Mobile Internet Traffic:

Analysing Global Usage Trends

Informa Telecoms & Media is inviting companies to collaborate in its ongoing analysis of mobile Internet traffic trends. By combining wide-ranging historical data sources with its extensive global market intelligence, Informa aims to provide more balanced, robust and granular analysis and forecasts on global mobile Internet usage than any that exists in the market today.

To discuss further the opportunities for partnership in this research, please contact Philippa Hobbs, Research Analyst & Head of Partnership Development, at philippa.hobbs@informa.com, +44(0) 20 7017 5643.

Summary

- Analysing global mobile Internet usage by specific metrics is beset by challenges. Different metrics are monitored by different companies whose visibility of traffic depends on their type of activity and geographical reach. A comparative analysis of several publicly available trend reports on usage during late 2009 shows some clear indicators of traffic trends by device, by content type and by geography.
- Less-than-surprising mobile content consumption trends are confirmed: mobile social networking was particularly popular, while video content consumption also appeared to take a significant slice of total traffic.
- However, trends relating to rate of overall usage as well as device popularity tend to vary from one vendor to another, often where there is a difference in their regional reach. For example, in November 2009, total ad requests to the server of global advertising networks Admob and BuzzCity declined, while one of their key competitors, InMobi, based in Asia but particularly active in Africa, was seeing consistently high growth – as was browser vendor Opera.
- Additionally, the Apple iPhone, the preferred device for accessing the mobile Internet according to most Western market data, is upstaged by Nokia devices in data emerging from Asia Pacific and Africa which shows the Finnish manufacturer's prevalence amongst users accessing the mobile Internet in these regions. Even in markets where smartphones are prevalent, such as the US, non-smartphones appear to generate over half of mobile Internet traffic.
- Comparing several data sources on 'global' usage trends unveils key differences that point to the inevitable bias of the sources themselves – whether regional or otherwise. Bringing together disparate data sources under an umbrella of intelligent aggregation and normalization would begin the process of overcoming bias in usage analysis and building a global picture of traffic trends. Informa has already begun to put this process into action and invites companies with visibility of traffic to talk to us confidentially about our ongoing research in this area.

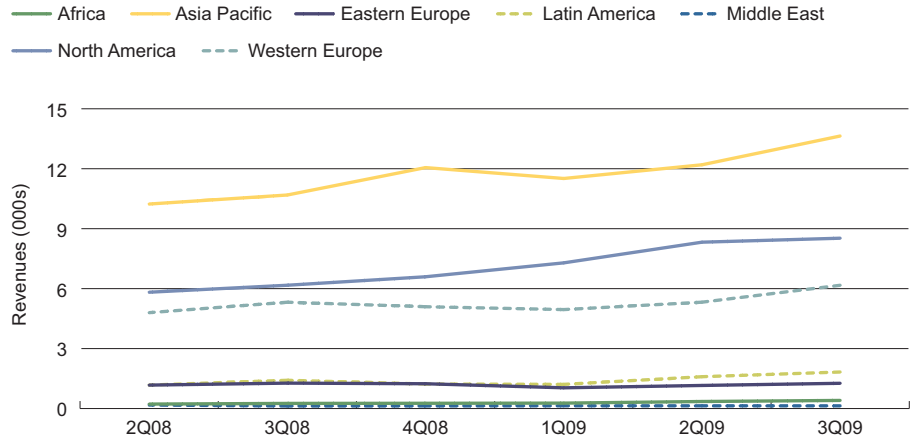
Mobile Internet usage analysis

- Analysis of mobile Internet usage is beset by challenges, principally the lack of truly global data.
- Although overall mobile data usage is on the rise, not all reported data points to consistent growth in global mobile Internet usage.
- Regional differences are discernible: North America and Asia Pacific appear to lead the mobile Internet market, but growth in these regions might be slowing, while it is picking up in Africa.
- Mobile Web users are not only high-value business/consumer smartphone subscribers: Lower-value feature-phone users of mobile Internet services are arguably higher in volume in markets where devices such as the iPhone are available, and they are creating significant growth in developing markets.
- Mobile Web content is dominated by social networking, but video appears a strong candidate for future growth.

Market background

The growth of mobile data usage in the 12 months to end-3Q09 is clear for all to see: In 3Q09, global non-SMS data revenues grew 26.6% year-on-year, to US$31.96 billion (see fig. 1), and 9.9% quarter-on-quarter, taking 58.6% of total data revenues, according to Informa Telecoms & Media. This is significant growth in the aftermath of the economic downturn, which finally dug its claws into the mobile sector in 1Q09, and voice and equipment revenues suffered a dramatic slowdown.

