



A young child with dark hair, wearing a red and white patterned shirt, is looking at a tablet computer. The child's face is partially visible on the left side of the page. The background is a soft, out-of-focus grey.

Chapter 2

Internet access spending and advertising

Louis de Jager
Manager, PwC Southern Africa

Elenor Smith
Manager, PwC Southern Africa

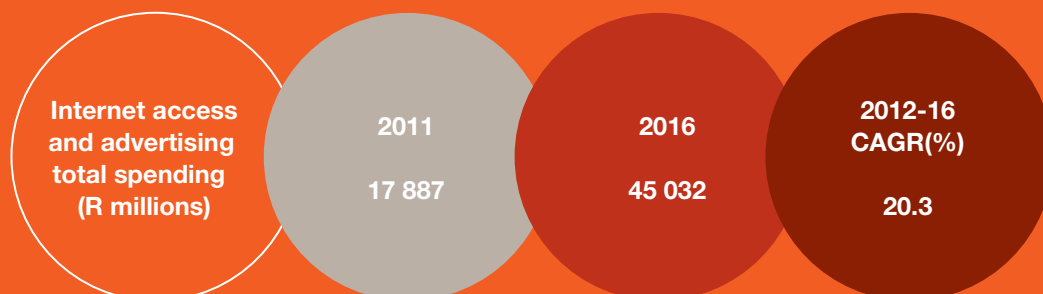
Internet access is a key driver of entertainment and media advertising and content spending in most segments. The Internet market consists of spending by consumers to access the Internet and spending by advertisers.

Internet wired and mobile access revenue consists of fees paid by consumers to wired Internet service providers (ISPs) and to wireless carriers for Internet access via mobile devices, whether provided as a standalone service or as part of a bundle in which the Internet component is estimated. Figures do not include the purchase of online content such as music, videos or games. The figures for spending on entertainment content downloaded over the Internet or through mobile phones are included in the respective content chapters.

Internet advertising, wired and mobile, consists of spending by advertisers on banner/display, classified, paid search, video and other online formats such as e-mail and sponsorships; and advertising delivered to mobile devices, such as smartphones and tablets via formats designed for those devices. The Internet advertising category includes online and mobile television, newspaper, consumer magazine, trade magazine, directory advertising and radio, which are also included in the respective content chapters. To eliminate any double counting, figures for total advertising are presented in this chapter's Overview section.

Outlook

... at a glance



Internet access and advertising: wired and mobile (R millions)

	2011	2016	2012-16 CAGR (%)
Access spending			
Wired			
Dial-up	540	16	-50.5
Broadband	4 489	14 040	25.6
Total wired Internet access	5 029	14 056	22.8
Mobile access	12 180	27 720	17.9
Total Internet and mobile access	17 209	41 776	19.4
Advertising			
Internet advertising	565	1 950	28.1
Mobile advertising	113	1 306	63.1
Total advertising	678	3 256	36.9
Total Internet access and advertising	17 887	45 032	20.3

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

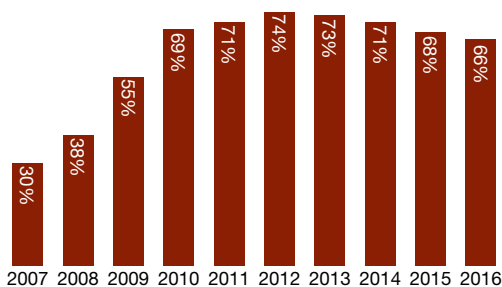
...in brief

- Fibre network rollouts and the extension of the broadband infrastructure into under-served areas will drive broadband subscriptions and fuel broadband spending.
- Increased competition and penetration is resulting in lower prices, but this is expected to be partly offset by rising prices for premium services.
- Smartphone penetration growth and faster mobile access speeds will drive growth in the mobile Internet access market.
- The wired broadband access market is expected to grow at higher rates than the mobile access market over the forecast period in contrast to the trend of the past few years.
- Growing traffic on social networking sites and increased time spent online is attracting advertising and fuelling growth in banner/display advertising.
- Growth in tablet penetration and increased use of smart mobile devices will propel mobile advertising.
- Total Internet access and advertising spending is expected to grow at a 20.3% compound annual rate from R17.9 billion in 2011 to R45.0 billion in 2016.

Overview

Internet access is a key driver of entertainment and media advertising and content spending in most segments. In South Africa the Internet is currently accessed principally through mobile devices. Mobile access spending accounted for 71% of total access spending in 2011, compared to 30% in 2007. This is due to smartphones becoming more popular, the wireless infrastructure being available to more people than the broadband infrastructure and the relatively high broadband prices limiting wired broadband penetration.

Figure 1.1: Mobile access spending as a percentage of total access spending



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

In spite of relatively high prices, wired broadband capacity is expected to grow dramatically in the next few years. South Africa had fibre capacity of 2.69 terabytes per second (Tbps) at the end of 2011 and this figure is expected to jump by 450% to nearly 12Tbps by the end of 2012. This is due to the West African Cable System (WACS) that has become commercially available and also as the Africa Coast to Europe (ACE) becomes operational. Capacity is then expected to rise to 24Tbps, nearly ten times the current capacity, when the South-Atlantic Express (SAex) is completed in 2013.

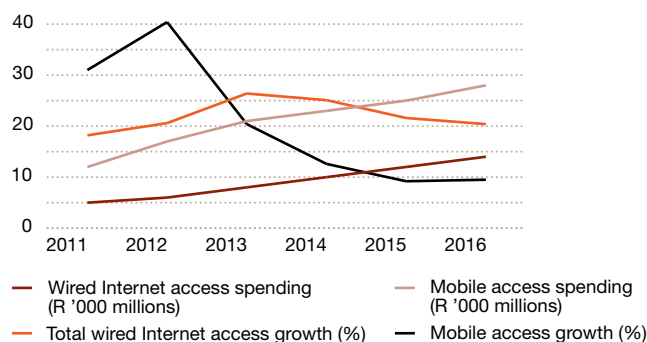
The WACS and the ACE cable links Western Africa to Europe, while the SAex will provide connectivity to Brazil and the United States and in future provide onward connectivity to India, China and other Asian countries through SEACOM.

In addition to developments in international connectivity, domestic broadband will benefit from new Ka-band telecommunications satellites that will provide Internet access to areas not currently served by the wired infrastructure.

The shutdown of analogue television signals, now rescheduled for June 2015, will free up valuable spectrum in the 800MHz band that will be allocated to mobile broadband. The availability of this spectrum will facilitate the emergence of Long Term Evolution (LTE) 4G technologies that will provide for fast mobile broadband.

During the past five years mobile access spending grew much faster than wired broadband spending. With new international cables coming online and faster growth in the number of fixed broadband households, we now expect wired broadband to be the faster-growing sector during the next five years, with growth of 17.9% projected over the forecast period. The mobile access spending market is, however, expected to remain the largest component of the Internet access spending market throughout the forecast period.

Figure 1.2: Internet access spending



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The number of Internet users in South Africa rose to 8.9 million in 2011, nearly twice the 4.6 million total in 2008. Growth has principally been driven by a surge in the number of mobile broadband users, which jumped to 5.8 million in 2011 from only 600 000 in 2008.

Over the next five years, we expect wired broadband to grow faster than mobile broadband, expanding at a 32.8% compound annual rate to 6.6 million users in 2016. Nevertheless, there will still be 3.5 times as many mobile broadband users as wired broadband users in 2016 at 23.1 million, up 31.8% compounded annually from 2011.

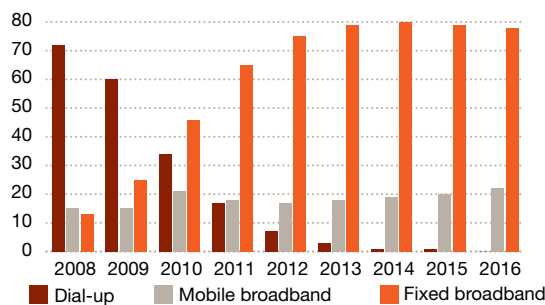
The total number of Internet users will increase at a 27.3% compound annual rate to 29.8 million in 2016.

Internet users (millions)

Technology	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Dial-up	3.3	3.2	2.3	1.5	0.9	0.5	0.3	0.2	0.1	-41.8
Fixed broadband	0.7	0.8	1.4	1.6	2.2	3.0	4.0	5.2	6.6	32.8
Mobile broadband	0.6	1.3	3.1	5.8	9.5	13.2	16.8	20.1	23.1	31.8
Total	4.6	5.3	6.8	8.9	12.6	16.7	21.1	25.5	29.8	27.3

Sources: Internet World Stats, Wide World Worx, PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

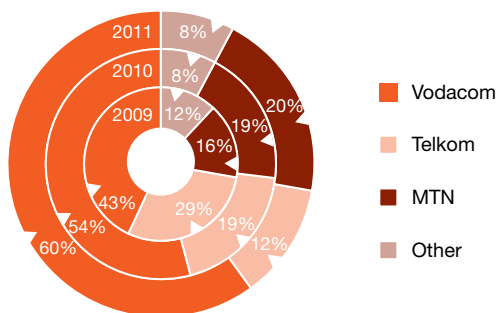
Figure 1.3: Internet users as a % total Internet users



Sources: Internet World Stats, Wide World Worx, PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The large increase in mobile broadband generated share gains for Vodacom and MTN, the principal mobile providers. Vodacom’s share of broadband users increased to 60% in 2011 from 43% in 2009, while MTN’s increased to 20% from 16% in 2009. Telkom’s share dropped from 29% in 2009 to 12% in 2011.

Figure 1.4: Distribution of broadband subscribers (% 2009, 2010 & 2011)



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

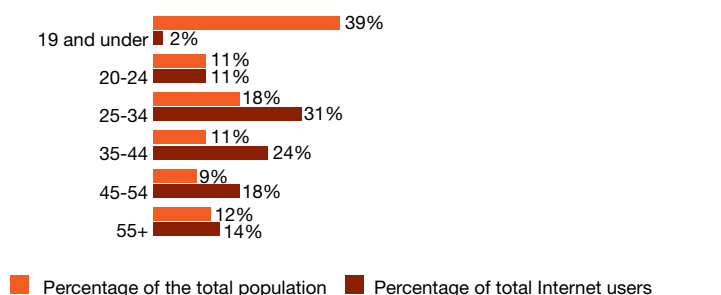
With respect to demographics, usage is concentrated among people in the 24-44 age group. This group accounted for 55% of all Internet users, nearly twice its share of the population.

The incidence of Internet usage among people aged 45 and older was also higher than its share of the population. This segment of the population represents 21% of the total population, but 32% of total Internet users.

Export your own data selections to Excel and PDF.
Visit Outlook online at www.pwc.co.za/outlook

Among the younger groups, the share age of Internet users in the 20-24 age group was 11% in 2011, matching its share of the population. Among people 19 and younger, only 2% were Internet users, well below their 39% share of the population.

