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THE NETWORKED ECONOMY: HOW TECHNOLOGY, INNOVATION AND VENTURE CAPITAL ARE TRANSFORMING THE FUTURE OF MOBILE



FACEBOOK: THE FIRST MOBILE OPERATOR TO SERVE ONE BILLION CUSTOMERS?

i BY JENNIFER L. SCHENKER

When news leaked in January that Facebook was allowing iPhone users in the U.S. and Canada to make free phone calls through its Messenger App the technorati speculated the service could become a Skype killer.

Skype may, in fact, wind up being the collateral damage. Facebook, which has a billion customers, could very well become the world's largest phone operator. "There is no doubt that Facebook is now the biggest threat to mobile operators," says veteran mobile industry analyst John Strand, founder of Copenhagen-based Strand Consult, which published a February report on Facebook's role in the mobile ecosystem.

Facebook has more users than China Mobile, the world's largest phone company; its customer base is double that of Vodafone, and bigger than India's Airtel, America Movil and Telefonica combined.

The popular social networking site, which declined Informilo's request for comment on its mobile strategy, has already cut deeply into operator revenues from services like SMS and MMS because users prefer to exchange messages and photos via Facebook for free. Now it could start putting a serious crimp in voice traffic.

"Its potential impact on the global telecoms industry is massive," Emeka Obiodu, a principal analyst at researcher Ovum said in a recent research note. "A Facebook voice service has the potential to be the most disruptive communications solution in the smartphone era."

He cites two main reasons in his research note: with over a billion users, the Facebook voice service will instantly be available to more customers than mobile operators or Skype can reach in both emerging and developed markets.

Secondly, Facebook customers will be able to use the communication solutions without much hassle. There will be no new

ID to create, no new app to install, and no new user interface to get used to. In addition, as people on Facebook already have all their friends' contact details, there will be no requirement to seek out friends and add them to a contact list.

As a result, Facebook "could quickly emerge as the largest voice communications platform and the largest originator of calls on a global scale," says Obiodu.

For now, Facebook is offering a free voice service, via a feature added to its Messenger app, that is limited to letting its users in the U.S. and Canada call each other over WiFi or cellular data. You call someone by selecting that person's name in Messenger, tap the "i" button, and then press "Make free call." That person gets a push notification and you can then begin a free phone conversation. The VoIP service is just one more way of staying in contact with your network while staying within Facebook.

The service only works on the iPhone, between customers who have installed

Facebook co-founder Mark Zuckerberg could end up becoming the CEO of the world's largest mobile operator. Analysts say a Facebook voice service has the potential to be the most disruptive communications solution in the smartphone era.

the Facebook Messenger app, and does not even have most of the features of a traditional telephone service. But given that Facebook has more than a billion users, Ovum predicts that over time the evolution and performance of its VoIP service will have a significant impact on how voice services are offered and priced globally.

Obiodu and Strand both believe the launch of the VoIP service is about testing the market to see how receptive it is to Facebook offering voice services.

The social network will extract itself from its deal with Skype for voice calls on its website and seek to roll out its own voice service across all of its platforms, predicts Ovum. That should set it up to enhance the service by including video and a service similar to Skype Out that enables calls to telephone numbers. Ovum also expects Facebook to open up the calling application programming interfaces to developers so that they can integrate the service into Facebook apps and maybe even leverage WebRTC technologies for it.

Ovum believes Facebook will not make much money from doing this, if it makes any at all. Instead, it predicts Facebook will use the VoIP service to enhance its platform to sell advertising. The collateral damage will then hit telcos in the form of lost revenues. In its report, "The Future of Voice," Ovum predicts that VoIP services will cost telcos \$479 billion by 2020. However, it believes the lost revenue will not be earned by VoIP providers. Instead, the telecoms industry will forfeit its share of the customer's wallet to other industries within the economy.

CONTINUED ON PAGE 23

**SEE INSIDE
FOR A STORY ABOUT
THE 25 HOTTEST GLOBAL
MOBILE START-UPS**

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CONTENTS

- 01 23 **FACEBOOK: THE WORLD'S LARGEST MOBILE OPERATOR?**
- 02 03 **NEW SOFTWARE PLATFORMS ON THE HORIZON**
- 04 05 **MOBILE IS TRANSFORMING RETAIL**
- 06 07 **FACEBOOK: THE WORLD'S LARGEST MOBILE OPERATOR?**
- 08 09 **THE NOKIA/MICROSOFT PARTNERSHIP TWO YEARS ON**
- 10 11 **QUALCOMM'S PEGGY JOHNSON**
- 12 13 **TOP 25 GLOBAL MOBILE START-UPS**
- 14 15 **THE YEAR OF MOBILE ADVERTISING?**
- 16 17 **THE PERSONAL DATA CONUNDRUM**
- 18 19 **CLOSING THE MOBILE GENDER GAP**
- 20 21 **CYBERTHREATS TO SMARTPHONES ARE GROWING**
- 22 **THE OPERATOR START-UP CONNECTION**