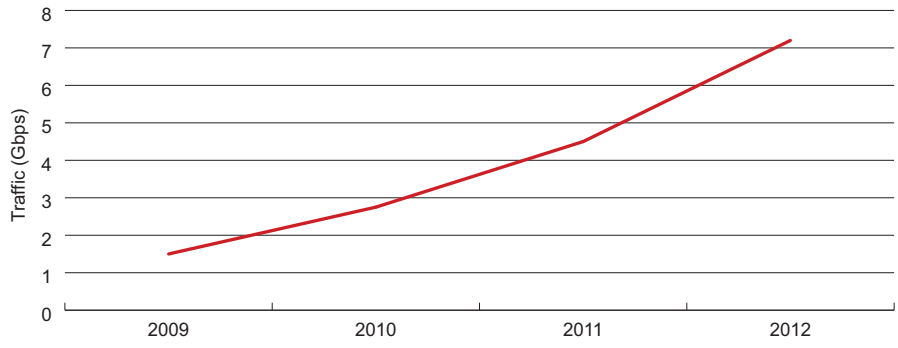
Fig. 1: Global, non-SMS data revenues, 2Q08-3Q09



Source: Informa Telecoms & Media

Kevin Russell, CEO of UK mobile operator 3, said in October 2009 that data now accounted for 94% of all traffic across 3 UK's network, having increased from 15-20% three or four years ago. At Informa's Broadband Traffic Management conference in November 2009, European mobile operators 3 Austria and O2 Ireland confirmed their expectations that data usage will continue to grow (see fig. 2). According to Informa market data, there were 666 million mobile Internet users by end-2009, a number expected to grow to 2.13 billion by 2014.

Fig. 2: O2 Ireland traffic, 2009-2012



Source: O2 Ireland

The skyward trajectory of usage has been aided by the spread of flat-rate data plans, the increased deployment of advanced technologies, such as HSPA, and an improvement in device usability – not only of smartphones but also of lower-range handsets. Mobile broadband access via portable devices (data cards, dongles and embedded modems) is expected to continue to affect traffic over operators' networks: According to Informa forecasts, traffic from these devices is expected to rise from 29.6% of all traffic in 2010 to 77.6% in 2014.

Even though mobile broadband generates enormous traffic, the "on-off" nature of mobile Internet browsing actually means that smartphones generate eight times as much signaling per megabyte of data as USB-modem-connected laptops, according to infrastructure vendor Airvana. Having begun engaging developer communities, mobile operators are now collaborating with third parties in the provision of multimedia services, and OEM-, operator- and content-aggregator-owned application stores are proliferating. Apple's iPhone and App Store have played a significant role in shifting consumer awareness of, and appetite for, mobile content and applications from marginal to mainstream, with other vendors now rushing to emulate its success and meet the rising demand for services. Those fighting for market share in a tough operating climate have focused on promoting data services and network quality. 3 UK, for example, allows mobile VoIP, such as Skype, a service blocked by other mobile operators, and has seen a 6,600% increase in mobile VoIP minutes since 2006.

Mobile data services that use high bandwidth put far greater demands on mobile networks than voice and SMS traffic. "Watching a YouTube video on a smartphone can use the same capacity on the network as sending 500,000 text messages simultaneously," Derek McManus, CTO of O2 UK, told press recently. Some mobile operators are beginning to explore traffic-management technologies to overcome the problem of network congestion at peak times, even throttling the minority of heavy users whose high level of activity adversely affects the service for the majority. For example, in 2008, Yoigo, a small, no-frills mobile operator in Spain, saw an 85% increase in peer-to-peer file sharing, a high-bandwidth application used by only 6,000 subscribers.

Flat-rate pricing models have led to growth of all types of traffic but also to the decoupling of traffic from revenues. DPI (deep packet inspection) technology is beginning to be used to distinguish between different types of traffic and users, enabling the introduction of tiered pricing and other "smartpipe" strategies. With good quality of service essential to retaining mobile Internet subscribers, managing network congestion is particularly important for mobile operators.

The mobile content ecosystem is expanding fast: Companies traditionally the preserve of the IT and Internet sector, including Web brands, Web-content publishers and OEMs, not only are entering the mobile sector but also consider it to be essential for growth. Companies such as DPI vendors and traffic-management vendors are seeing significant growth in the adoption of services aimed at wireless customers: Broadband-traffic-management vendor Sandvine told Informa that mobile is its fastest-growing business segment. Mobile analytics companies have multiplied in the past few months alone (at latest count, 41 companies provide this service). Some mobile advertising networks are seeing ad-request growth as high as 40% a month, drawing higher numbers of advertisers and publishers to the mobile screen. M&A activity is growing among mobile ad networks and mobile analytics companies alike.

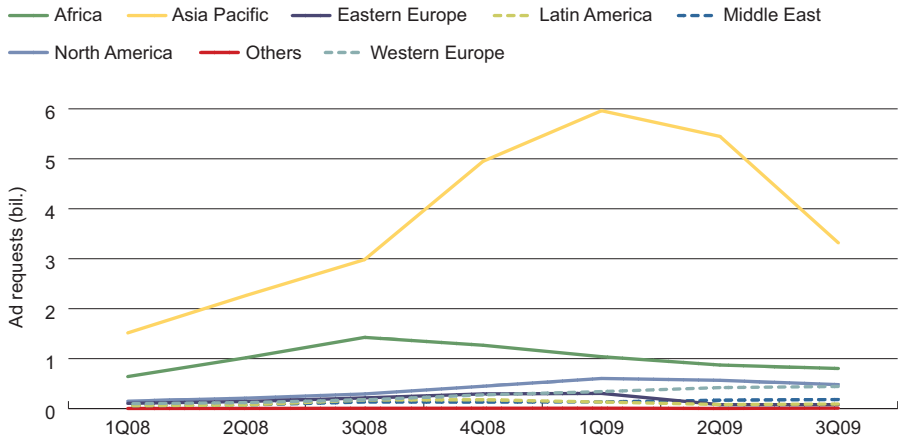
The following analysis reveals mobile-Internet-usage trends that are discernible from available traffic data, and it demonstrates the difficulty in drawing firm conclusions. The varying time frames of reported datasets are unavoidable but are kept to a minimum where possible for the purpose of making viable comparisons.