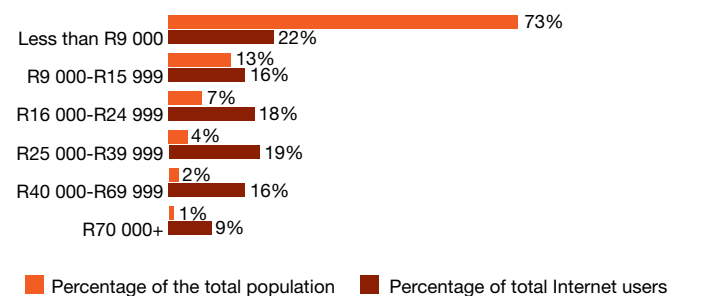
Figure 1.5: Distribution of Internet users by age in South Africa



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

With respect to income, the incidence of Internet use rises significantly with income, reflecting the relatively high price of broadband in South Africa. People in households with monthly incomes of R9 000 or more accounted for 78% of all Internet users even though this group represents only 27% of the population. In contrast, only 3% of households have monthly incomes of R40 000 or more, but people in these households comprise 25% of all Internet users.

Figure 1.6: Distribution of Internet users by income



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The Internet market as a whole grew 27.3% in 2011, three-quarters of which was driven by growth in mobile access spending. Total access spending increased 27.0% and advertising grew by 35.6%.

After rising at single-digit rates through 2009, fixed broadband access spending accelerated during the past two years at rates in excess of 20% annually, including a 27.7% advance in 2011, benefiting from the launch of the SEACOM cable in 2009. At the same time, the dial-up market declined by 27.1% in 2011 and by a cumulative 58% since 2007. Total wired access spending rose by 18.2% in 2011.

The new undersea cables will spur the wired broadband market, which we project will expand at a 25.6% compound annual rate. The dial-up market will virtually disappear and total wired Internet access spending will increase at a projected 22.8% compound annual rate to R14.1 billion by 2016.

Growth in smartphone penetration and the rollout of LTE networks will drive mobile access spending, which we expect will reach R27.7 billion in 2016, a 17.9% compound annual increase from R12.2 billion in 2011.

Total Internet access spending will increase at a projected 19.4% compound annual rate to R41.8 billion in 2016 from R17.2 billion in 2011.

The jump in wired broadband subscriptions during the past two years boosted growth in wired Internet advertising, which rose by 25.6% in 2011 and by 54.8% cumulatively since 2009. As the wired broadband subscriber base expands, we anticipate faster growth in wired Internet advertising, which we expect will average 28.1% compounded annually during the next five years.

A growing mobile Internet subscriber base will boost mobile advertising. From a small base, we expect this market to expand at a 63.1% compound annual rate by 2016.



Total Internet advertising will increase at a 36.9% compound annual rate to an estimated R3.3 billion in 2016 from R565 million in 2011. The overall Internet market will rise to an estimated R45 billion by 2016 from R17.9 billion in 2011, averaging growth of 20.3% compounded annually.

Internet access and advertising: wired and mobile (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Access spending										
Wired										
Dial-up	1 280	1 071	900	741	540	306	144	90	42	16
Broadband	2 441	2 640	2 862	3 514	4 489	5 760	7 524	9 504	11 628	14 040
Total wired Internet access	3 721	3 711	3 762	4 255	5 029	6 066	7 668	9 594	11 670	14 056
Mobile access	1 584	2 268	4 680	9 300	12 180	17 100	20 592	23 184	25 326	27 720
Total Internet and mobile access	5 305	5 979	8 442	13 555	17 209	23 166	28 260	32 778	36 996	41 776
Advertising										
Internet advertising	255	350	365	450	565	790	1 050	1 350	1 650	1 950
Mobile advertising	4	8	20	50	113	237	420	662	957	1 306
Total advertising	259	358	385	500	678	1 027	1 470	2 012	2 607	3 256
Total access and advertising	5 564	6 337	8 827	14 055	17 887	24 193	29 730	34 790	39 603	45 032

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Internet access spending

Wired access

Growth in fibre capacity and falling prices will drive broadband subscriptions during the next five years. With the opening of various undersea cables, fibre capacity is expected to be 10 times higher in 2013 than it was at the end of 2011.

The West Africa Cable System (WACS), which landed in South Africa in April 2011, entered into commercial use in May 2012. The WACS links South Africa and other countries in Africa to servers in Europe.

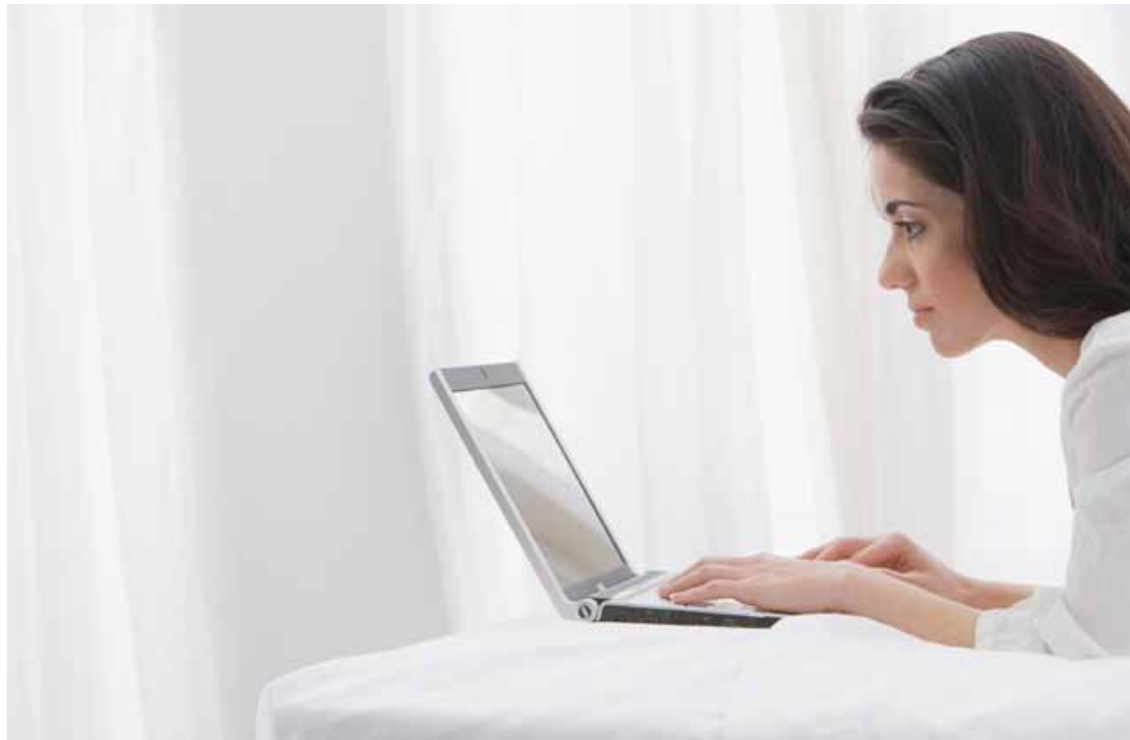
The Africa Coast to Europe (ACE) undersea fibre-optic cable, which will connect South Africa and the west coast of Africa with France, is expected to be completed by the end of 2012, and the South Atlantic Express (SAex), which will connect South Africa, Angola, and other countries in Africa with Brazil and then to the United States, is expected to be completed in mid 2013.

SAex will have 10 times the capacity of SEACOM, which became operational in 2009, and will have 2.5 times the capacity of WACS and ACE. The opening of WACS, ACE and SAex will have a huge impact on wired broadband capacity and will lead to a further drop in average costs. The combination of lower costs and faster speeds will boost the fixed broadband market during the next five years.

WASACE Cable Company is a multinational company that is planning to build an undersea cable system across the Atlantic Ocean, offering connectivity from Africa to the United States through its WASACE North cable, as well as from Africa to Latin America through its WASACE South and WASACE Africa cables. It will also provide potential connectivity from India to the United States over Africa and Latin America.

There have also been various parties showing interest in the BRICS cable project, a proposed 34 000km cable system with 12.8Tbps capacity linking the BRICS nations (Brazil, Russia, India, China and South Africa) to the United States. The BRICS cable will also link the WACS, EASSY and SEACOM together.

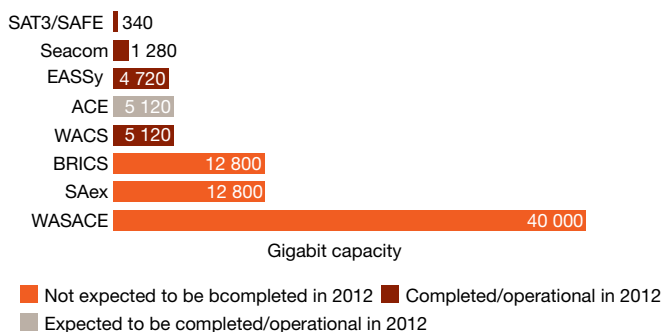
Cisco estimates that Internet traffic in South Africa will be 10.5 times higher in 2016 than in 2011.



Growth in capacity will facilitate increased usage while driving down costs, as well as enabling service providers to provide faster connection speeds. Fast broadband is becoming particularly important as the Internet is increasingly being used to download, upload, and share videos, games, music, movies, TV shows, newspapers, books, magazines and other content. Homes with multiple connected devices, including games consoles that allow online game playing and downloads or streaming of movies and other content, as well as multiple broadband users in the household, require higher bandwidth to handle increased traffic.

Telkom started upgrading its services, raising minimal DSL speeds from 384kbps to 1Mbps in the second half of 2012, as well as migrating all their 1Mbps ADSL lines to 2Mbps, which will result in uncapped subscribers having to pay more to upgrade to the higher-speed packages. Telkom has also announced that it has begun rolling out 3 700 multi-service access nodes (MSANs) that will replace 2 700 older generation cabinets and add another 1 000 cabinets to its infrastructure. The MSANs can be used to offer higher-speed ADSL (ADSL2+), very-high-bit-rate digital subscriber line (VDSL), and fibre-to-the-home (FTTH) services. The new infrastructure will allow Telkom to deliver speeds of up to 1Gbps using fibre as the last mile, or up to 40Mbps using Telkom’s existing last-mile copper infrastructure. Telkom is also planning to increase the speed of its entry-level ADSL package to 2Mbps and commercially introduce a new top-end ADSL service of 40Mbps by 2015.

Figure 1.7: Undersea fibre optic cables in South Africa



Source: <http://manypossibilities.net/african-undersea-cables>

Telkom announced in September 2012 that it is launching its high-speed broadband pilot project. The trial will continue until 31 January 2013, enabling ADSL2+ and VDSL over existing copper wires at speeds of 20Mbps and 40Mbps. Telkom will approach current 10Mbps TelkomInternet ISP customers to offer them access to the pilot. At the time of writing, Telkom had not announced any pricing information.

Various broadband providers have recently lowered the pricing of their capped and uncapped ADSL packages. This was facilitated by Telkom lowering its IP connect rates in April 2012 with a 30% decrease, allowing service providers to cut their costs, which ultimately lowered prices for consumers.

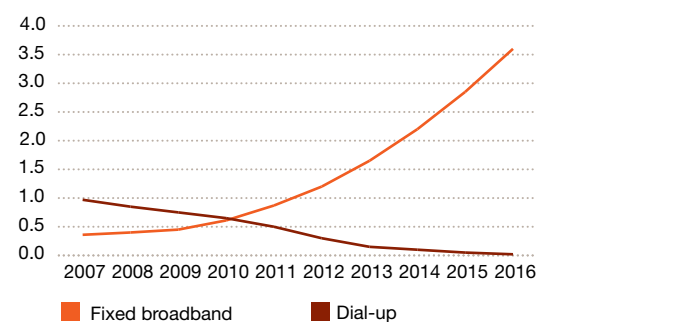
Telkom reduced its entry level 384kbps fast Internet service from R219 per month to R169 per month (excluding line rental) for a 5GB capped service on a 24-month contract. The service will be upgraded later in 2012 to 1Mbps. MWeb reduced its premium uncapped and unthrottled 10Mbps service from R1999 to R999 per month for consumers. MWeb and Telkom have been setting the trend for broadband prices in South Africa for the past couple of years. MWeb was first to reduce the price of its uncapped plans, followed by many other providers, including Telkom, Afrihost, Web Africa, Cybersmart and Axxess.

