

TIRED OF SLOW & UNRELIABLE INTERNET?

Move with the World: Adopt Broadband and be part of the Digital Society

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State of the Internet in Botswana

Introduction

Botswana Communications Regulatory Authority (BOCRA) is aware of public perceptions that Internet in Botswana remains expensive and slow despite Government's investment in the West Africa Cable System (WACS) and the East Africa Sub Marine System (EASSy) and continued efforts to promote the use of e-Government Services. The concerns are usually based on comparative studies conducted by the International Telecommunication Union (ITU). While there are specific cases where individual customers have negative experience of the internet service offered by their respective suppliers, some of the concerns are a result of lack of information on what constitutes good Internet speed and affordable Internet tariffs.

BOCRA wishes to share the following information to assist consumers in understanding some general issues concerning the internet service in Botswana. Specific evidence based concerns should continue to be addressed to the service provider concerned. In the event of unsatisfactory resolution of the concern by the service provider, the customer may escalate the concern to BOCRA.

The Internet Infrastructure/network comprises three levels.

- Undersea Cables** - West Africa Cable System (WACS) that comes through Namibia and the East Africa Sub Marine System (EASSy) that comes through South Africa link Botswana to the outside world. They provide international connectivity and transport internet content in and out of Botswana.
- Local Loop** - Within the country, there is a fibre optic cable that runs from Gaborone, to Gantsi to Maun, Kasane Francistown and back to Gaborone. The same cable links Maun to Kasane and Sekoma to Bokspits. The cable carries the Internet and voice to all the main population centres in Botswana.
- Last Mile** - This is the line that links the Internet supplier to the customers. Last mile comprise Copper, Fibre, Wifi, Wireless (WIMAX), ADSL or Mobile
- Gadgets** - These are the different devices that consumers use to access the internet. These include among others ; Mobile Phone, Fixed line, tablets, Computer, television etc

Internet Speed

Internet speed is always denoted by bandwidth (Mb) per time. 'Mb' can never be a speed without the time it takes for it to download or upload. So internet speeds should be written as "Mbps" or "Kbps" to specify the time it takes to transmit data.

Internet speed is a product of the following factors:

- Your Workstation**
The power of your workstation determines the speed of your data information processor. The more "power" your workstation has, the faster it can process information. A computer built 10 years ago, with less processing power, will generally not be compared, speedwise, to a computer built in 2015 with a greater processing power. The same applies to mobile handsets, the faster the processor of your mobile handset the faster you will be able to download.
- Connection to ISP**
A dial-up connection is much slower than an Asymmetric Digital Subscriber Line (ADSL) or a cable Internet connection. A dial-up is just that—a dial up that goes over telephone lines—while other Internet connections are much faster. Your connection speed also has a lot to do with your modem; a

lower-level modem won't process information quickly. However, the ISP connection is only a single piece of the Internet speed puzzle.

- Internet Service Configuration**
One often overlooked area, is how the Internet service is configured. If it isn't configured correctly by the Internet service provider, it won't work quickly. Check the speed of an Internet connection from time to time to make sure that it is the speed the provider promised. Many times, providers have varying levels of service and faster Internet service is billed at a premium. Make sure the provider gives you the Internet speed which you are paying for.
- Internet Traffic**
Have you ever gone onto a website and waited and waited for it to load? It may have less to do with your computer than with Internet traffic on the site you are trying to access. If a large number of people try to access the site at the same time, some will be able to access the site and others won't because of high internet traffic. Other factors affecting speed include the power of the server hosting the pages or files of the site that is being accessed. More powerful servers allow for a large number of people to access the same website concurrently. Internet connections offered on high-speed networks such as an ISDN connection, a cable modem, a digital subscriber line (DSL) and Wi-Fi (mobile, public Internet) or secure corporate Internet connections make websites load almost instantaneously, often in a matter of seconds.
- How far away are you from the exchange?**
If you live a fair distance from the phone exchange then you won't be able to exploit maximum speeds. People who live closer to the exchange get faster speeds every single time because they are closer to the exchange point.

A **download** time is affected by the factors highlighted above. In addition, there is line sharing (also known as contention ratio), time of day (peak and off-peak hours), and quality of wiring (in your house and in the street).

It is common for a customer to experience internet speeds that differ from what appears on paper. This isn't always the fault of the service provider as it is sometimes dependent on who you are connecting to and where they are. The exception to this rule is when you're signed up to 'a fibre to the premises' broadband service which is not affected by the distance from the exchange. However, your speed will still be impacted by the number of customers using the service at any one time.