Global mobile Internet usage: growing or stalling?

Browser-software vendor Opera recently unveiled its latest report on global use of the mobile Web via its browser, Opera Mini. It recorded 20.7 billion actual page views by its 46.3 million global Opera Mini browser users in December 2009, which equates to 447 page views per user, or about 14 per user per day. It represented 10.1% growth compared with the previous month and 223% growth year-on-year, and it was the 10th month of consistent page-view growth.

But data reported by Singapore-based mobile advertising network BuzzCity tells a slightly different story about the growth of mobile Internet use that it is seeing via ad requests sent by mobile Web sites to its ad server. In 3Q09, the ad network served more than 5.4 billion banner advertisements via its servers, 29% fewer than in 2Q09 and almost the same as in 3Q08. It suffered some decline in 3Q09, particularly in its key region of Asia Pacific, and since 1Q09 in Africa (see fig. 3).

Fig. 3: BuzzCity, ad requests, 1Q08-3Q09



Source: BuzzCity

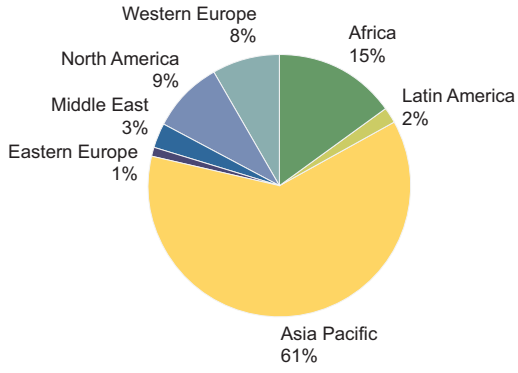
Ad requests delivered from Web pages and applications to mobile ad servers such as BuzzCity, AdMob, Quattro Wireless and Millennial Media provide useful insight into mobile-Internet-usage trends across browsing and applications, though it is worth remembering that the data does not account for those Web pages on which no display advertising is used, such as Google's home page. Although one page view could account for as many as five ad requests, often it is assumed to be a 1-to-1 ratio: US-based mobile advertising network Millennial Media calculates an average of 1.02 ad requests per mobile Web page view in its November 2009 SMART report. If there is a decline in the number of page views despite the same or higher number of publishers, this relates directly to a decline in browsing of pages and apps that serve ads – and probably a decline in usage overall.

Different ad networks show different growth trends, however. InMobi is a global advertising network based in India. InMobi told Informa that its ad-request numbers are growing at a monthly rate of 40%. AdMob's total ad requests, on the other hand, declined 4.25% month-on-month in November, before recovering in December.

Regional bias must be taken into account when looking at "global" figures reported by ad networks and could be a key factor behind trend differences. Sixty-three percent of BuzzCity's 2.1 billion ad requests originated from Asia Pacific in September 2009, with North America

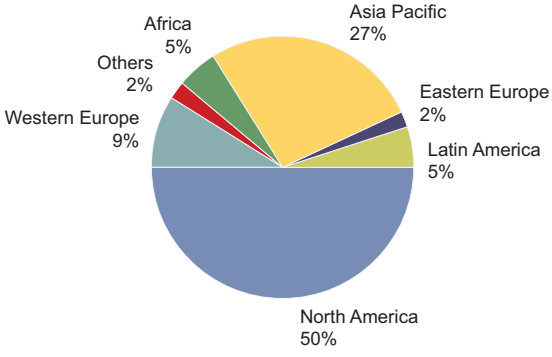
taking only a 9% share (see fig. 4). InMobi is also predominant in Asia Pacific, receiving the most ad requests in September from Australia, India and Indonesia. But the company is seeing most of its growth in Africa: It says it is the biggest ad network in South Africa, and in September 2009 it saw 749% growth in the number of ad requests from Egypt. In the same month, 47% of a total of 10.2 billion ad requests to US-based AdMob originated from North America, with Asia Pacific generating the second-highest figure (see fig. 5).

Fig. 4: BuzzCity, ad requests split by region, Sep-09



Source: BuzzCity

Fig. 5: AdMob, ad requests by region, Sep-09



Source: Admob

Isolated datasets do not, evidently, tell the whole story. By comparing them, some possible conclusions can be drawn, such as that North America and Asia Pacific are seeing the most mobile Internet usage, while Africa is seeing a higher level of growth. The African growth trend is confirmed by data reported by India-based global VAS provider Comviva in 1H09 that African mobile Internet penetration increased 50% between 2008 and 2009. All three ad networks name India among their biggest markets in terms of ads served, while BuzzCity and AdMob also name the US. Africa rates highly in an overall analysis by Opera of year-on-year regional page-view growth: Its 373% increase is surpassed only by Southeast Asia's 575% increase.

Device trends by geography

According to AdMob and Quattro Wireless, the most popular device in terms of ads requested globally is the Apple iPhone: In November 2009 it took 26.8% of AdMob's total global ad requests. The iPhone has been the top-ranking device in terms of ad requests to AdMob's server every month since October 2008. Quattro Wireless reported it as the world's top-ranking device for 2Q09 in its first *Mobile ROI Report*, released in October 2009, followed by the Apple iPod Touch and the Samsung RCH-450, which rates fourth in AdMob's November survey, after the iPod Touch and the HTC Dream (see fig. 6).