The ADSL market has become extremely competitive, with providers aggressively reducing prices, sometimes even pricing their offerings at cost price to ensure they attract or maintain market share.

Faster speeds, lower prices and uncapped service will boost broadband subscriptions, which we project will increase to 3.6 million by 2016, a 32.8% compound annual increase from 870 000 in 2011. Fixed broadband household penetration will reach an estimated 37.0% in 2016 from 9.0% in 2011.

Growth in fixed broadband will come in large part from dial-up subscribers trading up. The number of fixed broadband subscribers overtook the dial-up subscriber base for the first time in 2011. We expect the dial-up market to virtually disappear, dropping to only 20 000 subscribers by 2016 from 500 000 in 2011 and nearly one million as recently as 2007.

Figure 1.8: Wired Internet households (millions)



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The overall number of fixed Internet households rose by 8.7% in 2011. As the dial-up subscriber base disappears, overall growth will more closely reflect broadband growth. We expect the overall wired Internet household base to expand at rates in excess of 20% annually from 2012.

Government remains committed to achieving 100% broadband penetration by 2020 as described in the ICT Industry Competiveness and Job Creation Compact signed last year by the late communications minister Roy Padayachie. The cost of rolling out this plan is budgeted at approximately R90 million. South Africa’s telecoms sector has already committed billions to improving access to broadband, with Vodacom spending more than R7 billion and MTN spending more than R4 billion on improving the infrastructure of their local operations in the past year.

FibreCo, a partnership formed in 2010 between Cell C, Internet Solutions and Convergence Partners is considered integral to Government’s goal of achieving 100% broadband penetration. FibreCo kicked off the first phase of a 12 000km fibre-optic network in May 2012 and plans to invest R5 billion in a long-distance fibre-optic network over the next five years.

The total number of wired Internet households will reach an estimated 3.6 million in 2016 from 1.4 million in 2011, a 21.5% compound annual increase. Household penetration will rise to 37.2% in 2016 from 14.2% in 2011.

Wired Internet households (millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Dial-up	0.97	0.85	0.75	0.65	0.50	0.30	0.15	0.10	0.05	0.02	
% change	-7.6	-12.4	-11.8	-13.3	-23.1	-40.0	-50.0	-33.3	-50.0	-60.0	-47.5
Fixed broadband	0.36	0.40	0.45	0.61	0.87	1.20	1.65	2.20	2.85	3.60	
% change	44.0	11.1	12.5	35.6	42.6	37.9	37.5	33.3	29.5	26.3	32.8
Total	1.33	1.25	1.20	1.26	1.37	1.50	1.80	2.30	2.90	3.62	
% change	2.3	-6.0	-4.0	5.0	8.7	9.5	20.0	27.8	26.1	24.8	21.5

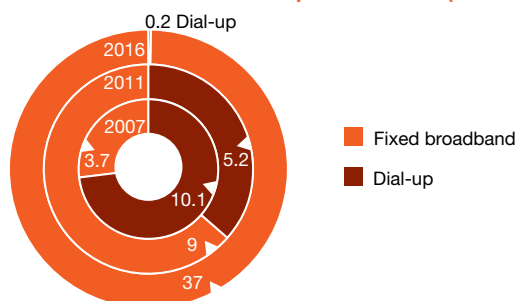
Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Wired Internet household penetration (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dial-up	10.1	8.8	7.8	6.7	5.2	3.1	1.5	1.0	0.5	0.2
Fixed broadband	3.7	4.1	4.7	6.3	9.0	12.4	17.0	22.7	29.4	37.0
Total	13.8	13.0	12.4	13.0	14.2	15.5	18.6	23.7	29.9	37.2

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Figure 1.9: Wired household penetration % (2007 vs 2011 vs 2016)



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Broadband prices are affected by a number of conflicting trends. Growth in capacity will put downward pressure on pricing. At the same time, increased capacity will facilitate faster speeds and we expect a growing share of subscribers will opt for high-speed services even if this is at a higher fee, which will put upward pressure on pricing.

On balance, we project average monthly spending to continue to fall, but at somewhat slower rates compared with the past two years when decreases averaged nearly 10%. We expect that the average broadband subscriber will pay R325 per month in 2016, a 35.4% compound annual decrease from 2011.

Broadband access spending will increase from R4.5 billion in 2011 to approximately R14 billion in 2016, a 25.6% compound annual increase.

Filter digital and nondigital spending data.

Visit Outlook online at www.pwc.co.za/outlook

Wired broadband access market

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Subscribers (millions)	0.36	0.40	0.45	0.61	0.87	1.20	1.65	2.20	2.85	3.60	
% change	44.0	11.1	12.5	35.6	42.6	37.9	37.5	33.3	29.5	26.3	32.8
Average monthly fee (R)	565	550	530	480	430	400	380	360	340	325	
% change	-27.6	-2.7	-3.6	-9.4	-10.4	-7.0	-5.0	-5.3	-5.6	-4.4	-5.4
Broadband access spending (R millions)	2 441	2 640	2 862	3 514	4 489	5 760	7 524	9 504	11 628	14 040	
% change	4.3	8.2	8.4	22.8	27.7	28.3	30.6	26.3	22.3	20.7	25.6

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Dial-up access market

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Subscribers (millions)	0.97	0.85	0.75	0.65	0.50	0.30	0.15	0.10	0.05	0.02	
% change	-7.6	-12.4	-11.8	-13.3	-23.1	-40.0	-50.0	-33.3	-50.0	-60.0	-47.5
Average monthly fee (R)	110	105	100	95	90	85	80	75	70	65	
% change	-0.9	-4.5	-4.8	-5.0	-5.3	-5.6	-5.9	-6.3	-6.7	-7.1	-6.3
Dial-up access spending (R millions)	1 280	1 071	900	741	540	306	144	90	42	16	
% change	-8.5	-16.3	-16.0	-17.7	-27.1	-43.3	-52.9	-37.5	-53.3	-61.9	-50.5

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Dial-up market

Dial-up serves areas not reached by the wired or mobile broadband infrastructures and households that cannot afford or do not wish to pay for broadband.

During the next five years, as mobile and wired broadband availability increases, we expect dial-up subscribers to switch either to wired, mobile or satellite broadband.

Dial-up fees have been trending down in recent years and we expect these decreases to continue during the next five years with the average fee falling to R65 by 2016.

Dial-up access spending will drop from R540 million in 2011 to R16 million in 2016, a 50.5% compound annual decrease.

Mobile access

Most people who access the Internet in South Africa do so using a mobile device. The mobile Internet subscriber base rose 87.1% in 2011 to 5.8 million, reflecting a jump in smartphone penetration and rollouts of higher-speed services. It also reflects the growing shift to mobile across the entire entertainment and media industry.

Mobile Internet access extends access to entertainment and media beyond the home, allowing consumers to access content whenever and wherever they want. Cisco estimates that mobile traffic in South Africa will be 49 times higher in 2016 than in 2011.

The surge in smartphone use and the growth in mobile Internet subscriptions are putting strain on wireless networks. This is because smartphone users download 10-50 times as much data as users of feature phones, which are cell phones that do not have their own operating systems, generally cannot download apps and offer only limited access to the Internet. To sustain mobile Internet usage, wireless carriers are upgrading their networks to LTE, a 4G standard that provides up to 10 times the speed of 3G networks.

Rollouts of LTE services will increase access speeds and further propel the market. Although LTE licences have not yet been issued by ICASA, various mobile service providers have already started LTE trials and installed LTE base stations. MTN installed 200 LTE base stations in Gauteng running on 10Mhz of re-farmed 1 800MHz spectrum with speeds of 70Mbps, while Vodacom began an LTE trial in 2011 and has announced that approximately 60% of its base stations are LTE ready. Mobile service providers have noted that the biggest challenge to launching LTE commercially is the scarcity of spectrum. 8ta is currently upgrading its entire mobile network, which will assist in making its network LTE ready.

However, it is not expected that 8ta will launch LTE services before mid 2013. iBurst plans to roll out 2 500 LTE base stations in 2012 and has confirmed an LTE launch by the end of 2012, which will not exclude sharing its infrastructure with other service providers. iBurst currently holds frequencies in the 2.6Hz band, but this may be re-allocated when the spectrum is finally auctioned by the regulator. Although LTE is an exciting new technology that has the potential to significantly change the mobile access market, until the delayed analogue shutdown finally occurs in 2015, spectrum for LTE is expected to remain scarce.

By 2016, most mobile phones will be smartphones. Smartphones are particularly suited for mobile Internet access because of their touchscreen capabilities and full keyboards. Growth in smartphone penetration will be accompanied by growth in mobile Internet access. Smartphone penetration will be fuelled by lower handset prices specifically developed for lower-income markets.

In 2011, 11% of mobile telephone subscribers accessed the Internet through their mobile devices, a figure we project will rise to 40.5% by 2016. The number of mobile Internet subscribers will increase to 23.1 million in 2016, a 31.8% compound annual increase from 2011.

Average monthly spending on mobile access has declined in recent years. We expect growing competition to lead to continued declines in average prices during the next five years. By 2016, the average mobile subscriber will pay R100 per month compared with R175 per month in 2011.

Mobile Internet penetration will reach 77.5% in the United States in 2016 from 36.3% in 2011. As recently as 2009, only 9.5% of the US population accessed the Internet through mobile devices.

Source: Global entertainment and media outlook 2012-2016 (PwC, 2012)

Cell C recently announced standard data tariff plans for as low as 15c/MB. Cell C is also the second operator (after MTN) to introduce standard rates per megabyte irrespective of whether used in or out of bundle. In comparison, Vodacom’s out-of-bundle rates are currently between R1 and R2/Mb. Due to the significant competition in the market and the fact that consumers require data packages that are tailored to their individual needs, mobile operators are offering various data packages at discounted prices to attract consumers. Bulk pre-paid data deals are currently offered at extremely low rates, such as Cell C’s 24GB anytime prepaid data package for R1 299 (R0.05/GB), reduced from R2999. 8ta’s 120GB promotion offers 60GB of anytime data and 60 GB of data available between 11pm and 5 am at R1 800 (R0.03/Mb).

For those not needing or not able to afford bulk data packages, Vodacom recently launched micro-data packages for as little as R5 for 5MB or R12 for 20MB. Users of these packages are also not required to commit to a contract. These packages are valid for use on the day of purchase only. MTN offers a similar service with 10MB for R10. Mobile operators also launched other data packages for light Internet users, such as MTN’s Facebook and Mxit promotion for R29 per month, in which users don’t gain access to the whole Internet, but only to these social networking sites.

Some mobile operators now also offer throttled uncapped data packages, although these packages do require that consumers enter into a 12 or 24-month contract. We expect data packages to become even cheaper and further tailored to the needs of the individual as mobile penetration, competition and network speed increase in the market.

