

The background of the page is an abstract, hand-drawn sketch. It features a grid of squares in various colors including red, yellow, blue, green, orange, and purple. Overlaid on this grid are numerous thin, dark lines that intersect at various angles, creating a complex, geometric pattern. The overall style is artistic and architectural.

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1 INTRODUCTION

This assignment will examine five popular Internet connections which are readily available in South Africa at present. The report will conclude which of these Internet connection solutions are best suited to an architectural office of 10 people, based on value for money and quality of service.

2 WHAT CONNECTIONS ARE THERE TO THE INTERNET?

The five most common connections to the Internet in South Africa are:

Broadband ADSL

Broadband telecommunication provides multiple channels of data over a single communication medium, i.e. multiple packets of information are submitted simultaneously via the ADSL line, making broadband faster than serial data transfer. ADSL is short for Asymmetric Digital Subscriber Line and is a type of data communication technology that enables generally fast data transmission over copper telephone lines, or fiber optic cable (which is slowly replacing copper cable as the medium for phone lines).

Cellphone Connection – GPRS, EDGE, 3G, HSDPA

Accessing the internet through a cellphone signal works on the same principal as using your cellphone; connection is through the same network of cell towers that handle the voice and sms communication in cellphones. The signal strength of the cellphone connection depends on your distance and position in relation to the nearest cell tower. The different speeds/types of Internet connection available through a cellphone connection are GPRS, EDGE, 3G and HSDPA

(being the connection with the fastest data transfer speed offered by the cellphone networks).

Wireless

A wireless Internet connection allows access to the Internet over airwaves, needing no hardwired connection, which allows the user to connect to the Internet from any point that is in range of the wireless signal transmitter.

Diginet or Leased Lines

A diginet or leased line is not a dedicated cable, but rather a reserved circuit between two points that span short or long distances. Diginet provides around-the-clock, secure, high quality, point to point services over a diginet transmission network. Leased lines are used by businesses that need to utilize a data network for most of the day through applications that need constant bandwidth. It provides an industry strength connection to the internet and is permanently and exclusively available for your business's use. The connection of the leased line is always active and because the connection doesn't carry anybody else's communications, the service provider can assure a given level of quality.

Satellite

The user connects to the internet via a satellite dish through a satellite orbiting the earth above the equator. The use of satellite connections is mostly confined to rural or similarly undeveloped locations where urban infrastructure such as

fiber optic phone cables are impractical or unavailable, as it is a generally more expensive option due to the high setup costs, and expensive hardware required.

3 COMPARISON OF CONNECTIONS

	Pro's	Con's
Broadband ADSL	<ul style="list-style-type: none"> -High download speeds can be achieved. -ADSL technology eliminates the need for a second phone line by allowing voice and data transfer at the same time. -ADSL doesn't need to convert the data from digital to analogue and back again, improving transfer speed -ADSL connections are always-on. 	<ul style="list-style-type: none"> -You may not have ADSL coverage in your area (an ISP will check for you). -Additional hardware is required; an ADSL modem and ADSL filters are needed to use the service. -A phone line is required, even though it may be not be needed/used by the business. -ADSL connections are always-on, which places the network at a higher risk of penetration than a dial-up connection, and a firewall is recommended to protect your PC.
Cellphone Connection	<ul style="list-style-type: none"> - It is a mobile form of connecting to the Internet and can be utilized away from the office -With an HSDPA connection you can achieve a relatively high download speed. 	<ul style="list-style-type: none"> - Connection speed can be inconsistent and may vary between slow GPRS and HSDPA, depending on signal strength and availability. -Cellphone reception/signal may not be strong in your area, resulting in relatively slow download speeds -More chance of internet being dropped or connection speed being degraded than ADSL, due to fluctuations in signal strength and position relative to cell towers.

