMAX	An acronym that stands for Worldwide Interoperability for Microwave Access. WIMAX refers wireless networks that can cover a wide area

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ISP	Service	Coverage	Start up costs	Bandwidth/ product price
Africa Online	Broadband	Coverage map available from Service provider.	-	Shared 64kbps – $350.00 Shared 256kpbs – $1350.00 Dedicated 64kbps –$650.00 Shared 128kpbs – $850.00 Dedicated 128kbps – $1,500.00
	Leased line	Countrywide	-	Shared 64kbps – $425.00 Shared 128kpbs – $1,000.00 Dedicated 64kbps – $725.00 Shared 256kpbs – $300.00 Dedicated 128kbps – $1,650.00
	VSAT	Countrywide	-	Customized according to the client's needs
Bush net	Broadband	Arua, Bushenyi, Mubende, Masaka, Gulu, Lira, Busia, Mbarara, Fortportal, Hoima, Jinja, Malaba, Kabale, Kamwenge, Kalangala,Kampala	-	Dedicated 32kbps – $250.00 Dedicated 64kbps – $400.00 Dedicated 128kpbs – $600.00
	VSAT	Countrywide	-	Customized according to your location and requirements
Infocom/ Celtel	Dial up	Countrywide	US $ 25	Ugsh. 80,000 per month
	Hotspots	In selected places	-	Free at the moment
	GPRS	Wherever there is Celtel mobile phone network	Purchase a PC card at Ugsh. 368,000	Ugsh. 200,000 per month or 2.774 Ugsh. Per Kilo byte
	Metronet/ Broadband (WIMAX)	Countrywide	Depends on your site	Dedicated16/32 – $180.00 Dedicated 64/64 – $300.00
Latest Technology International (LTI)	Broadband	Kampala, Entebbe, Mukono and Jinja	Depends on your site.	16/16 kbps- $135.00,16/32 kbps-$185.00 32/32 kbps-$235.00, 32/48 kbps-$265.00 48/48 kbps-$295.00, 48/64 kbps-$325.00 64/64 kbps-$350.00, 64/128 kbps-$440.00 64/256 kbps-$515.00, 128/128 kbps-$495.00 128/256 kbps-$785.00 256/256 kbps-$1,200.00 256/512 kbps-$1,600.00 512/512 kbps-$2,500.00

Kampala Siti Cable	Broad band (Fiber Optic)	Kampala and it's environs	Domestic & small network users-$50	**Domestic & Small Network users** **1 Gold plan** (Connectivity throughout) 16kbps- $ 50 with one Email address free 32kbps- $100 with one Email address free **2 Silver plan** (Connectivity from 6.30pm-8.30am) 16kpbs-$25 with one Email address free 32kbps-$50 with one Email address free
			Corporates - $100	**Corporates** 48/16kbps-$150 one Email address free 64/32kbps-$200 Two Email addresses free 96/32kbps-$300 Two Email addresses free
			Cyber Cafes - $200	**Cyber Cafes** 64/32kbps-$325 96/32kbps-$475 128/32kbps-$575 192/48kbps-$850
MTN	CDMA	Coverage map available from the provider	Ugsh. 260,000	Ugsh. 90,000 per month
	GPRS	Wherever there is MTN mobile phone network	a) Using a PCMCIA card- 415,000 b) Using an FCT- 260,000 c) Using a USB- 421,000	Ugsh. 90,000 per month
	Broadband (WIMAX)	Countrywide	Depends on your site	**64/32 kbps** In Kampala-$510 Outside Kampala-$740 **64/64kbps** In Kampala-$660 Outside Kampala- $890 **156/128Kbps** In Kampala $1,950 Outside Kampala $2,530

One2net	Dial up	Countrywide	No installation cost	160 Uganda Shillings per minute
	Broadband	Kampala & its environs	-	Dedicated 48kbps – $250.00 Dedicated 128kpbs – $400.00
	VSAT	Countrywide	-	Customised according to your location and requirements
SpaceNet	Dial up	Countrywide	No installation cost	US$ 15.00 per month
	Broadband	Kampala & its environs	-	Dedicated 48kbps – $250.00 Dedicated 128kpbs – $400.00
	VSAT	Countrywide	-	Customised according to your location and requirements
UTL	Dial-up	Countrywide	Have a phone line & 30 USD set up fee	Rental $25.00 plus 75 Ugsh per minute during off peak 100 Ugsh per minute during peak
	Hot spots	In selected hotels		Buy a 5,000.00 Uganda shillings for 30 minutes
	Broadband	Countrywide	-	Dedicated 64kbps – $325.00 Dedicated 96kbps – $525.00 Dedicated 128kbps – $650.00 192k-$ 975 256k- $ 1,300 384k- $ 1,950
	Leased lines	Countrywide		64kpbs – $90.00 128kpbs – $170.00 256kbps – $300.00
	VSAT	Countrywide	Installation 3,000.00	64kbps- $ 252 32/32kbps- $537 128/64kbps-$1,612 128kbps- $900 48/32kbps- $671 128/128kbps-$2,150 256kbps- $2,070 48/48kbps-$806 192/48kbps-$2,015 64/32kbs-$806 256/128kbps-$3,225 64/64kbps-$1,075 256/256kbps-$4,300 96/48kbps- $1,209 128/32kbps-$ 1,343