Satellite broadband is also growing its service offerings in South Africa in order to provide connectivity to rural and farming communities. Telkom, Vodacom Business and Vox Telecom have recently introduced new satellite broadband offerings, on the Y1-B satellite, which is the first Ka-band satellite in Africa. Ka-band satellites transmit mainly highly-focused, overlapping ‘spot beams’, each covering a relatively small area, which allows for access to greater bandwidth at a lower cost. Vox, in conjunction with Abu Dhabi-based telecoms group Yahsat, has launched Yahclick, an affordable lower-cost, high-speed satellite broadband service marketed to both rural and outlying areas in South Africa.

The first Wi-Fi enabled flight took place in South Africa on 8 May 2012, through a partnership between Wireless G, Mango and Vodacom. This is a first for Africa, as well as for the entire Southern Hemisphere. The service starts at R50 per 3 hours of access. Mango is planning to have the service installed in all its planes by the end of the year. The second phase of the project is to offer live television services on flights.

Aggregate mobile Internet access spending will rise from R12.2 billion in 2011 to R27.7 billion in 2016, a 17.9% compound annual increase.

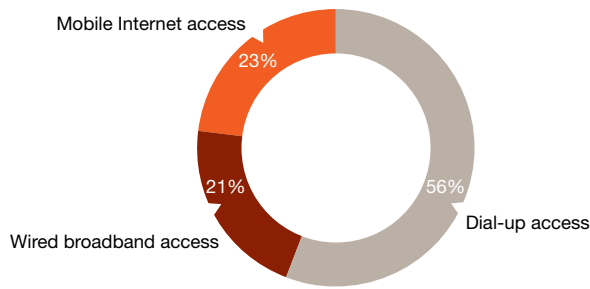
The rest of Africa is leading the way with Movitel of Angola and MTC of Namibia being the first operators in Africa to deploy LTE services, followed by Emtel in Mauritius and Smile Technologies in Tanzania, who launched their commercial LTE services in May and June 2012 respectively.

Mobile Internet access market

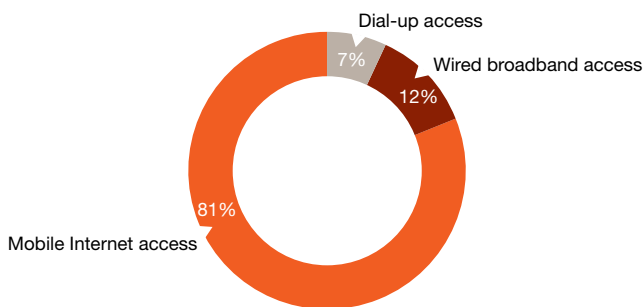
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Mobile telephone subscribers (millions)	42.3	45	46.4	50.4	52.5	54	55	56	56.5	57
Percent accessing Internet through mobile devices (%)	1	1.3	2.7	6.2	11	17.5	24	30	35.5	40.5
Mobile Internet access subscribers (millions)	0.4	0.6	1.3	3.1	5.8	9.5	13.2	16.8	20.1	23.1
Average monthly spending (R)	330	315	300	250	175	150	130	115	105	100
Aggregate annual spending (R millions)	1 584	2 268	4 680	9 300	12 180	17 100	20 592	23 184	25 326	27 720

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

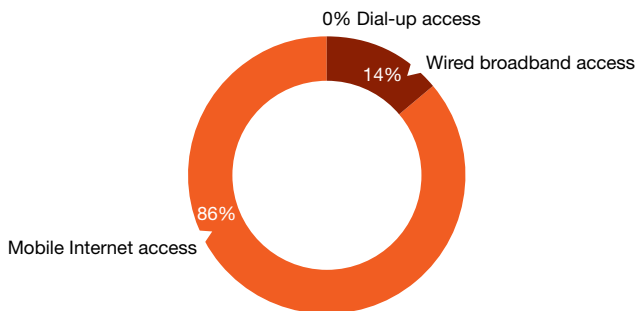
Figure 1.10: Internet access subscribers 2007



2011



2016



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Total wired access spending will grow at a projected 22.8% compound annual rate during the next five years from R5 billion in 2011 to R14.1 billion in 2016.

Total Internet access spending, including mobile access, will increase from R17.2 billion in 2011 to an estimated R41.8 billion in 2016, growing at a 19.4% compound annual rate.

Bringing Internet to the masses

Small towns in SA are setting the trend for Wi-Fi access in South Africa. Knysna has a network that uses Wi-Fi at over 200 hotspots in most areas of the business district and some suburbs, while Stellenbosch has begun piloting a free Wi-Fi network to everyone in the town. Although large downloads are prohibited, all other services are supported.

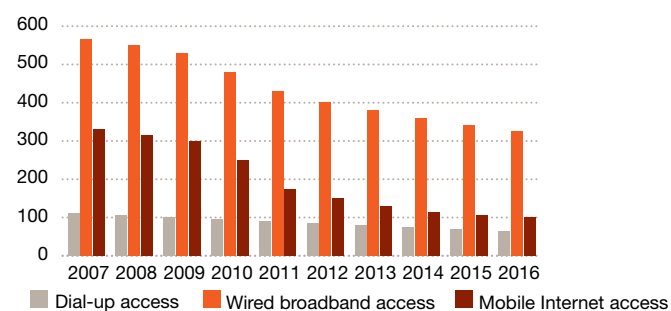


Internet access spending (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Wired											
Dial-up	1 280	1 071	900	741	540	306	144	90	42	16	
% change	-8.5	-16.3	-16.0	-17.7	-27.1	-43.3	-52.9	-37.5	-53.3	-61.9	-50.5
Broadband	2 441	2 640	2 862	3 514	4 489	5 760	7 524	9 504	11 628	14 040	
% change	4.3	8.2	8.4	22.8	27.7	28.3	30.6	26.3	22.3	20.7	25.6
Wired total	3 721	3 711	3 762	4 255	5 029	6 066	7 668	9 594	11 670	14 056	
% change	-0.5	-0.3	1.4	13.1	18.2	20.6	26.4	25.1	21.6	20.4	22.8
Mobile	1 584	2 268	4 680	9 300	12 180	17 100	20 592	23 184	25 326	27 720	
% change	—	43.2	106.3	98.7	31.0	40.4	20.4	12.6	9.2	9.5	17.9
Total access spending	5 305	5 979	8 442	13 555	17 209	23 166	28 260	32 778	36 996	41 776	
% change	41.9	12.7	41.2	60.6	27.0	34.6	22.0	16.0	12.9	12.9	19.4

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Figure 1.11: Average monthly fee (R)



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates



Advertising

Wired Internet advertising

Internet advertising rose at double-digit annual rates during the past two years, benefiting from share gains from the print media and rising broadband penetration. People are spending more time online and advertisers are spending more money to reach them. The Internet is also an increasingly important shopping channel and advertisers place value on reaching people when they are making purchases.



Most visited sites in South Africa

2012	2011
Google South Africa	Google South Africa
Facebook	Facebook
Google	Google
YouTube	YouTube
Yahoo!	Yahoo!
BidorBuy	Wikipedia
Gumtree	Twitter
Wikipedia	News24
News24	Blogger
LinkedIn	Gumtree

Most visited local sites in South Africa

Site	URL
News24	news24.co.za
Howzit	howzit.co.za
IOL	iol.co.za
MyBroadband	mybroadband.co.za
Sport24	sport24.co.za
SuperSport	supersport.co.za
TimesLive	timeslive.co.za
JunkMail	junkmail.co.za
Webmail	webmail.co.za
Vodacom	vodacom.co.za

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The Internet also offers advertisers formats that are not available in other media. Search advertising allows advertisers to target their messages to the identified interests of the user as reflected by the searches they initiate.

Search engine sites are very popular in South Africa. Google South Africa was the leading website in 2011 in terms of visitors. The international Google site ranked third and Yahoo! was fifth. The ability to reach a selected audience known to have a specific interest in a product or service makes search an appealing format for advertisers, a functionality that is unavailable in other advertising forms.

The Internet also has an advantage over print in the classified advertising market because users can filter information to include only the information relevant for their individual needs. Classified advertising is also less expensive than print, can be easily changed, is typically not as limited in respect to the word count and can be inserted at any time. The inability of the print media to regain lost classified advertising is a major reason why print is losing share to the Internet.

The emergence of social media is yet another driver of Internet advertising. Social network sites are popular in South Africa with three social networking sites in the top 10 most visited sites in South Africa. Information sites such as Wikipedia, News24 and Independent Online (IOL) also are widely visited. Among local sites, News24, Howzit and IOL were the most visited in 2011. Sports sites also attract significant traffic in South Africa with Sport24 and SuperSport among the top 10 local sites visited.

And frankly, I will say this: I hate being marketed to personally. If I'm online researching whatever ... I'm going to get the answer myself. I don't need somebody to tell me how to do it. Like I'm good, guys. I've got it covered ... Don't call me, I'll call you.

Sponsored search is the leading online advertising category at R300 million in 2011, more than half the R565 million in total spending. Google is the dominant search engine and the leader in generating search advertising. We expect search advertising to increase at a 28.1% compound annual rate to R1 billion in 2016.

Display was the fastest-growing category during the past two years, fuelled principally by advertising on social network sites. Social network sites are attracting large audiences, many of whom are young. Social networks are among the most-visited sites in South Africa.

Consumer, aged 35-54

Source: PwC Consumer Intelligence Series, "Consumer privacy: What are consumers willing to share" (PwC, 2012)

Facebook was the leading social network site in South Africa in 2011 and the second-most visited site overall. YouTube ranked fourth overall and LinkedIn was the tenth most visited site. MXit and Twitter are also popular social network sites in South Africa.

The growing popularity of social networks is contributing to faster growth in display advertising. We project display advertising to continue to be the fastest-growing category, averaging 30.1% growth compounded annually to R692 million in 2016 from R186 million in 2011.

The remaining portion of the market consists of classified, rich media, video and other advertising. Classified advertising is very sensitive to the state of the economy, falling 11.3% in 2009 but rebounding thereafter with gains of 18.2% in 2010 and 21.5% in 2011. BidorBuy and Gumtree are popular classified advertising sites, ranking sixth and seventh most visited in 2011.

We project classified/other advertising to grow at an average of 23.2% compounded annually to R224 million in 2016 from R79 million in 2011.

Overall, wired Internet advertising will reach an estimated R2 billion in 2016, a 28.1% increase compounded annually from 2011.

Wired Internet advertising (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Search	117	179	193	239	300	420	560	718	876	1 034	
% change	67.1	53.0	7.8	23.8	25.5	40.0	33.3	28.2	22.0	18.0	28.1
Display	77	109	117	146	186	265	357	466	578	692	
% change	54.0	41.6	7.3	24.8	27.4	42.5	34.7	30.5	24.0	19.7	30.1
Classified/other	61	62	55	65	79	105	133	166	196	224	
% change	1.7	1.6	-11.3	18.2	21.5	32.9	26.7	24.8	18.1	14.3	23.2
Total	255	350	365	450	565	790	1,050	1,350	1,650	1,950	
% change	41.7	37.3	4.3	23.3	25.6	39.8	32.9	28.6	22.2	18.2	28.1

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

The Global Ads Chart powered by social video platform Unruly is published monthly and measures the success of online video advertising campaigns.

The number one ad in May 2012 was Nike's 'My time is now' featuring a star studded clash between France, and the Netherlands in the Euro 2012. It attracted more than 600 000 shares on Twitter, Facebook and the blogosphere in May alone.