		-Can become costly, due to relatively high data transfer costs per volume of data
Wireless	<ul style="list-style-type: none"> - It is a mobile form of connection to the internet within range of the transmitter -No telephone lines are needed to setup the connection. -No wires are used to connect from the service provider to the user making this connection less reliant on physical media which are susceptible to damage or theft - You are always connected to the Internet 	<ul style="list-style-type: none"> - You may not have wireless coverage in your area (an ISP will check for you). -There are higher security risks linked with wireless Internet connection as the signal can be more easily intercepted than on a physical media connection -The download speeds are relatively slower over wireless transition. - You may experience dead spots with no connection in some area's
Diginet or Leased Lines	<ul style="list-style-type: none"> - You are always connected to the Internet -High download speeds are possible -There is reduced network congestion on a private line -A constant connection speed guaranteed -You receive a fixed IP address, which can be used to host internet based services -Allows you to connect to remote offices 	<ul style="list-style-type: none"> - Is very expensive because of a dedicated circuit
Satellite	<ul style="list-style-type: none"> - Remote access in rural or undeveloped locations -High speed connections can be established -No telephone lines are needed 	<ul style="list-style-type: none"> -Increased network latency can cause Internet connection instability which can be detrimental to applications or services requiring a consistent connection (such as conference

	to setup the connection.	calling). -Highly susceptible to weather interference which can degrade or interrupt service.
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Based on the above factors this report will focus on ADSL broadband connections to the Internet.

4 WHO ARE THE SERVICE PROVIDERS AND WHAT DO THEY OFFER? .

In South Africa the service providers of the telephone lines that will connect you to the Internet are Telkom and Neotel. The service providers for Wireless Internet connection are iBurst and Sentech.

Since this report is going to be based on a Broadband ADSL connection, the choice is to rent telephone lines from one of the leading communications companies in South Africa, Telkom. Telkom are the most widely available telephone line providers in the country and have a vast scope and sprawl of infrastructure. Neotel, being the competitor is a fairly new communications company and does not yet have a fully developed telephone cable system and has less chance of being available to connect to the office on immediate notice.

Telkom Lines – Business Customers

Basic Telephone Line Installation: Free with a min of 12 month contract

Basic Telephone Line Monthly Rental: R191,84

DSL Line Monthly Rental: R289,00 for up to 1024kb/s line

Total Per Month = R480,84

The 1Mb/s line is a good fit for the office because an architectural office does not run many programs that rely on a constant connection to the Internet. And not all people in the office will be involved in bandwidth intensive research at the same time within the office environment. A 1Mb/s line will allow for sufficient email download times and a quick response to light surfing of the Internet. This line should also allow Internet conference calling to be made sufficiently without interruption or small amounts of lag.

In South Africa the service providers that give you the bundles of bandwidth for broadband ADSL are abundant. The service providers range from big corporations like Telkom, Mweb and Afrihost to smaller internet businesses. There will be a comparison of Broadband ADSL connection packages for a 1024kb/s line from Telkom, Mweb, Afrihost and Openweb.

Shaped vs Unshaped and Capped vs Uncapped Broadband ADSL services.

Shaping in terms of an Internet connection refers to the bandwidth(speed) of a connection, while capping refers to the volume of data which can be transferred. Shaped ISP services prioritise certain intern protocols (such as Internet browsing and email), while limiting bandwidth allocated to others (such as downloads).

An unshaped ADSL account does not throttle the bandwidth provided to any on-line activity, meaning that this type of service is faster for certain activities, but generally more expensive than the shaped version. Several ISP's will shape the connection of the highest volume users, in line with an acceptable use policy,

this is to prevent abuse of the connection, and to ensure fair distribution of available bandwidth among all subscribers.

Shaped or unshaped connections are available both for capped and uncapped services.

A capped service will allow only a limited amount of data to be transferred (both uploaded and downloaded) before the ISP will block a user's connection, while an uncapped connection has no such limit, and any volume of data may be downloaded.

The prediction for a 10 person office is that 10GB of data should suffice for an average month, the capped packages will reflect the 10GB or the closest amount offered to 10GB in the different categories. However it might help to keep in mind that when purchasing a capped bundle, that the more data you purchase upfront the cheaper it will be per GB.