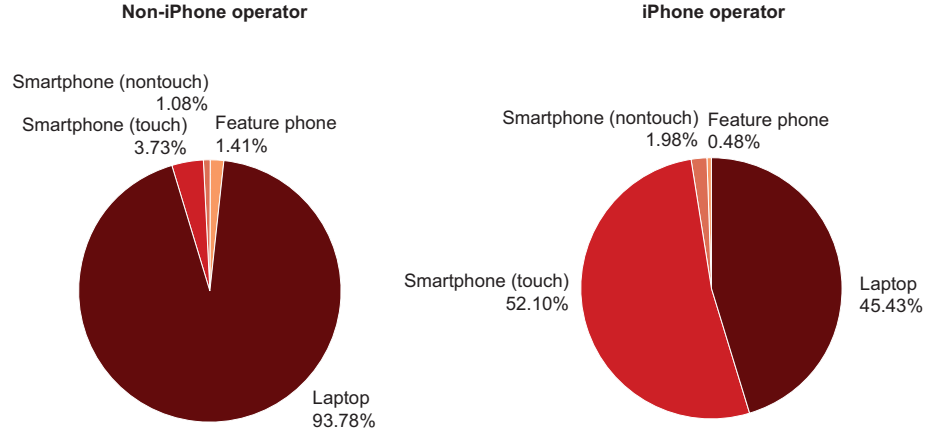
Fig. 6: Quattro Wireless, AdMob, top 10 devices by global ad requests, 2Q09 and Nov-09

Rank	Quattro Wireless (2Q09)	Admob (Nov-09)
1	Apple iPhone	Apple iPhone
2	Apple iTouch	Apple iPod Touch
3	Samsung SCH-R450	HTC Dream
4	T-Mobile Sidekick	Samsung R450
5	RIM BlackBerry Curve 8330	Motorola Droid
6	Sony PlayStation Portable	HTC Magic
7	HTC G1 Dream	RIM BlackBerry 8300
8	Samsung SPH-M800 Instinct	Nokia N70
9	RIM BlackBerry 9530 Storm	Motorola RAZR V3
10	RIM BlackBerry 8130 Pearl	Kyocera S1300

Sources: Quattro Wireless, AdMob

Bytemobile, a UK-based mobile-Internet-software vendor, revealed in its recently published Mobile Minute Metrics report that data traffic for an iPhone operator is almost 14 times that of a non-iPhone operator, the latter type finding that nearly 94% of its traffic originates from subscribers using laptop devices (see fig. 7).

Fig. 7: Bytemobile, iPhone data volume, iPhone operator vs. non-iPhone operator, 3Q09

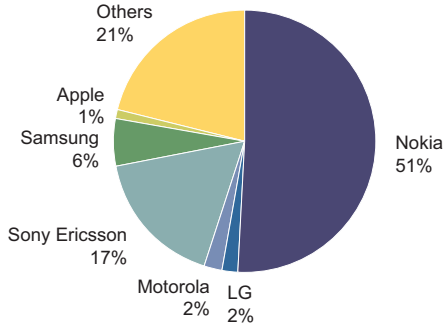


Source: Bytemobile

Let's not forget, however, that the iPhone is not globally ubiquitous and mobile Internet usage is visible and growing in markets where the iPhone is not available, particularly in Asia Pacific and Africa. Looking only at data from Western ad networks, such as AdMob, underestimates these regions. In many emerging markets in Asia Pacific and Africa, mobile penetration has exceeded PC penetration, and mobile access to the Internet is often the only access method available.

With a significant chunk of its ad requests coming from its key markets of Asia Pacific and Africa, global ad network InMobi reports very different device trends from ad networks that are focused on Western markets, and Nokia devices take a majority share (see fig. 8).

Fig. 8: InMobi, traffic split by device vendor, Nov-09



Source: InMobi

According to InMobi's November 2009 *Network Summary*, Nokia devices accounted for 15 of the top 20 devices in terms of ads requested on InMobi's network in October 2009, with the Nokia 3110 classic topping the chart. Sony Ericsson and Samsung devices take the remaining five positions, with the Sony Ericsson W200i at No. 5 (the only non-Nokia device in the top 10). Nokia's dominance in Asia Pacific is confirmed by data from BuzzCity. BuzzCity has revealed data showing that Nokia is the top handset vendor in India and Indonesia in terms of ad requests, with 62.27% and 55.61% share, respectively.

Although the US slice of its traffic is marginal, BuzzCity reports that Apple devices (including the iPhone and the iPod Touch) take only 1.99% share, while Motorola takes 18.56% and Nokia takes 18.53% – quite a difference from AdMob's data that shows over a quarter of ad requests coming from the US, and another indication that one data source might not tell the whole story.

Profiling mobile Internet users

What's clear from this device analysis is that mobile Web users are not just high-end smartphone users. According to Informa market data, 525.4 million users, or 11.4% of the

world's mobile subscribers, use the mobile Internet. Considering that Informa expects only 6.7% of handsets shipped in 2009 to be high-end smartphones, meaning an even lower proportion in active use in the market, it is clear that mobile Internet users are not just confined to high-end, high-value smartphone users, such as early adopters and business users, that tend to use iPhone and BlackBerry devices.