Abercrombie and Fitch came in first in June 2012, with a video of various male models from A&F miming the popular track – 'Call me maybe'. The ad got more than 1.3 million shares on social platforms in June.

Source: www.reelse.com



Internet access: the legal landscape...

Access to the Internet raises a range of legal issues as online advertisers, service providers and mobile carriers alike jostle for consumer attention. Social media marketing practitioners should comply with the legal requirements of traditional advertising and those presented by online activity. Internet Service Providers (ISPs) and mobile operators should take into account the provisions of the Electronic Communications Act and the Electronic Communications and Transactions Act, the prevailing legal instruments impacting the medium. The provisions of the Consumer Protection Act and the recommendations of standards set by industry bodies should also be taken into consideration. The following issues potentially raise liability in this arena:

- **Advertising:** Electronic communications licensees are required through their licences to comply with the ASA Code of Conduct.
- **Click fraud:** This occurs when a competitor repeatedly clicks on ad listings without intending to make a purchase. Search engines should install click protection systems and pay-per-click auditing services.
- **Customer registration:** Electronic communications service (ECS) providers are required to collect, verify and retain specified information.
- **Digital rights management:** Technical measures that protect digital information products.
- **Dissemination of defamatory material, hate speech, obscenity and indecency:** Ease of publication presented by the Internet requires service providers to be particularly mindful of the legal consequences for these actions.
- **False advertising:** All claims and statements about products and services on a website must be true, correct and complete.
- **Framing and linking:** The facilitation of public access to proprietary media content raises copyright issues. Permissions must be clarified in the website's Terms and Conditions of Use.
- **Interception and monitoring:** ISPs are under a statutory obligation to assist law enforcement authorities in this regard.
- **Internet service providers' liability:** There is no general obligation on ISPs to monitor services provided to customers, but action has to be taken once the ISP becomes aware of the unlawful content or conduct.
- **Keyword spamming:** Use of another entity's trademark to move customers away from the original trademark owner's website.
- **Licensing:** ISPs that do not own their own communications links will require an ECS licence.
- **Mobile Internet considerations:** Intellectual property rights, privacy, contractual obligations, labour law and jurisdiction need to be considered.
- **Online gambling:** Should ISPs provide services to the providers of illegal interactive gambling services and be aware of the activity, such ISPs may be seen as facilitating or acting as an accessory to the provision of illegal interactive gambling services.
- **Privacy:** Privacy rights are infringed when information is published and/or distributed without the provider's consent. New challenges presented by impending protection of personal information (POPI) legislation regarding social media marketing encompass the collection of personal information and how such information is handled by the collector.
- **Security:** The ECT Act provides for electronic communications security. Suppliers of goods and services are required to specify their security procedures and privacy policy. Where electronic payment is offered, such payment system must be sufficiently secure.
- **Social media:** Disclosures need to be regulated, such as unauthorised disclosure of confidential information and trade secrets, intellectual property infringement, loss of privacy, unauthorised publication of photographs, reputational harm, brand damage and loss of competitive advantage.

Denise Fouché - Technology Legal Advisory Services, PwC

Mobile advertising

Advertising delivered to mobile devices, excluding test message ads from carriers, totalled R113 million in 2011, more than twice the level in 2010.

Many wired sites also have mobile sites. News24, SuperSport, Sport24, IOL, JunkMail and Vodacom, which are among the most popular local wired sites are also among the most visited local mobile sites.

Growing smartphone and tablet penetration and the launch of 4G wireless networks will boost entertainment and information consumption on mobile devices. Growth in mobile entertainment and information, in turn, will attract mobile advertising.

The principal driver of mobile advertising is growth in mobile Internet usage. The number of mobile Internet access subscribers is projected to increase from 5.8 million in 2011 to 23.1 million in 2016, which will significantly expand the reach of mobile advertising. Additionally, mobile phones can reach young people who are often difficult to reach through more traditional media formats.

Low mobile ad rates are attracting advertisers. Annual advertising per mobile Internet subscriber averaged less than R20 in 2011, compared with more than R400 per Internet household for wired Internet advertising. As the mobile access market expands, advertisers will allocate more resources to mobile advertising.

We expect that by 2016, annual advertising per mobile access subscriber will be R56.55, a 23.8% compound annual increase from 2011.

Aggregate mobile advertising will rise to a projected R1.3 billion in 2016, a 63.1% compound annual increase from 2011.

Mobile Internet advertising (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Mobile Internet subscribers (millions)	0.4	0.6	1.3	3.1	5.8	9.5	13.2	16.8	20.1	23.1	
% change		50.0	116.7	138.5	87.1	63.8	38.9	27.3	19.6	14.9	31.8
Annual mobile advertising per mobile subscriber	9.59	14.00	15.21	16.20	19.45	24.95	31.80	39.40	47.60	56.55	
% change		46.0	8.6	6.5	20.1	28.3	27.5	23.9	20.8	18.8	23.8
Aggregate mobile Internet advertising (R millions)	4	8	20	50	113	237	420	662	957	1 306	
% change		100.0	150.0	150.0	126.0	109.7	77.2	57.6	44.6	36.5	63.1

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Total Internet advertising

Total Internet advertising will increase from R678 million in 2011 to a forecast R3.3 billion in 2016, growing at a 36.9% compound annual rate.

Mobile advertising will account for an estimated 40.1% of total Internet advertising in 2016 compared with 16.7% in 2011.

Filter advertising and consumer spending data across segments.

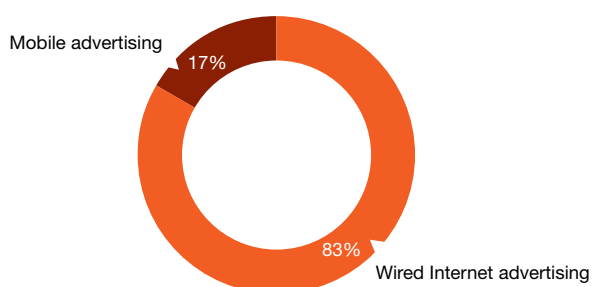
Visit Outlook online at www.pwc.co.za/outlook

Internet advertising: wired and mobile (R millions)

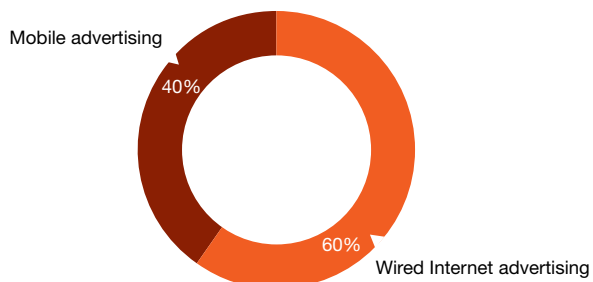
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Wired Internet advertising	255	350	365	450	565	790	1 050	1 350	1 650	1 950	
% change	41.7	37.3	4.3	23.3	25.6	39.8	32.9	28.6	22.2	18.2	28.1
Mobile advertising	4	8	20	50	113	237	420	662	957	1 306	
% change	—	100.0	150.0	150.0	126.0	109.7	77.2	57.6	44.6	36.5	63.1
Total advertising	259	358	385	500	678	1 027	1 470	2 012	2 607	3 256	
% change	43.9	38.2	7.5	29.9	35.6	51.5	43.1	36.9	29.6	24.9	36.9

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Figure 1.12: Distribution of wired Internet advertising spending 2011



2016



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Consumer privacy – What are consumers willing to share?

Through PwC’s ongoing consumer research programme in the United States, directional insights on consumer attitudes and behaviours in the rapidly changing media landscape are gained. In 2012, a two-phase programme was conducted to gain a better understanding of what consumer’s online privacy habits and preferences are.

Today’s consumers are eager for companies to deliver exciting, personalised services – and for the most part, they are willing to share personal information to get it. The majority of consumers have accepted the fact that companies collect and use their personal information, sharing basic information such as names, addresses, gender, and even home phone numbers.

But getting consumers to share more in-depth personal information, such as access to their mobile phone data or their behaviours and habits related to the Internet, games or media content, requires companies to offer something in return. Consumers expect benefits in exchange for their personal data, such as free goods or services, or even non-monetary incentives, such as not having to watch ads or getting exclusive updates about new stores or restaurants. Consumers also want companies to be transparent about what information they collect and how it will be used.

Above all, consumers want to be in control of their personal information. That means being able to ‘opt out’ or turn off the flow of information from companies. For businesses, this willingness to share information represents rich opportunities to reach and connect with consumers in new and exciting ways. Companies can encourage consumers to share more information by educating them about the benefits, being transparent about their practices, and marketing to younger demographics, which are more willing than their older counterparts to reveal personal data.

The key findings from the research indicate that:

- **Consumers will share their information if there is something in it for them.** The majority of survey respondents (73%) were willing to share personal information, depending on the benefits they will get in return.
- **The more personal the information, the less consumers are willing to share it.** Consumers are more willing to share broad demographic data and information about their use of media content because they see it as being less personal and more anonymous. However, consumers are less willing to share more sensitive information that might compromise their private interests, such as their web browsing history; information about their personal social lives, such as mobile texting data or call history; or information related to their identity or security such as social networking passwords, banking or financial information or their social security number.

Although more than 50% of respondents are highly willing to share information such their gender/marital status, their TV programming preferences and online movie/video/gaming preferences, less than 20% are willing to share their web browsing history, cellphone number, medical or financial information or mobile SMS details.
- **Consumers want to feel in control.** Consumers want honesty and transparency. In our surveys, 80% of respondents said they were willing to share personal information if the company lets them know upfront how they are going to use it. Consumers feel more comfortable sharing information if they understand the benefits to them individually or as part of a larger group.
- **TV, media and gaming habits are fair game.** Most consumers (53-69%) are generally willing to share information about their media use, such as television habits, movie and video preferences, and online gaming behaviour, because they perceive this type of information as non-personal and they want better programming/gaming options.
- **My mobile is off limits.** Consumers are not willing to share mobile content, specifically, their conversations, text messages and contacts. Only 4- 11% of consumers were willing to share this information. This trend is driven by consumers' desire to protect what they consider to be their lifeline. Their cell phones and mobile devices are personal and they want to keep it that way. Consumers also recognise that they turn off their computers, but they never turn off their mobile.

If a business uses their mobile to send information, the consumer feels like they can't escape.

- **Consumers prefer to share information via email** as it is considered less personal and allows them to have more control. Consumers feel that they are able to control the flow of information easier via email versus being on the receiving end of SMS text messages, which they can't turn off. As they consider their mobile devices to be more private, they prefer to be contacted via email as this does not feel like an intrusion on their privacy.
- **Don't overstep the privacy boundary.** Overall, consumers claim to have a fairly low privacy boundary. When presented with various scenarios related to the use of personal information, consumers thought being solicited by an unknown company was the most significant example of overstepping the privacy boundary – still, only 19% identified this as a problem. In comparison, 16% of consumers thought nothing crossed the privacy boundary. This shows that consumers have a high level of comfort with companies using their information.

While consumers don't believe there is a lot that companies can do to overstep the privacy boundary, security breaches are a different story. The majority of respondents (61%) said they were not willing to continue to use a company's services or products after it experiences a security breach. It is therefore important for companies to re-consider the way in which they interact with consumers. It is all about making consumers feel in control and educating them about how their information is protected.

As there are distinct differences relating to sharing attitudes and behaviours targeted at younger versus older consumer segments, companies should consider targeting their advertising to meet the needs of these different segments. Companies should know that they will have to provide some sort of an incentive to consumers for them to share their information, especially when they want to use mobile marketing strategies.