NB:
- Start-up costs have been difficult to establish because they are determined by your location. However, it's more expensive to set up connectivity upcountry.
- All this information was provided by the ISPs
- ISPs that have not been listed on this table did not submit their pricing information.

Steps to get connected

The challenge of using the Internet in Uganda is not learning to use a dozen new programs; it is getting connected at a reasonable cost.

Getting the right Internet connection may mean one phone call to a friend who is "in the know", or it could mean many phone calls and research. Getting a connection to the Internet is like designing a house; there are options to consider, choices to make and in the end, a worthwhile price.

No matter which method of access you want, you need to know specific things about service providers before making decision as to which one to use. Arm yourself with the information in this guide and then begin contacting promising service providers and ask questions.

Critical issues to consider in selecting a connectivity option

It is only after answering the following questions that it will become clear what the best option for an ISP and bandwidth would be.

I.   What is the Internet going to be used for? Email, Data etc
II.   What is the intended number of users, and how many computers will be connected?
III. What time of day will you use the Internet?
IV.   Internet connection definitely comes with operational costs e.g. monthly subscription and maintenance fees. How will those costs be met?
V.   How much are you willing to pay?

You also need to consider the following critical issues after installation:

I.   Monitoring the bandwidth to ensure that you receive what you are paying for
II.   A rebate plan in case the service is not delivered by the ISP as agreed (Please refer to Service Level Agreement section below).
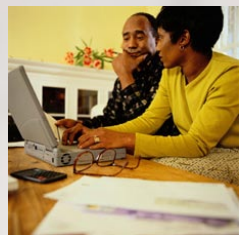
Useful Tips

What should you look for in a service provider?

Speed of the connection

For dial-up connections, you need to find out the fastest speed your host can support. Transferring that large file at 2,400 bits per second (bps) can feel like agony, so you need to get the fastest connection you can.

Remember the faster your connection, the faster you will be able to download your files and watch those videos while you listen to the online radios.

Reliability and performance

Nothing is more frustrating than trying to log in to check your Email or surf the web only to find that your connection is down. The problem is worse when you need to send an important Email immediately. Although loss of service can happy with any ISP, some are more reliable than others. One of the ways to gauge the reliability of an ISP is to interact with other users of the ISP.

Technical Support

While you are asking questions about an ISP's service, think about their technical support. Find out whether there is a technical support hotline, technical support Email or a voice-mail system where you can leave a message.

Service Level Agreement

A Service Level Agreement (SLA) is a formal written agreement made between two parties: In this case it is the ISP and the service recepient.The SLA establishes the level of service that ISP ought to offer. Currently most ISP provide the SLA to the client. The SLA should include:

1) What service(s) are provided to you
2) How the service will be delivered (what technology will be used)
3) How the service provider will monitor or track and report on perfomance (gauging performance)
4) When the SLA will be reviewed and how to make changes to the SLA
5) Specification of hours and days the service will be offered, including testing, maintenance and upgrades
6) Specification of the number and location of users for which the service will be offered
7) Explanation of problem reporting precedures, including conditions of escalation to next higher level of support
8) Specification of customer repsonsibilities such as training, maintenance of equipment, proper use of resources provided
9) A rebate plan in case the service is not delivered by the ISP as agreed

Frequently used Terminologies

Bits- It's an abbreviation for "Binary digits". It's the smallest piece of digital Information consisting of either 0 or 1, which might be compared to a light bulb being OFF (=0) or ON (=1). Eight Bits make up a Byte.

Kbps- (Kilo bits per second) - Thousands of bits per second. It's a measure of bandwidth (see explanation below). Higher bandwidths are conveniently expressed in Mega bits per second (Mbps-millions of bits per second). How much bandwidth are you buying or intend to buy?

Bandwidth - With the Term Bandwidth, think of a highway with cars. Bandwidth is the number of lanes on the highway and traffic is the number of cars on the highway. If your car is the only one on the highway, you can travel very quickly and if you are stuck in the middle of the rush hour, you may travel very slowly since all the lanes are being used up.

Bandwidth is a term used to describe how much data you can send through a connection i.e. the number of cars that can pass through the highway at a given time.