Novarra, a provider of Mobile Internet gateway and browser platforms, categorizes mobile Web users under five different profile types according to preferred device, regularity of use and content type, in its October *Mobile Internet Experience* report (see fig. 9). According to the vendor, "business pros," which are heavy users of high-end devices, had the highest growth rate in 1H09, doubling their active-user numbers, while "mobile millennials" – young, early adopters – added the most users in the same time period. These groups prefer smartphones but also use what the vendor describes as "hero" devices: high-end, Internet-enabled feature phones. The growth of the two former segments is unsurprising, particularly with the rise of the smartphone as the "minicomputer" for business and consumer users, but lower-value users (which Novarra defines as "frugal fanatics") continue to increase their use as Internet-enabled feature phones become more widely available. These lower-value, higher-volume user groups may well see the biggest future growth, as mobile Web access improves.

Fig. 9: Novarra, user profiles

User type	User profile	Preferred phones, features, uses
Business pro	Professionals who depend on their mobile devices to make them more productive and handle all their communications needs. They are heavy users and the most-device-dependent population.	Highly capable smartphones for e-mail, Web browsing and access to company systems.
Multitasking parent	Parents who never leave home without their phones and rely on them to remain in constant communication with family and friends, keep track of activities and events, and search for important information on the fly.	Often more fashion-oriented phones that are well-equipped, but not cutting-edge, for search, shopping and text messaging.
Mobile millennials	Young adults who are the earliest adopters of new technologies and services. Device styling captures their attention, but feature-rich functionality, processing power and applications are what really matter to them.	Advanced features such as large touch screen, high-megapixel camera, Wi-Fi and GPS, rich app stores, and highly capable browser for social networking, apps, surfing and messaging.
Connected kid	Children who have been using technology since before they could walk, often teaching their parents how to use features and services on their phones. They love their phones and are always begging their parents for the best new handsets.	Value-price handsets that tend to have a standout feature or two, but are not fully loaded, for text messaging and social networking.
Frugal fanatic	Adults who are not willing to pay for an expensive data plan or device but still view their mobile handset as an extension of their personalities. They carry fewer feature-rich phones but send text messages and photos more than typical free-phone owners.	Usually free handsets for text and picture messaging, and free downloads.

Source: Novarra

Mobile Internet content trends

Novarra revealed in its October *Mobile Internet Experience* report that growth occurred across a number of content types in 3Q09 (see fig. 10).

Fig. 10: Novarra, mobile content growth, 1H09

Content type	Growth (%)	Driver
Social networks (page views)	190	Viral nature of the experience and highly personal, valued content
Search (queries)	87	More service providers support the service, and content providers add rich content to their sites
Videos (views)	74	New users often rely on search as a starting point for mobile browsing
Display ads (views)	52	–

Source: Novarra

Unsurprisingly, social networking is a significant growth category. Social-networking Web sites continue to rate highly in mobile Internet rankings. According to Opera's rankings, at least one social-networking site features among the top five mobile Web sites accessed in the US, Russia, the UK, India and South Africa. The browser vendor reports that for nine in 10 African markets where it is used, social-networking giant Facebook is in the top two of all sites accessed.

But video is being repeatedly cited as the standout candidate for growth in mobile Web content. At Informa's Broadband Traffic Management conference, O2 Ireland said that video was the No. 1 application going forward, while 3 Austria claimed that streamed "entertainment" content constituted 45-55% of traffic in 2H09. Turkish mobile operator Turkcell recently said that 1 million of its users had accessed the Turkcell video service (of a total WCDMA subscriber base of 1.4 million in September 2009, according to Informa data). Bytemobile has reported a similar strong trend in Web video: According to its *Mobile Minute Metrics* report, video traffic comprises 43% of all traffic on touch-screen smartphones and 39% of traffic overall.

But although Bytemobile reports that "50% of videos are played for 60 seconds or less, with the majority of users viewing only 10-30 seconds of the video," Novarra reports that the average video is two to three minutes (see fig. 11) – quite a difference.

Fig. 11: Novarra, video statistics, Jan-Jun 09

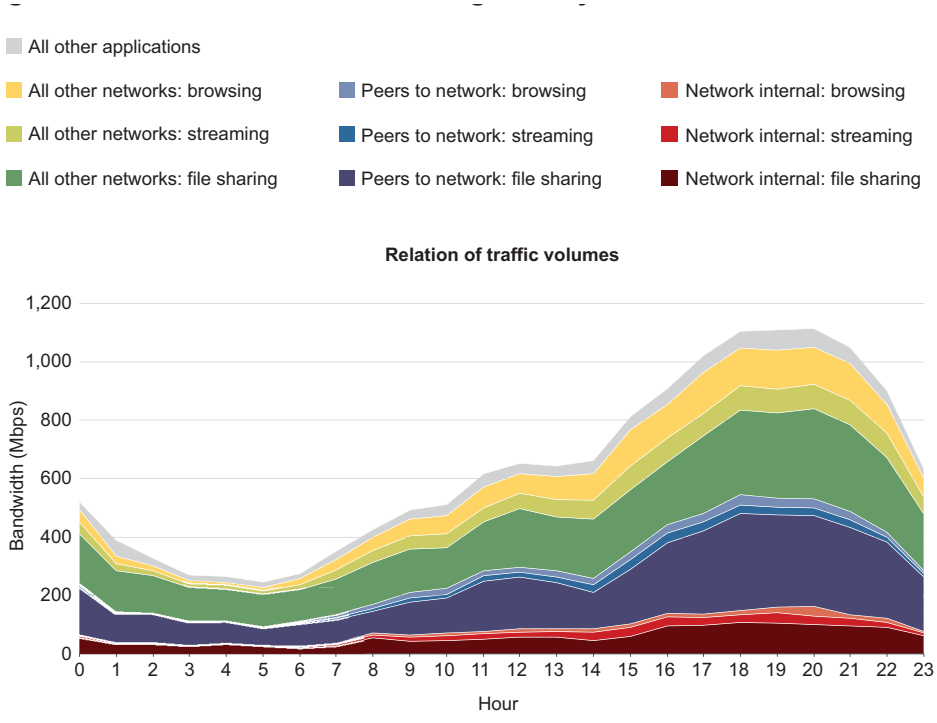
No. of monthly web session including video	4.5
No. of videos in average viewing session	7.2
Average length of video viewed (min.)	2 to 3
Total minutes spent viewing streamed video per user per month	80