Source: PwC Consumer Intelligence Series – Consumer privacy: What are consumers willing to share (PwC, 2012)

A lot of information, a lot of benefits. A little information, a little...

Consumer, aged 35- 54

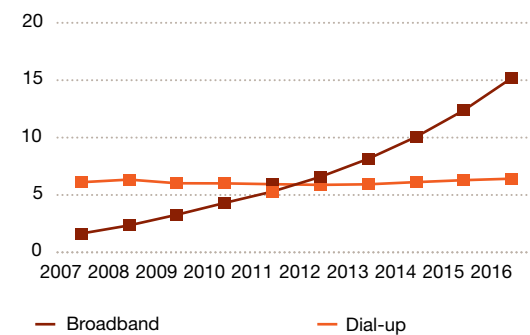
Internet access in Africa

Wired

Telecommunications infrastructure is not well developed in Africa. Only 7.3% of households in Africa were online in 2011. In Western Europe, by contrast, more than three-quarters of all households had an Internet subscription in 2011. Low telephone landline penetration and high costs limits the reach of the Internet in Africa.

Africa is the only region in the world where there are still more dial-up subscribers than broadband subscribers. We expect this to change in 2012 as broadband is taking off in a number of countries, with South Africa among the leaders in broadband growth. By 2016, there will be more than twice as many broadband households as dial-up households.

Figure 1.13: Internet households in Africa (millions)



Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Broadband

South Africa is one of the more advanced countries in Africa, ranking third in the number of fixed broadband subscribers behind Egypt and Algeria. We project South Africa to pass Algeria in 2012.

With respect to broadband penetration, South Africa ranks fifth behind Mauritius, Tunisia, Algeria and Egypt. Higher broadband prices in South Africa limit penetration.

In many countries, fixed broadband is hardly available and is not expected to be readily available in the near term. Even in 2016, broadband household penetration will remain at less than 1% in Cameroon, Ethiopia, Côte d'Ivoire, Kenya, Madagascar, Malawi, Somalia, Tanzania, and Uganda.

Nevertheless, the international undersea cables that will benefit South Africa will also benefit many other countries in the region. We project the total number of broadband households in Africa to nearly triple during the next five years to 15.2 million in 2016 from 5.3 million in 2011, a 23.4% compound annual increase.

Fixed broadband households by country in Africa (millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	0.23	0.39	0.65	0.86	0.95	1.10	1.30	1.60	2.00	2.50	21.4
Angola	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.05	0.06	0.07	18.5
Botswana	†	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	38.0
Cameroon	†	†	†	†	†	†	0.01	0.01	0.01	0.01	—
Côte d'Ivoire	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	24.6
Egypt	0.37	0.62	0.94	1.29	1.65	2.10	2.60	3.20	4.00	5.00	24.8
Ethiopia	†	†	†	†	0.01	0.01	0.01	0.02	0.02	0.02	14.9
Ghana	0.01	0.02	0.03	0.04	0.06	0.09	0.13	0.18	0.25	0.35	42.3
Kenya	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	14.9
Libya	0.01	0.03	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	10.2
Madagascar	†	†	†	0.01	0.01	0.01	0.01	0.02	0.02	0.02	14.9
Malawi	†	†	†	0.01	0.01	0.01	0.02	0.02	0.02	0.03	24.6
Mauritius	0.03	0.04	0.06	0.08	0.09	0.10	0.12	0.14	0.16	0.18	14.9
Morocco	0.43	0.48	0.48	0.49	0.51	0.53	0.56	0.60	0.65	0.71	6.8
Namibia	†	†	†	0.01	0.01	0.01	0.02	0.02	0.02	0.03	24.6
Nigeria	0.03	0.06	0.08	0.09	0.12	0.16	0.20	0.25	0.30	0.35	23.9
Senegal	0.03	0.04	0.05	0.07	0.09	0.11	0.13	0.15	0.17	0.19	16.1
Somalia	†	†	†	†	†	†	†	†	†	†	—
South Africa	0.36	0.40	0.45	0.61	0.87	1.20	1.65	2.20	2.85	3.60	32.8
Sudan	0.02	0.04	0.10	0.16	0.17	0.20	0.24	0.29	0.35	0.42	19.8
Tanzania	†	†	†	†	†	0.01	0.01	0.01	0.01	0.02	—
Tunisia	0.07	0.16	0.30	0.43	0.55	0.70	0.85	1.00	1.15	1.30	18.8
Uganda	†	†	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.07	28.5
Zimbabwe	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	17.6
Total	1.64	2.35	3.28	4.31	5.30	6.58	8.15	10.06	12.38	15.19	23.4

†Fewer than 5 000 or data not available

Sources: International Telecommunication Union, PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Broadband household penetration averaged only 3.4% in 2011. While growth on a percentage basis is expected to be robust, in absolute terms, penetration will remain low during the entire forecast period, rising to only 8.9% by 2016.

We expect that only in Mauritius and Tunisia will a majority of households have a broadband connection by 2016. We project South Africa to rank third in broadband penetration at 37.0% in 2016 with Algeria next at 33.7% followed by Egypt at 27.7%. We expect South Africa to pass both Algeria and Egypt in broadband penetration during the next five years.

We project Angola, Botswana and Morocco to be the only other countries to reach at least 10% penetration by 2016.

Fixed broadband household penetration by country in Africa (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Algeria	3.4	5.8	9.5	12.4	13.6	15.5	18.2	22.1	27.3	33.7
Angola	3.0	5.7	5.6	5.3	7.5	7.1	9.1	10.9	12.5	14.0
Botswana	—	2.6	2.5	2.4	2.4	4.8	4.7	7.0	9.1	11.4
Cameroon	—	—	—	—	—	—	0.2	0.2	0.2	0.2
Côte d'Ivoire	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.6
Egypt	2.4	4.0	6.0	8.0	10.0	12.5	15.2	18.4	22.6	27.7
Ethiopia	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.1
Ghana	0.2	0.4	0.6	0.8	1.2	1.8	2.5	3.4	4.6	6.2
Kenya	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Libya	0.8	2.4	4.8	5.4	6.1	6.7	7.3	7.9	8.4	9.0
Madagascar	—	—	—	0.2	0.2	0.2	0.2	0.4	0.4	0.4
Malawi	—	—	—	0.3	0.3	0.3	0.6	0.6	0.6	0.8
Mauritius	12.0	16.0	23.1	30.8	34.6	38.5	46.2	51.9	59.3	66.7
Morocco	7.0	7.8	7.7	7.7	8.0	8.2	8.6	9.1	9.7	10.5
Namibia	—	—	—	2.3	2.3	2.3	4.5	4.5	4.5	6.7
Nigeria	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9	1.0
Senegal	1.2	1.5	1.8	2.5	3.1	3.7	4.3	4.8	5.3	5.8
Somalia	—	—	—	—	—	—	—	—	—	—
South Africa	3.7	4.1	4.7	6.3	9.0	12.4	17.0	22.7	29.4	37.0
Sudan	0.3	0.5	1.2	1.9	2.0	2.3	2.7	3.2	3.7	4.4
Tanzania	—	—	—	—	—	0.1	0.1	0.1	0.1	0.2
Tunisia	3.4	7.7	14.3	20.3	25.7	32.4	39.0	45.5	51.8	58.0
Uganda	—	—	0.2	0.1	0.3	0.4	0.5	0.6	0.8	0.8
Zimbabwe	0.4	0.9	0.9	1.3	1.7	2.0	2.3	2.5	2.8	3.0
Total	1.2	1.6	2.2	2.9	3.4	4.2	5.1	6.1	7.4	8.9

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Broadband access spending in Africa will increase from R24.2 billion in 2011 to a projected R52.1 billion in 2016, a 16.6% compound annual increase.

South Africa, which comprised 19% of African broadband access spending in 2011, will generate 34% of the total increase during the next five years. In absolute terms, South Africa will be the fastest-growing country.

In percentage terms, we project Ghana and Botswana to grow faster, but from much smaller bases.

Fixed broadband access spending by country in Africa (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	1 449	2 153	3 354	4 128	4 218	4 488	4 992	5 760	6 720	8 100	13.9
Angola	63	110	103	96	133	122	154	180	202	227	11.3
Botswana	†	55	52	48	44	82	77	108	134	162	29.8
Cameroon	†	†	†	†	†	†	38	36	34	32	—
Côte d'Ivoire	63	55	52	48	44	41	77	72	67	97	17.1
Egypt	2 331	3 422	4 850	6 192	7 326	8 568	9 984	11 520	13 440	16 200	17.2
Ethiopia	†	†	†	†	44	41	38	72	67	65	8.1
Ghana	63	110	155	192	266	367	499	648	840	1 134	33.6
Kenya	126	55	52	48	44	43	42	82	79	77	11.8
Libya	63	166	310	336	355	389	420	449	475	499	7.0
Madagascar	†	†	†	48	44	41	38	72	67	65	8.1
Malawi	†	†	†	48	44	41	77	72	67	97	17.1
Mauritius	189	221	310	384	400	408	461	504	538	583	7.8
Morocco	2 709	2 650	2 477	2 352	2 264	2 290	2 352	2 448	2 574	2 726	3.8
Namibia	†	†	†	48	44	41	77	72	67	97	17.1
Nigeria	189	331	413	432	533	653	768	900	1 008	1 134	16.3
Senegal	189	221	258	336	400	449	499	540	571	616	9.0
Somalia	†	†	†	†	†	†	†	†	†	†	—
South Africa	2 441	2 640	2 862	3 514	4 489	5 760	7 524	9,504	11,628	14,040	25.6
Sudan	126	221	516	768	755	816	922	1 044	1 176	1 361	12.5
Tanzania	†	†	†	†	†	41	38	36	34	65	—
Tunisia	441	883	1 548	2 064	2 442	2 856	3 264	3 600	3 864	4 212	11.5
Uganda	†	†	52	48	89	122	154	180	202	227	20.6
Zimbabwe	63	110	103	144	178	204	230	252	269	292	10.4
Total	10 505	13 403	17 467	21 274	24 156	27 863	32 725	38 151	44 123	52 108	16.6

†Negligible or data not available

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Dial-up access

There is still a significant dial-up market in many countries. Angola, Cameroon, Ethiopia, Ghana, Côte d'Ivoire, Kenya, Libya, Malawi, Namibia, Nigeria, Somalia, Sudan, Tanzania, and Zimbabwe had more dial-up households than broadband households in 2011.

Even by 2016, there will still be 11 countries – Angola, Cameroon, Ethiopia, Kenya, Libya, Malawi, Namibia, Nigeria, Somalia, Tanzania and Zimbabwe – where the dial-up household universe will still be larger than the fixed broadband household universe.

In absolute terms, South Africa has one of the largest dial-up markets in Africa, tied with Tanzania and behind Nigeria, Egypt and Libya.

In some countries, dial-up is still in its expansion phase, while in others – Egypt, Mauritius, South Africa, Sudan and Tunisia – there will be fewer dial-up households in 2016 than in 2011 as these countries have more developed broadband markets.

The overall number of dial-up households in Africa will increase at a projected 1.6% compound annual rate from 5.9 million in 2011 to 6.4 million in 2016.