Local-Area Network (LAN)-A group of computers and associated devices, usually in one building, that are connected in a way that lets them communicate and interact with each other. However, one LAN can be connected to other LANs over any distance via telephone lines or radio waves and a system of LANs connected in this way is called a Wide Area Network (WAN).
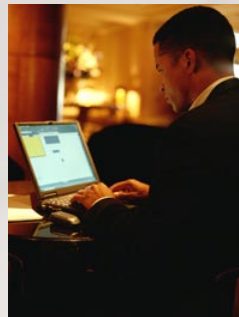
WWW (World Wide Web)-A revolutionary browsing system that allows navigation of the Internet by 'pointing and clicking'. The Web is a spider web-like interconnection of millions of pieces of information located on computers around the world.

Browser - A Software application that allows users to access and navigate the World Wide Web. Some commonly used web browsers include Internet Explorer, Mozilla, Netscape and Fire Fox. Simply, it is an interface between YOU the user and online files!!

Email - Allows users to send and receive messages to each other through the Internet.

ISP (Internet Service Provider) - This is a company/organisation that provides you with access to the Internet. (Refer to the list of registered ISPs in Uganda below)

Modem - Acronym for Modulator Demodulator. This is an electronic device that attaches to a computer and links that computer to the Internet via a telephone line. Modems are available for any computer and can be either internal or external.

List of ISPs currently registered in Uganda

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	ISP	Contacts
1	Africa Online	5th Floor–Commercial Plaza, Plot 7 Kampala Road, P. O. Box 29331 Kampala Uganda, Tel: +25641258143, +256312211200 Fax: +25641258144 Email: info@africaonline.co.ug, Website: www.africaonline.co.ug
2	Afsat Communications (u) Limited	Ground Floor (shopping Arcade), Communications House, P. O. Box. 25745 Tel: +256 41 343780, +256 41 343969, +25641343591, Fax: +25641343334 Email: afsatug@afsat.com, Website: www.afsat.com, www.afsat.ug, www.iwayafrica.com
3	Anupam Global Soft (u) Limited	Plot M567, Banda Industrial Area, Jinja Road, P. O. Box. 70881, Kampala Uganda Tel: 25641288479/ 0712520111, Website: www.anupam.co.ug
4	Bukasa Telecom Limited	Off Martyrs Way, Ntinda Road, P. O. Box. 22995, Kampala, Uganda Tel: 256772712113, Fax: 256312279154
5	Bushnet Limited	Plot 1000 Baka close, Tank Hill- Muyenga, P. O. Box 22849, Kampala Uganda Tel: +256312225200, Fax: +25641225203, Cell: +256752711622
6	Dehezi International Limited	Dehezi Comlex near Former Kiseka Hospital, P. O. Box 16186, Kampala Tel: +25641259211, Fax: +25641236395, Website: www.dehezi.net
7	Digital Lifestyle	2nd Floor Suite 01, Subset Arcade, P. O. Box 16059, Kampala-Uganda Tel: +25641253905/0772409086
8	Infocom	Plot 40, Wampewo Avenue, Celtel House, P. O. Box 8373, Kampala-Uganda Tel: +25641342681, Fax: +24641342192 Email: sales@infocom.co.ug, Website: www.infocom.co.ug
9	Kampala Siti Cable Limited	Rashid Khamis Road Old Kampala, P. O. Box. 24547, Kampala - Uganda Tel: 04134209/0712220121, Fax: 041344466
10	Kanodiko Systems Ltd	People's plaza William street, Nebbi Park, Shop No. 5, Kampala Uganda Tel: 256782602885/8, Tel: 256782632293, Website: www.kanodiko.com
11	Latest Technology International Limited	Nsambya Near Sharing Hall, P. O. Box. 9513, Kampala Uganda Tel: 25677/75-436561, Fax: 25641255008, Email: ikntambi@iti.co.ug
12	MTN (U) Limited	MTN Towers, 22 Hannington Road, P. O. Box 24624, Kampala Uganda Tel:+256312212333, Fax:+256312341976, Email: mtn@mtn.co.ug , Website: www.mtn.co.ug
13	Multichoice Uganda Limited	95 Buganda Road, P. O. Box 2373, Kampala-Uganda, Tel: +256312245245/+25641330000, Fax: +25641235762, Email:mcuganda@uganda.multichoice.co.za, Website: www.dstv.com
14	One2net	7th Floor, Northern Wing, Workers house, P. O. Box 26411, Kampala-Uganda Tel: +256 41 345466, +256 31 2260495, Fax: +25641345468 Email: info@one2net.co.ug , Web: www.one2net.co.ug
15	Uganda Telecom Limited	Rwenzori Courts, P. O. Box 7171, Kampala Uganda, Tel: +25641333200 Fax: + 25641346870, Email: info@utlonline.co.ug , Website: www.utl.co.ug

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