Source: Novarra

Distinguishing different forms of activity on the mobile Internet reveals bandwidth-usage patterns that vary throughout a given day. According to Swedish mobile operator TeliaSonera, file-sharing activity, a high-bandwidth-consuming activity, increases noticeably

between 2pm and 8pm, before declining rapidly until reaching its lowest usage level at 5am (see fig. 12). By comparison, browsing activity rises at a reduced rate throughout the day, peaking from 6pm to 8pm and dropping to almost no activity between 1 and 5am. Streaming follows a similar pattern to browsing.

Fig. 12: TeliaSonera, traffic mix over a given day



Source: TeliaSonera

Bytemobile has reported a similar trend occurring, with what the vendor calls "Web volume" rising between 9am and 1pm, flattening in the afternoon and then rising to its highest level of usage at 9pm. After 10pm, Web usage sustains a rapid fall to its lowest level between 4am and 5am. Mobile video usage follows a similar pattern, according to the vendor, and usage increases more dramatically between 8pm and 10pm. Less than 1% of the total daily video usage occurs between 4am and 6am.

Country profiles

India

Mobile data revenues and subscriptions

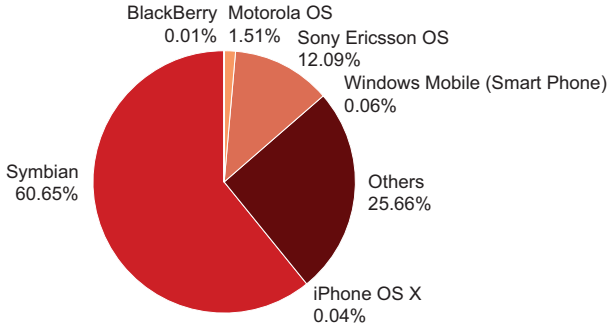
India generated US$307.7 million in revenues from non-SMS data services in 3Q09, up 12.1% year-on-year. There were 53.49 million mobile Internet users in India in 2009, according to Informa market data, and that figure is expected to grow to 311.14 million in 2014.

Device trends

Nokia is the most popular handset manufacturer in India for mobile Internet use, according to several reports. Nokia manufactures the top 10 devices on which Opera Mini is used, according to data reported by the software vendor in January 2010 relating to December 2009. Nine of the top 10 devices ranked by ad requests to BuzzCity's server are Nokia devices, which account for 62.27% of all requests. Second-place Sony Ericsson's devices account for just 13.89%. InMobi revealed in its November summary that October saw nine Nokia devices among its top 10 devices by ad requests in India, with a Samsung model the only non-Nokia device.

It's therefore unsurprising that Symbian is the most popular operating system in India in terms of ad requests. Both BuzzCity and AdMob data report it as taking a majority share. AdMob's smartphone-only data places the iPhone in second place, with a share of 4%, but BuzzCity suggests that Sony Ericsson takes the second-biggest share of the OS market in India (see fig. 13).

Fig. 13: BuzzCity, ad requests from India by OS, Nov-09



Source: BuzzCity

Browsing trends

Opera revealed in January 2010 that the number of pages viewed on its browser in India grew 263.3% year-on-year in December 2009, while its unique-user numbers grew 244.8% in the same period (up from 208.4% year-on-year growth the previous month). Each India-based user views 339 pages, amounting to 7MB of compressed data per user (20KB of compressed data per page view). BuzzCity reported 311.2 million ad requests from mobile Web sites for September, and AdMob reported 668.3 million ad requests from Web sites and applications for the same month.

Both Opera Mini and market-research company Informate, which conducts on-device metering of handset usage, have revealed top Web sites, the latter in terms of content categories (see figs. 14 and 15).

Fig. 14: Opera Mini, top 10 sites accessed on a mobile device by unique users, India, Dec-09

Rank	Site (rank in Nov-09)
1	google.com (1)
2	orkut.com (2)
3	facebook.com (4)
4	wikipedia.org (5)
5	yahoo.com (8)
6	youtube.com (7)
7	songs.pk (6)
8	zedge.net (10)
9	cricinfo.com (–)
10	wap.in (9)

Source: Opera

Fig. 15: Informate, top sites accessed on mobile devices in India, Apr-Sep 09

BFSI/online trading	Dating/matrimonial	VAS storefront	Overall Internet media
ICICI Bank	Shaadi	Getjar	Social networking
BSE	Bharatmatrimony	Ovi	Search
NSE India	Jeevansaathi	Ownskin	Webmail

Travel and tourism	Social networking	Web communication	Search engines
Indian Railways	Orkut	Gmail	Google
MakeMyTrip	Facebook	Yahoo India Mail	Yahoo
Yatra	My Gamma	Rediff Mail	Bing

Source: Informate Mobile Meter

US

Mobile data revenues and subscribers

In the US, non-SMS data revenues increased 38.12% year-on-year in 3Q09, to US$8.1 billion. According to Informa market data, there were 62.81 million mobile Internet users in the US in 2009, and the number is expected to rise to 203 million by 2014.