Dial-up households by country in Africa (millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	0.30	0.31	0.33	0.36	0.40	0.44	0.48	0.52	0.56	0.58	7.7
Angola	0.09	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	7.2
Botswana	†	†	†	†	†	†	†	†	†	†	—
Cameroon	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	12.9
Côte d'Ivoire	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0
Egypt	2.25	1.97	1.49	1.20	1.00	0.80	0.70	0.60	0.50	0.40	-16.7
Ethiopia	0.03	0.30	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.20	14.9
Ghana	0.01	0.01	0.04	0.08	0.10	0.12	0.14	0.16	0.18	0.20	14.9
Kenya	0.21	0.21	0.20	0.19	0.20	0.21	0.22	0.23	0.24	0.25	4.6
Libya	0.09	0.35	0.69	0.80	0.85	0.90	0.92	0.95	0.97	1.00	3.3
Madagascar	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0
Malawi	0.06	0.09	0.13	0.16	0.19	0.22	0.25	0.28	0.31	0.33	11.7
Mauritius	0.06	0.05	0.04	0.03	0.02	0.01	0.01	0.01	0.01	0.01	-12.9
Morocco	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0
Namibia	0.08	0.10	0.11	0.12	0.13	0.13	0.13	0.14	0.15	0.16	4.2
Nigeria	1.18	1.20	1.22	1.25	1.30	1.35	1.40	1.45	1.50	1.55	3.6
Senegal	†	†	†	†	†	†	†	†	†	†	—
Somalia	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	10.2
South Africa	0.97	0.85	0.75	0.65	0.50	0.30	0.15	0.10	0.05	0.02	-47.5
Sudan	0.28	0.27	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.17	-5.0
Tanzania	0.15	0.21	0.32	0.44	0.50	0.60	0.70	0.80	0.90	0.95	13.7
Tunisia	0.15	0.11	0.05	0.04	0.03	0.02	0.01	0.01	0.01	0.01	-19.7
Uganda	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	8.4
Zimbabwe	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.11	6.6
Total	6.11	6.34	6.02	6.01	5.94	5.88	5.93	6.12	6.29	6.42	1.6

†Fewer than 5,000 or data not available

Sources: International Telecommunication Union, PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Dial-up household penetration in Africa averaged 3.9% in 2011. We expect this average to dip to 3.7% during the next three years and then edge up to 3.8% in 2015-16.

Libya had by far the highest dial-up penetration at 64.4% in 2011, followed by Namibia at 30.2% and Angola at 30%. We expect these countries to continue to dominate Africa with respect to dial-up penetration.

Dial-up household penetration by country in Africa (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Algeria	4.5	4.6	4.8	5.2	5.7	6.2	6.7	7.2	7.6	7.8
Angola	27.3	25.7	27.8	28.9	30.0	31.0	31.8	32.6	33.3	34.0
Botswana	—	—	—	—	—	—	—	—	—	—
Cameroon	0.6	0.8	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5
Egypt	14.9	12.8	9.4	7.5	6.1	4.8	4.1	3.5	2.8	2.2
Côte d'Ivoire	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Ethiopia	0.2	1.8	0.3	0.5	0.6	0.6	0.7	0.8	0.9	0.9
Ghana	0.2	0.2	0.8	1.6	2.0	2.4	2.7	3.0	3.3	3.5
Kenya	2.8	2.8	2.6	2.4	2.4	2.5	2.6	2.6	2.7	2.7
Libya	7.4	28.2	54.8	62.0	64.4	66.7	67.2	67.9	67.8	69.0
Madagascar	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Malawi	2.1	3.1	4.3	5.2	6.0	6.7	7.4	8.1	8.8	9.1
Mauritius	24.0	20.0	15.4	11.5	7.7	3.8	3.8	3.7	3.7	3.7
Morocco	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Namibia	19.5	23.8	26.2	27.9	30.2	30.2	29.5	31.8	34.1	35.6
Nigeria	4.1	4.1	4.1	4.1	4.2	4.3	4.3	4.4	4.5	4.5
Senegal	—	—	—	—	—	—	—	—	—	—
Somalia	2.2	2.6	3.0	3.5	3.8	4.2	4.5	4.9	5.2	5.5
South Africa	10.1	8.8	7.8	6.7	5.2	3.1	1.5	1.0	0.5	0.2
Sudan	3.6	3.4	3.2	2.9	2.6	2.4	2.2	2.1	1.9	1.8
Tanzania	1.9	2.6	3.9	5.3	5.8	6.9	7.9	8.8	9.7	10.1
Tunisia	7.3	5.3	2.4	1.9	1.4	0.9	0.5	0.5	0.5	0.4
Uganda	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
Zimbabwe	3.9	3.5	3.5	3.4	3.3	3.6	3.4	3.6	3.5	3.7
Total	4.3	4.4	4.1	4.0	3.9	3.7	3.7	3.7	3.8	3.8

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

In terms of spending, Nigeria had the largest dial-up market at R1.4 billion in 2011, with Egypt next at R1.1 billion.

Declining prices in some countries and decreases in the number of dial-up households will lead to declines in overall dial-up access spending during the next five years. Overall dial-up access spending will fall to R5.5 billion in 2016, a 3.2% compound annual decline from R6.5 billion in 2011.

Dial-up access spending by country in Africa (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	396	391	396	410	432	449	461	468	470	452	0.9
Angola	119	113	120	125	130	133	134	135	134	133	0.5
Botswana	†	†	†	†	†	†	†	†	†	†	—
Cameroon	26	38	48	57	65	71	77	81	84	86	5.8
Côte d'Ivoire	26	25	24	23	22	20	19	18	17	16	-6.2
Egypt	2 970	2 482	1 788	1 368	1 080	816	672	540	420	312	-22.0
Ethiopia	40	378	60	91	108	122	134	144	151	156	7.6
Ghana	17	17	66	128	155	181	206	228	249	269	11.7
Kenya	277	265	240	217	216	227	238	248	259	270	4.6
Libya	119	441	828	912	918	972	994	1 026	1 048	1 080	3.3
Madagascar	13	13	12	11	11	10	10	9	8	8	-6.2
Malawi	79	113	156	182	205	224	240	252	260	257	4.6
Mauritius	79	63	48	34	22	10	10	9	8	8	-18.3
Morocco	13	13	12	11	11	11	11	11	11	11	0.0
Namibia	106	126	132	137	140	133	125	126	126	125	-2.2
Nigeria	1 558	1 512	1 464	1 425	1 404	1 377	1 344	1 305	1 260	1 209	-2.9
Senegal	†	†	†	†	†	†	†	†	†	†	—
Somalia	53	63	72	80	86	92	96	99	101	101	3.3
South Africa	1 280	1 071	900	741	540	306	144	90	42	16	-50.5
Sudan	370	340	312	274	238	214	192	171	151	133	-11.0
Tanzania	198	265	384	502	540	612	672	720	756	741	6.5
Tunisia	198	139	60	46	32	20	10	9	8	8	-24.2
Uganda	13	25	24	23	22	31	29	27	25	23	0.9
Zimbabwe	119	101	96	91	86	92	86	90	84	86	0.0
Total	8 069	7 994	7 242	6 888	6 463	6 123	5 904	5 806	5 672	5 500	-3.2

†Negligible or data not available

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Total wired Internet access

There were 11.2 million wired Internet households in 2011, a figure we project will rise to 21.6 million in 2016, a 14.0% compound annual increase.

Egypt will have the largest market in absolute terms with 5.4 million Internet households in 2016. South Africa will be next with 3.6 million, followed by Algeria with 3.1 million. These three countries will comprise 56% of all Internet households in Africa in 2016.

Nigeria, Tunisia and Libya will be the only other countries to have more than 1 million Internet households in 2016.

Wired Internet households by country in Africa (millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	0.53	0.70	0.98	1.22	1.35	1.54	1.78	2.12	2.56	3.08	17.9
Angola	0.10	0.11	0.12	0.13	0.15	0.16	0.18	0.20	0.22	0.24	9.9
Botswana	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	38.0
Cameroon	0.02	0.03	0.04	0.05	0.06	0.07	0.09	0.10	0.11	0.12	14.9
Côte d'Ivoire	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	10.8
Egypt	2.62	2.59	2.43	2.49	2.65	2.90	3.30	3.80	4.50	5.40	15.3
Ethiopia	0.03	0.30	0.05	0.08	0.11	0.13	0.15	0.18	0.20	0.22	14.9
Ghana	0.02	0.03	0.07	0.12	0.16	0.21	0.27	0.34	0.43	0.55	28.0
Kenya	0.23	0.22	0.21	0.20	0.21	0.22	0.23	0.25	0.26	0.27	5.2
Libya	0.10	0.38	0.75	0.87	0.93	0.99	1.02	1.06	1.09	1.13	4.0
Madagascar	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	8.4
Malawi	0.06	0.09	0.13	0.17	0.20	0.23	0.27	0.30	0.33	0.36	12.5
Mauritius	0.09	0.09	0.10	0.11	0.11	0.11	0.13	0.15	0.17	0.19	11.6
Morocco	0.44	0.49	0.49	0.50	0.52	0.54	0.57	0.61	0.66	0.72	6.7
Namibia	0.08	0.10	0.11	0.13	0.14	0.14	0.15	0.16	0.17	0.19	6.3
Nigeria	1.21	1.26	1.30	1.34	1.42	1.51	1.60	1.70	1.80	1.90	6.0
Senegal	0.03	0.04	0.05	0.07	0.09	0.11	0.13	0.15	0.17	0.19	16.1
Somalia	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	10.2
South Africa	1.33	1.25	1.20	1.26	1.37	1.50	1.80	2.30	2.90	3.62	21.5
Sudan	0.30	0.31	0.36	0.40	0.39	0.41	0.44	0.48	0.53	0.59	8.6
Tanzania	0.15	0.21	0.32	0.44	0.50	0.61	0.71	0.81	0.91	0.97	14.2
Tunisia	0.22	0.27	0.35	0.47	0.58	0.72	0.86	1.01	1.16	1.31	17.7
Uganda	0.01	0.02	0.03	0.03	0.04	0.06	0.07	0.08	0.09	0.10	20.1
Zimbabwe	0.10	0.10	0.10	0.11	0.12	0.14	0.15	0.17	0.18	0.20	10.8
Total	7.75	8.69	9.30	10.32	11.24	12.46	14.08	16.18	18.67	21.61	14.0

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

With respect to household penetration, Libya was the leader in 2011 at 70.5%, most of which was dial-up. Mauritius was next at 42.3% with Angola and Namibia above 30% and Tunisia at 27.1%. South Africa ranked only eighth at 14.2%.

By 2016, Libya and Mauritius will have penetration rates above 70%, Tunisia will be at 58.5%, and Angola, Namibia, and Algeria will be above 40%. South Africa will follow at 37.2% with Egypt next at 30%.

Overall Internet household penetration will average 12.6% in 2016 from 7.3% in 2011.