Quite a number of factors affect the speed of internet, so consumers have to be aware of these factors to enjoy fast and reliable broadband internet connectivity.

QUICK FACTS: UNDERSTANDING BROADBAND CONNECTIVITY

What is Broadband? Often broadband is associated with a particular speed of transmission or a certain set of services, such as digital subscriber loop (DSL) or wireless local area networks (wLANs). However, since broadband technologies are always changing, the definition of broadband also continues to evolve. Today, the term broadband typically describes recent Internet connections that are faster than earlier Internet dial-up technologies.

Broadband combines connection capacity (bandwidth) and speed

Typically broadband access has the following characteristics.

Fast	Reliable	Always On
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Botswana aspires for every Motswana to have at-least 2 Mbps Internet connection to the household.

Are you aware of existing Broadband Technologies in our Market?

Digital Subscriber Line		This service is provided via a telephone line. Supports voice, video and data. e.g. ADSL, WDSL Speed: up to 50 mbps
Fibre		<ul style="list-style-type: none"> Provides higher bandwidth via fibre Dedicated service e.g. FTTx Speeds: Up to 100 GBPS
Mobile		<ul style="list-style-type: none"> Via mobile dongle 3G/ 4G Connection via your mobile network are mobile broadband technologies 3G speeds: Average speed 6.1 mbps 4G: speeds: Average speed 15.1 mbps
Wi-Fi		Wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections.
Wimax		Is a specification for fixed broadband wireless
Cable Modem		Cable modem service enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your TV set. Most cable modems provide transmission speeds of 1.5 Mbps or more. Subscribers can access their cable modem service by simply turning on their computers, without dialing-up an ISP. You can still watch cable TV while using it. Transmission speeds vary depending on the type of cable modem, cable network, and traffic load. Speeds are comparable to DSL.
Satellite		Satellite broadband is another form of wireless broadband, and is also useful for serving remote or sparsely populated areas. Downstream and upstream speeds for satellite broadband depend on several factors, including the provider and service package purchased, the consumer's line of sight to the orbiting satellite, and the weather. Typically a consumer can expect to receive (download) at a speed of about 500 Kbps and send (upload) at a speed of about 80 Kbps. These speeds may be slower than DSL and cable modem, but they are about 10 times faster than the download speed with dial-up Internet access.

Quality of Service

As a consumer you are as responsible as your service provider for the quality of the broadband service you receive.



- On different days and at different times, ADSL network performance will be affected by a host of variables. Lucky, the Internet has a lot of apps such as Speedtest, that can be used to give an estimate reading of your connection. You may also contact your services provider to request for your network performance.
- Acquire an end user device with the ability to sustain the connection you need.



Quality of service is all about how good the internet connectivity is and how reliable the service is. Talking to peers who already have an internet connection can assist one in deciding which service provider to choose. Everyone has his/her own user patterns. Some just browse the internet whilst others are heavy users who download and stream videos. It is therefore important to know your user patterns before choosing your internet connection.

Know Your Service Providers

Broadband Internet can be purchased only from BOCRA licensed Internet Service Providers. For a list of Value Added Network Service (VANS) providers

internet prices visit the BOCRA website at <http://www.bocra.org.bw/>. It is important to choose your service provider wisely to avoid moving from one service provider to another and incurring more costs. If it happens that there is a need for information on terminating service or contract, the information can be obtained from respective service providers.

Are you aware of Broadband Internet Prices?

Visit the service provider of your choice for more information on prices or refer to the latest publication of internet prices on the BOCRA website. As a consumer, you have to be conscious of what you pay for to get value for your money. Choose packages that suit your needs. Be mindful of the contract duration you enter into. Below are some of the components of your monthly bill;

- Monthly subscription/ bandwidth charge
- Access charge
- Once off connection fee
- Cost of equipment e.g modem/router/dongle
- Bundled service- email accounts, VOIP
- After sales support

Usage Limits

Some service providers offer unlimited data, which means customers can download and upload unlimited amount of data. Others restrict the amount of data that can be downloaded or uploaded. Customers should be mindful of what they are paying for and be cognizant of any extra charges they can incur for exceeding data limits.

Be a wise consumer, buy smart and continue using Broadband for betterment of your lives and people around you. Contact various service providers for any information on the parameters defined above.

For any other information and complaints regarding internet service contact:

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