Device trends

Apple was the most popular handset manufacturer in the US in November 2009 in terms of mobile Internet usage, according to Millennial Media and AdMob. In November, the iPhone accounted for 17.62% of Millennial Media's traffic and 26.8% of AdMob's.

On both ad networks, Samsung was the second-most-popular vendor, with two devices in each top-10 ranking, though only the Samsung R450 features on both.

Conflicting reports on other device vendors' popularity in the US abound. Comparing the month of November 2009, the presence of RIM devices in ad-network rankings varies: Three BlackBerry handsets (Curve, Pearl and Storm) feature among Millennial Media's top 10 devices, and only one – the Curve 8300 – features in AdMob's top 10 (see fig. 16). Opera reports BlackBerry as the winning device vendor in terms of use of the Opera Mini browser, accounting for five of its top 10 devices in October 2009, including the BlackBerry Curve 8330, its most popular device (a stronger indication of Opera Mini popularity among BlackBerry users than the popularity of BlackBerry devices among mobile Internet users). In a reverse trend, two HTC devices appear in AdMob's top 10 for the US, but none appear in Millennial Media's. Additionally, the Motorola Droid entered AdMob's ranking at No. 5 but does not feature in any other ranking.

Fig. 16: AdMob, Millennial Media and Opera, top devices, Nov-09

Rank	AdMob	Millenial Media*	Opera
1	Apple iPhone	Apple iPhone	1. BlackBerry 8330 ("Curve")
2	Apple iPod Touch	BlackBerry Curve	2. LG LX600 ("Lotus")
3	HTC Dream	Samsung SPH-M800 (Instinct)	3. Samsung SPH-M810 ("Instinct S30")
4	Samsung R450	Samsung SCH-R450	4. Samsung SPH-M800 ("Instinct")
5	Motorola Droid	T-Mobile/HTC G1 (Dream)	5. LG CU920 ("Vu")
6	HTC Magic	BlackBerry Pearl	6. BlackBerry 9000 ("Bold")
7	BlackBerry 8300	Danger Sidekick 2008	7. BlackBerry 8310 ("Curve")
8	Kyocera S1300	LG VX9700 (Dare)	8. BlackBerry 9530 ("Storm")
9	Motorola RAZR V3	BlackBerry Storm	9. BlackBerry 8900 ("Curve")
10	Samsung R430	LG CU920 (Vu)	10. BlackBerry 8320 ("Curve")

Mobile phones only

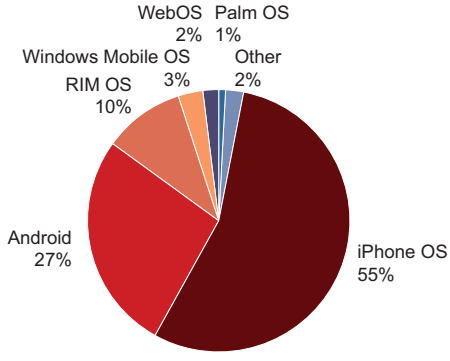
Sources: AdMob, Millennial Media, Opera

Smartphones did not take majority share of Millennial Media's or AdMob's ad impressions in November, comprising only 40% and 48.2% – a combined total of 4.9 billion ad requests. Of this slice, the Apple iPhone OS (on both the iPhone and the iPod Touch) accounted for 49% (21% of total ad impressions across both networks). In absolute terms, this amounts to 2.4 billion ad requests. Using Millennial Media's ratio of 1.02 ad requests per page view and 113 page views per user, this amounts to 2.35 billion page views from 20.8 million unique users accessing the Internet on iPhones and iPod Touches in the US in November.

By contrast, 7.27 million users browsed the Internet using the Android OS – accounting for 27% of AdMob's smartphone ad requests and 10.7% of AdMob ad requests from all devices, and 7% of Millennial Media's smartphone requests and 2.01% of Millennial Media's requests from all devices. Millennial Media records only one Android device in its ranking, the G1, compared with three in AdMob's: the HTC Dream, Motorola Droid and HTC Magic.

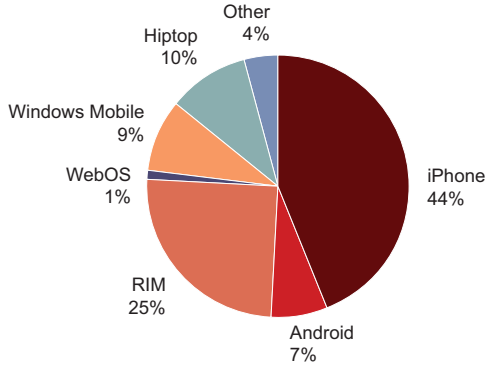
Only marginally more – 7.37 million – browsed the Internet using the RIM OS on BlackBerry devices (10% of AdMob's smartphone ad requests (see fig. 17) and 25% of Millennial Media's (see fig. 18). Millennial Media saw a decrease in RIM share.