Wired Internet household penetration by country in Africa (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Algeria	7.9	10.4	14.3	17.6	19.3	21.8	24.9	29.2	34.9	41.6
Angola	30.3	31.4	33.3	34.2	37.5	38.1	40.9	43.5	45.8	48.0
Botswana	0.0	2.6	2.5	2.4	2.4	4.8	4.7	7.0	9.1	11.4
Cameroon	0.6	0.8	1.1	1.3	1.5	1.7	2.2	2.4	2.6	2.7
Côte d'Ivoire	0.8	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.9	1.1
Egypt	17.3	16.8	15.4	15.5	16.1	17.3	19.3	21.9	25.4	30.0
Ethiopia	0.2	1.8	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.0
Ghana	0.4	0.6	1.5	2.5	3.2	4.2	5.2	6.4	7.8	9.8
Kenya	3.1	2.9	2.7	2.5	2.6	2.6	2.7	2.8	2.9	2.9
Libya	8.3	30.6	59.5	67.4	70.5	73.3	74.5	75.7	76.2	77.9
Madagascar	0.3	0.2	0.2	0.5	0.5	0.4	0.4	0.6	0.6	0.6
Malawi	2.1	3.1	4.3	5.5	6.3	7.1	8.0	8.7	9.3	9.9
Mauritius	36.0	36.0	38.5	42.3	42.3	42.3	50.0	55.6	63.0	70.4
Morocco	7.2	7.9	7.8	7.9	8.1	8.4	8.7	9.2	9.9	10.7
Namibia	19.5	23.8	26.2	30.2	32.6	32.6	34.1	36.4	38.6	42.2
Nigeria	4.2	4.3	4.4	4.4	4.6	4.8	5.0	5.2	5.4	5.6
Senegal	1.2	1.5	1.8	2.5	3.1	3.7	4.3	4.8	5.3	5.8
Somalia	2.2	2.6	3.0	3.5	3.8	4.2	4.5	4.9	5.2	5.5
South Africa	13.8	13.0	12.4	13.0	14.2	15.5	18.6	23.7	29.9	37.2
Sudan	3.8	3.9	4.4	4.8	4.5	4.7	4.9	5.2	5.7	6.2
Tanzania	1.9	2.6	3.9	5.3	5.8	7.0	8.0	8.9	9.8	10.3
Tunisia	10.7	13.0	16.7	22.2	27.1	33.3	39.4	45.9	52.3	58.5
Uganda	0.2	0.3	0.5	0.4	0.6	0.8	0.9	1.0	1.1	1.2
Zimbabwe	4.4	4.4	4.4	4.7	5.0	5.6	5.7	6.2	6.3	6.7
Total	5.5	6.0	6.3	6.8	7.3	7.9	8.8	9.9	11.1	12.6

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Egypt had the largest Internet access spending market in 2011 at R8.4 billion with South Africa next at R5 billion.

Egypt will continue to have the largest market, growing to R16.5 billion in 2016 with South Africa remaining second at R14.1 billion. They will be followed by Algeria at R8.6 billion and Tunisia at R4.2 billion.

Total wired Internet access spending in Africa will increase from R30.6 billion in 2011 to R57.6 billion in 2016, a 13.5% compound annual advance.

Wired Internet access spending by country in Africa (R millions)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Algeria	1 845	2 544	3 750	4 538	4 650	4 937	5 453	6 228	7 190	8 552	13.0
Angola	182	223	223	221	263	255	288	315	336	360	6.5
Botswana	0	55	52	48	44	82	77	108	134	162	29.8
Cameroon	26	38	48	57	65	71	115	117	118	118	12.7
Côte d'Ivoire	89	80	76	71	66	61	96	90	84	113	11.4
Egypt	5 301	5 904	6 638	7 560	8 406	9 384	10 656	12 060	13 860	16 512	14.5
Ethiopia	40	378	60	91	152	163	172	216	218	221	7.8
Ghana	80	127	221	320	421	548	705	876	1 089	1 403	27.2
Kenya	403	320	292	265	260	270	280	330	338	347	5.9
Libya	182	607	1 138	1 248	1 273	1 361	1 414	1 475	1 523	1 579	4.4
Madagascar	13	13	12	59	55	51	48	81	75	73	5.8
Malawi	79	113	156	230	249	265	317	324	327	354	7.3
Mauritius	268	284	358	418	422	418	471	513	546	591	7.0
Morocco	2 722	2 663	2 489	2 363	2 275	2 301	2 363	2 459	2 585	2 737	3.8
Namibia	106	126	132	185	184	174	202	198	193	222	3.8
Nigeria	1 747	1 843	1 877	1 857	1 937	2 030	2 112	2 205	2 268	2 343	3.9
Senegal	189	221	258	336	400	449	499	540	571	616	9.0
Somalia	53	63	72	80	86	92	96	99	101	101	3.3
South Africa	3 721	3 711	3 762	4 255	5 029	6 066	7 668	9 594	11 670	14 056	22.8
Sudan	496	561	828	1 042	993	1 030	1 114	1 215	1 327	1 494	8.5
Tanzania	198	265	384	502	540	653	710	756	790	806	8.3
Tunisia	639	1 022	1 608	2 110	2 474	2 876	3 274	3 609	3 872	4 220	11.3
Uganda	13	25	76	71	111	153	183	207	227	250	17.6
Zimbabwe	182	211	199	235	264	296	316	342	353	378	7.4
Total	18 574	21 397	24 709	28 162	30 619	33 986	38 629	43 957	49 795	57 608	13.5

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates

Access Outlook online for the full forecasts and economic analyses for 12 industry segments.

Visit Outlook online at www.pwc.co.za/outlook

Global trends in Internet access spending

Outlook

- We project that total global spending on wired and mobile Internet access will increase from \$317 billion in 2011 to \$493.4 billion in 2016, a 9.3% compound annual growth rate.
- Global wired broadband access, the largest component at \$179.3 billion in 2011, is projected to grow at an 8.2% compound annual rate to \$265.3 billion in 2016.
- Dial-up will continue to decline, falling to \$3.8 billion from \$11.7 billion in 2011, a 20.0% compound annual decrease.
- Total wired Internet access spending will increase at a 7.1% compound annual rate from \$190.9 billion to \$269.1 billion in 2016.
- Global mobile Internet access spending totalled \$126.1 billion in 2011. Its growth during the forecast period will outpace wired access spending by a wide margin. We expect mobile access spending will increase to \$224.3 billion in 2016, a 12.2% compound annual increase.

Key drivers

- Fibre network rollouts and the extension of the broadband infrastructure into underserved areas will drive broadband subscriptions and fuel broadband spending.
- Rising prices for premium services will further boost average monthly spending in many countries.
- As broadband becomes increasingly available, dial-up will continue to decline.
- In the mobile market, the enormous popularity of smartphones is driving penetration. Fuelled principally by a new wave of smartphone launches, mobile subscribership soared in 2011 and mobile access spending jumped 30.5%.
- Carriers are now rolling out third-generation (3G) and fourth-generation (4G) wireless networks to provide faster speeds and to accommodate surging data traffic.
- Wireless network upgrades, enabled by improved wireless technologies and high-bandwidth cell site backhaul, will sustain mobile access growth.

Global trends in Internet advertising spending

Outlook

- Overall global spending on Internet advertising, both wired and mobile, will rise from \$89.8 billion in 2011 to \$188.1 billion in 2016, a 15.9% compound annual growth rate.
- Paid search advertising, the largest single component of the market, will rise to \$78.1 billion in 2016, a 13.8% compound annual increase from \$40.9 billion in 2011.
- Banner/display advertising will advance at a 12.6% compound annual rate from \$25.7 billion in 2011 to \$46.6 billion in 2016.
- Online classified advertising will increase from \$15.1 billion in 2011 to \$26.4 billion in 2016, 11.8% growth on a compound annual basis.
- Online video advertising will more than quadruple to \$12.6 billion in 2016 from \$2.9 billion in 2011, a 33.9% compound annual increase.
- Total global wired Internet advertising will reach \$163.6 billion in 2016 from \$84.6 billion in 2011, a 14.1% compound annual increase.
- Mobile advertising will grow much faster, rising to \$24.5 billion in 2016 from \$5.2 billion in 2011, a 36.5% compound annual increase.

Key drivers

- Broadband household growth will be the main driver of wired Internet advertising.
- Paid search, a format not available in other media, will continue to attract spending to the Internet.
- Increasing traffic on social networking sites and growing time spent online are attracting advertising and fuelling growth in banner/display advertising.
- Online classified advertising will gain share from the print media and will benefit from improving economic conditions in certain countries.
- Faster broadband speeds and increased TV streaming from broadcasters and over-the-top providers will drive online video advertising.
- Growing tablet and smartphone penetration and growth in the mobile Internet access subscriber base will boost mobile advertising.

Global Internet access market: wired and mobile by component (US\$ millions)

	2007	2008	2009	2010	2011p	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Dial-up	25 371	19 872	16 402	13 911	11 654	9 305	7 075	5 685	4 629	3 819	
% change	-19.1	-21.7	-17.5	-15.2	-16.2	-20.2	-24.0	-19.6	-18.6	-17.5	-20.0
Broadband	124 602	141 644	153 393	165 319	179 260	193 752	209 913	226 843	245 613	265 294	
% change	19.4	13.7	8.3	7.8	8.4	8.1	8.3	8.1	8.3	8.0	8.2
Total wired access	149 973	161 516	169 795	179 230	190 914	203 057	216 988	232 528	250 242	269 113	
% change	10.5	7.7	5.1	5.6	6.5	6.4	6.9	7.2	7.6	7.5	7.1
Mobile access	53 845	67 234	80 735	96 242	126 058	147 949	169 867	187 310	205 867	224 277	
% change	38.8	24.9	20.1	19.2	31.0	17.4	14.8	10.3	9.9	8.9	12.2
Total	203 818	228 750	250 530	275 472	316 972	351 006	386 855	419 838	456 109	493 390	
% change	16.8	12.2	9.5	10.0	15.1	10.7	10.2	8.5	8.6	8.2	9.3

Global Internet advertising market: wired and mobile by component (US\$ millions)

	2007	2008	2009	2010	2011p	2012	2013	2014	2015	2016	2012-16 CAGR (%)
Wired Internet advertising											
Search	21 742	26 436	28 928	33 937	40 884	47 476	54 780	62 454	70 256	78 083	
% change	36.7	21.6	9.4	17.3	20.5	16.1	15.4	14.0	12.5	11.1	13.8
Banner/ display†	17 461	19 330	19 390	22 595	25 687	29 250	33 426	37 608	42 024	46 575	
% change	29.4	10.7	0.3	16.5	13.7	13.9	14.3	12.5	11.7	10.8	12.6
Classified	11 409	13 139	11 881	13 746	15 100	16 930	19 033	21 364	23 831	26 351	
% change	25.7	15.2	-9.6	15.7	9.9	12.1	12.4	12.2	11.5	10.6	11.8
Video	569	986	1 304	2 065	2 921	4 063	5 436	7 267	9 647	12 572	
% change	90.9	73.3	32.3	58.4	41.5	39.1	33.8	33.7	32.8	30.3	33.9
Total wired Internet advertising	51 181	59 891	61 503	72 343	84 592	97 719	112 675	128 693	145 758	163 581	
% change	32.0	17.0	2.7	17.6	16.9	15.5	15.3	14.2	13.3	12.2	14.1
Mobile advertising	938	1 770	2 398	3 251	5 174	7 692	10 836	14 592	19 150	24 488	
% change	69.9	88.7	35.5	35.6	59.2	48.7	40.9	34.7	31.2	27.9	36.5
Total	52 119	61 661	63 901	75 594	89 766	105 411	123 511	143 285	164 908	188 069	
% change	32.5	18.3	3.6	18.3	18.7	17.4	17.2	16.0	15.1	14.0	15.9

†Includes other advertising in North America

Sources: PricewaterhouseCoopers LLP, Wilkofsky Gruen Associates, Global entertainment and media outlook 2012 -2016 (PwC, 2012)