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Mobile Platform Wars

Innovation in new user experiences is likely to come from new software platforms

BY JENNIFER L. SCHENKER

When it comes to mobile operating systems attention usually centers on the highly popular Apple iOS and Google's Android. But over the next two years, say analysts, innovation in user experiences is likely to come from new software platforms.

This year's Mobile World Congress will see major announcements from Jolla (Sailfish OS), Mozilla (Firefox OS), Samsung's Tizen, and Ubuntu. All will claim advantages of openness and differentiation over Android and iOS but face a significant struggle to generate the scale needed for success. That said, a successful launch in Brazil in early 2013 and the requirement for an alternative to dominant Android look likely to help Firefox OS begin to succeed where other open-source alternatives have failed, predicts mobile consultancy CCS Insight.

The industry is ripe for change. Indeed, operators' need for an alternative to Android and iOS is expected to be discussed at the length during MWC, which will be held in Barcelona February 25-28.

THE CURRENT DUOPOLY

To be sure, Apple's iOS still has a strong position in terms of high-tier market share. The user experience, combined with a thriving, easy-to-use system for buying content and applications, makes the experience so sticky for users that the vast majority will never leave the ecosystem. It does, though, face several challenges. It remains to be seen if Apple can successfully take on Android in the lower end of the market. And, analysts say, the launch of new platforms will deliver a fresh wave of innovation such as extensive support for HTML5, visual multitasking, deep third-party service integration, and gesture-driven user interfaces. iOS offers none of these things, raising questions about the future of iOS, its integration with OSX and the timing of a new platform architecture, says CCS Insight.

Android, for its part, looks set to dominate this year's MWC. Don't expect to see major flagship launches, though; the focus will be on mid- and low-tier devices, which will make up most of the more than 900 million smartphones that analysts expects to be sold in 2013.

What's more, analysts say Android, already the world's most successful smartphone operating system, is now expanding into new areas. It appeared at

the 2013 Consumer Electronics show in cameras, media streamers, video monitors and even an oven. There was also widespread support for Android applications that worked in conjunction with all manner of consumer electronics from TVs and domestic appliances to watches and personal fitness devices.

That said, handset manufacturers are struggling to differentiate themselves and make money on Android phones. Indeed, it is one of the reasons that Samsung sought to reduce its reliance on Android for high-tier phones. Its Tizen platform has so far gained limited support from other manufacturers, but represents a growing proportion of Samsung's portfolio of smartphones and consumer electronics devices in 2013.

MICROSOFT'S MOVE

Microsoft has yet to grab a meaningful market share in the mobile space. In October it launched Windows 8, creating a new user experience that stretches from the desktop to tablets to mobile phones. Windows 8 uses two modes: the desktop mode (which looks just like Windows 7) and Metro, which is oriented for touch. The Metro user interface looks very promising for tablets as it offers more functionality than iOS and Android. Microsoft is billing Windows 8 as an easy-to-use, integrated, turn-it-on and it just works user experience coming at a price that is more akin to Android than iOS, says Richard Windsor, who owns and

The three laws of robotics for mobile ecosystems

PLATFORM	AN ECOSYSTEM MUST BE EASY AND FUN ACCESS TO DIGITAL LIFE	AN ECOSYSTEM MUST BE EASY TO SET UP AND USE	AN ECOSYSTEM MUST CAPTURE TRAFFIC ON ITS OWN SERVERS
APPLE			
ANDROID			
BLACKBERRY			
WINDOWS			
FACEBOOK		N/A	
AMAZON		N/A	

BEST NOT GREAT
 OK BAD

Source: Radio Free Mobile research

A lack of profitability among most licensees, coupled with fresh competition from rival platforms, could force Google to reconsider Android's business model, says Geoff Blaber, an analyst at mobile consultancy CCS Insight. He predicts Google could end up providing additional incentives to a few favored manufacturers by offering a share of advertising revenue in return for a more-tailored Google user experience on their phones.

operates Radio Free Mobile, a blog that covers the mobile handset and handset software space. But Windows phones still face an up-hill battle in the market. (See the Nokia-Microsoft story on pages 8 and 9 for more information.)