Fig. 17: AdMob, smartphone requests by OS in US, Nov-09



Source: AdMob

Fig. 18: US, smartphone-OS mix, Nov-09



Source: Millennial Media

The presence and absence of other operating systems on each vendor's traffic splits, such as Hiptop (the OS used on the Danger Sidekick) and the Palm Pre, reveal how varied data reports can be even in the same market and further confirm that, taken alone, a dataset does not tell the whole story. Comparing the two can provide a more robust indication of real numbers, and top-level conclusions can be drawn. Based on this data, it could be said that about half of all mobile Internet users in the US are smartphone users, and less than one-third are iPhone users.

Browsing trends

Opera reported that in December the number of pages viewed on its browser in the US grew 228.1% and the number of Opera unique users grew 128.5%. Each US-based user viewed 276 pages (63 fewer than India), amounting to 6MB of compressed data per user (24KB compressed data per page view). BuzzCity reported 129.8 million ad requests for September, while AdMob reported 4.8 billion – from both Web sites and applications. Millennial Media reports that the average user session time on mobile Web was five minutes, two seconds.

The top 10 sites as reported on the Opera browser for the US for December (see fig. 19), and a five-day period on one US mobile operator's network in September reported by Openwave, reveal social-networking sites to be the most popular, with Facebook and MySpace ranking among the top five on each list (see fig. 20).

Fig. 19: Opera Mini, top sites by unique users, US, Dec-09

Rank	Site (rank Nov-09)
1	google.com (1)
2	facebook.com (2)
3	yahoo.com (3)
4	wikipedia.org (5)
5	myspace.com (4)
6	my.opera.com (7)
7	youtube.com (6)
8	cnn.com (8)
9	espn.go.com (9)
10	accuweather.com (10)

Source: Opera

Fig. 20: Openwave, top domains by impressions, five-day period, unnamed US operator, Sep-09

Rank	Site
1	myspace.com
2	craigslist.org
3	facebook.com
4	myxer.com
5	wap.aol.com
6	accuweather.com
7	plentyoffish.com
8	calltunes.operator.com
9	imdb.com
10	about.com

Source: Openwave

Informa viewpoint

Analyzing use of the mobile Internet is beset by challenges, not least the lack of a single measurement method and lack of comprehensive global data relating to different usage metrics. Available data is insightful, but it's advisable to exercise caution when drawing wider conclusions from stand-alone datasets based on varying metrics and timeframes. Comparing vendors' reports can go some way toward gaining a realistic overview, which Informa attempts to do in this top-level analysis, but caveats must be applied: Aggregated granular data combined from a wide variety of sources would enable an analysis of mobile Internet usage that is balanced and robust, while this overview serves only as a flavor of what that analysis would reveal. In isolation, individual datasets do not give the whole picture, and often they are biased toward mature markets, particularly the US, and a focus on smartphones.

With these caveats in mind, it's possible to draw some conclusions. Regional differences in mobile Internet usage trends are discernible – North America and Asia Pacific visibly lead the mobile Internet market in terms of usage, but growth in these regions might be slowing, while it is picking up in Africa. Informa believes that mobile Internet users are not only high-value business/consumer smartphone subscribers but also lower-value feature-phone users. Such users are arguably higher in number in markets where devices such as the iPhone are available, and they are driving significant growth in developing markets and those markets where smartphones are less prevalent.

In terms of the type of mobile Web content being consumed, Informa considers it unsurprising that social networking dominates, given its fixed-line popularity and the fact that services with communication at the core are only enhanced by "always on" connectivity. But there is also evidence to suggest that added mobility does not mean mobile Internet usage trends differ wildly from fixed-line trends: Video appears to be a strong candidate for growth, and short-form video is the most popular.

Resources

AdMob, Mobile Metrics Report, November 2009
http://metrics.admob.com/2009/12/november-2009-mobile-metrics-report/

BuzzCity, BuzzCity Campaign Planner
http://partner.buzzcity.com/campaignplanner.php

Bytemobile, Mobile Minute Metrics, November 2009
www.bytemobile.com/news-events/thought_leadership.html (registration required)

Comviva, Mobile Internet in Africa, June 2009
www.comviva.com/Resource%20Center/marketstudy/Comviva_MS_Mobile%20Internet_Africa_V1.0_June09.pdf (registration required)

Informate Mobile Intelligence, Mobile Usage in India, "An Informate Mobile Intelligence Report", Trend Analysis: April to September 2009
www.informatemi.com

InMobi, Network Summary, November 2009
http://inmobi.com/news/2009/11/25/inmobi-network-summary-4/

Millennial Media, SMART Report (US Scorecard for Mobile Advertising Reach and Targeting (SMART™)), November 2009
www.millennialmedia.com/research/smart/

Novarra, Mobile Internet Experience Update, October 2009
www.novarra.com/contact/ (registration required)

Openwave, Mobile Web Insights, October 6, 2009
www.openwave.com/us/spotlight/mii.htm?doc=1009 (registration required)

Opera, State of the Mobile Web, December 22, 2009
www.opera.com/smw/2009/11/

Quattro Wireless, The Mobile ROI Report for Brands, Results and Objectives Index for Mobile Advertising, October 2009
www.quattrowireless.com/images/uploads/Quattro_Wireless_Mobile_R.O_.I_._Summary_October_2009_.pdf

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