Volume	Capped		Uncapped	
Bandwidth	Shaped	Unshaped	Shaped	Unshaped
Linespeed (Kbps)	1024	1024	1024	1024

Telkom doBroadband	R149,00 (10GB)	R799,00 (30GB)	R1049,00	N/A
Mweb	R190,00 (10GB)	N/A	R199,00	R799,00
Afrihost	N/A	R190,00 (15GB)	R197,00	R697,00
OpenWeb	R569,00 (10GB)	R490,00 (10GB)	R229,00	R999,00

Because an Architectural office is not a big torrent downloader the Internet bundle would not benefit the office greatly by being an unshapped package.

Because the office still relies on the Internet for access to information, to communicate and to occasionally do broadband intensive research, it makes sense not to limit the amount of data that can be accessed and/or transferred. The cost of having an uncapped broadband ADSL bundle is close to that of a 10GB capped bundle allowing for greater use of the resources at hand.

As Afrihost offer the best shaped uncapped ADSL bundle at R197,00 per month, this is the chosen Internet service provider for the data bundle.

The total cost of the Internet connection to the office will be R677,84 per month

5 CONCLUSION

Based on the requirements of an Architectural office of 10 people, and the data above, a broadband ADSL connection to the Internet is the best suited solution. This connection is readily available over telephone lines which are abundant in the urban infrastructure setup. Without the need for the guaranteed transfer rate of a dignet line, the ADSL offers a relatively constant connection with low chances of signal loss. For an architectural office that does not require its staff to work remotely, the significantly cheaper costs for an ADSL line compensate for the data price premium attached to the flexibility of the cellphone internet connection. Wireless internet connections cannot offer the transmission rates available on ADSL, and connection availability is limited to smaller pockets of coverage, which cannot be guaranteed to include the site of the office.

As shown above, service providers have a wide variety of bundles to choose from, and if not investigated properly you may end up paying a significant amount more for a service you can receive at the fraction of the cost.

Sometimes it is not always beneficial to invest all your resources in one big service provider but to break down the services and get the best value for your money.

7 REFERENCE LIST

- Alex Tipu, 2012. Pros and Cons of Leased Lines. ? [Cited on 20 May 2012] Available from ezinearticles.com/?Pros-and-Cons-of-Leased-Lines&id=4688856 INTERNET
- Help With PC's, 2012. Internet Connections explained - A guide to dial-up, ADSL and Cable connections [Cited on 20 May 2012] Available from www.helpwithpcs.com/internet/internet-connections.htm INTERNET
- ITNT. Diginet Services [Cited on 20 May 2012] Available from www.itnt.co.za/diginet.php INTERNET
- Ken M, 2008. Pros and cons of wireless internet connectivity? [Cited on 20 May 2012] Available from answers.yahoo.com/question/index?qid=20081105055612AA31Bs5 INTERNET
- Millcreekwireless.com. Wireless Internet Information – isn't satellite internet wireless too? [Cited on 20 May 2012] Available from www.millcreekwireless.com/satellite.htm INTERNET
- Mweb. Internet access. [Cited on 20 May 2012] Available from www.mweb.co.za/productspricing/InternetAccess/ADSL.aspx INTERNET
- Telkom. TI Internet bandwidth usage(allaccess) [Cited on 20 May 2012] Available from business.telkom.co.za/enterprise/broadband-internet/all_access/price.html INTERNET
- Telkom. Monthly Rental (Automatic Exchanges) - Tariff List [Cited on 20 May 2012] Available from www.telkom.co.za/general/pricelist/monthly_rental_auto_manual.html INTERNET
- Webopedia Computer Dictionary. What is broadband? [Cited on 20 May 2012] Available from www.webopedia.com/TERM/B/broadband.html INTERNET
- Webopedia Computer Dictionary. What is ADSL? [Cited on 20 May 2012] Available from www.webopedia.com/TERM/A/ADSL.html INTERNET
- Whatis.com. What is satellite Internet connection? [cited on 20 May 2012] Available from searchnetworking.techtarget.com/definition/satellite-Internet-connection INTERNET
- Wiki.Answers. Advatages of leased line connections [Cited on 20 May 2012] Available from wiki.answers.com/Q/Advantages_of_leased_line_connections INTERNET