BLACKBERRY'S BACK

On January 30th BlackBerry announced its new Blackberry 10 platform

alongside new BlackBerry Z10 and Q10 devices. It also announced a company rebranding that will see RIM become simply BlackBerry. “The successful launch of BlackBerry 10 and two new devices is a remarkable achievement but represents merely the first step in a long and challenging recovery that remains far from certain,” says CCS Insight.

IS THE FUTURE STACKED?

Winners are far from clear. But one thing is: the jostling for market power among some of the players is limiting freedom of choice. A February report from Morgan Stanley estimates that Google pays rival Apple roughly \$1 billion per year to remain the default search option on devices like the iPhone and iPad. But, Google, in turn, is allegedly blocking rival Yandex by prohibiting Android handset makers from integrating its Russian rival as a default search engine.

Browsers are also raising questions about openness. They can run applications and have the huge advantage of being able to offer developers a true “write once run anywhere experience” but – up until now – that has come at a cost. These applications do not run in native code and as a result have both a performance and a functionality disadvantage compared with those written directly to iOS, Android or Windows Phone. The integration may lead to a smoother experience but integrating the software stack has a darker side. Apple, with its native apps, locked-down platform and tight control over which developer apps are released; Google with its Chrome browser being integrated into Android’s operating system, Google search technology and Google Plus; and Microsoft, which is also developing integrated offerings for its desktop and phone operating systems, makes independent offerings and interoperability much more difficult.

Mozilla, the organization behind the Firefox browser, believes it is wrong – and unnecessary – to bind users of mobile phones to a single corporate entity. “The fight is about keeping the Internet – including the mobile Web – an engine of choice and innovation as well as economic value,” Mozilla Chairman Mitchell Baker said, in an interview with Informilo earlier this year. Mozilla is launching what it hopes will be a powerful counterweight: the Firefox OS, a browser-based operating system for mobile devices that

A successful launch in Brazil in early 2013 and the requirement for an alternative to dominant Android look likely to help Firefox OS begin to succeed where other open-source alternatives have failed, predicts mobile consultancy CCS Insight.

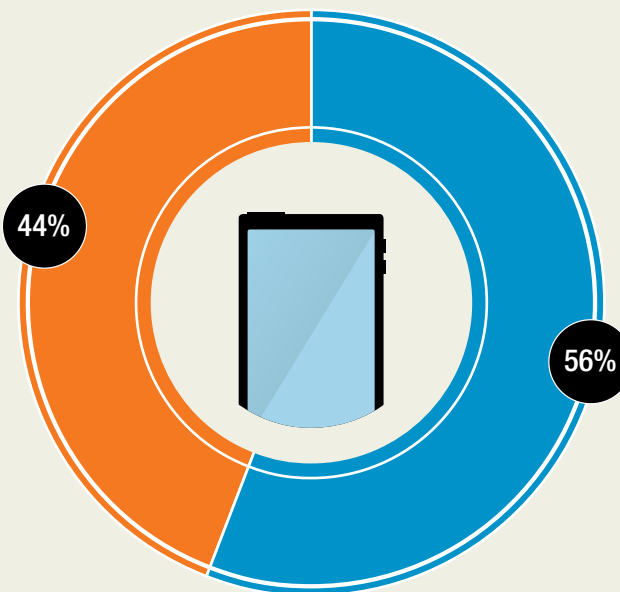
bills itself as “fully open” and seeks to push the adoption of HTML5 as a viable platform option for the mobile industry.

HTML5 promises to enable developers to create apps that work on any operating system and plug into a device’s advanced hardware and software even if the apps are not native. The first commercial deployment is planned in Latin America with Telefonica early this year. Other telcos – including Deutsche Telekom, Etisalat, Smart, Sprint, Telecom Italia, Telefonica and Telenor – have also signed up. Expect a flurry of announcements during Mobile World Congress. Operators are eager to have an alternative to Google and Apple. They have placed their bets on Linux and Microsoft in the past, only to see those efforts sputter.

For the next year or so the impact of Mozilla looks like it will be minimal. But it is gunning for emerging markets, the biggest growth markets going forward. And it has demonstrated – with the Firefox browser – that it can rally developers to take on a giant and wrest away significant market share. When Firefox came on the market Internet Explorer had 98% of the global market. Today it accounts for 54% of global browser usage. The mobile industry also has its share of market leaders who looked like they had the market sewn up. Think Symbian or Nokia. For now, Apple and Google may be ahead; but there is plenty of opportunity for new entrants. The war is by no means over. It is just getting started.

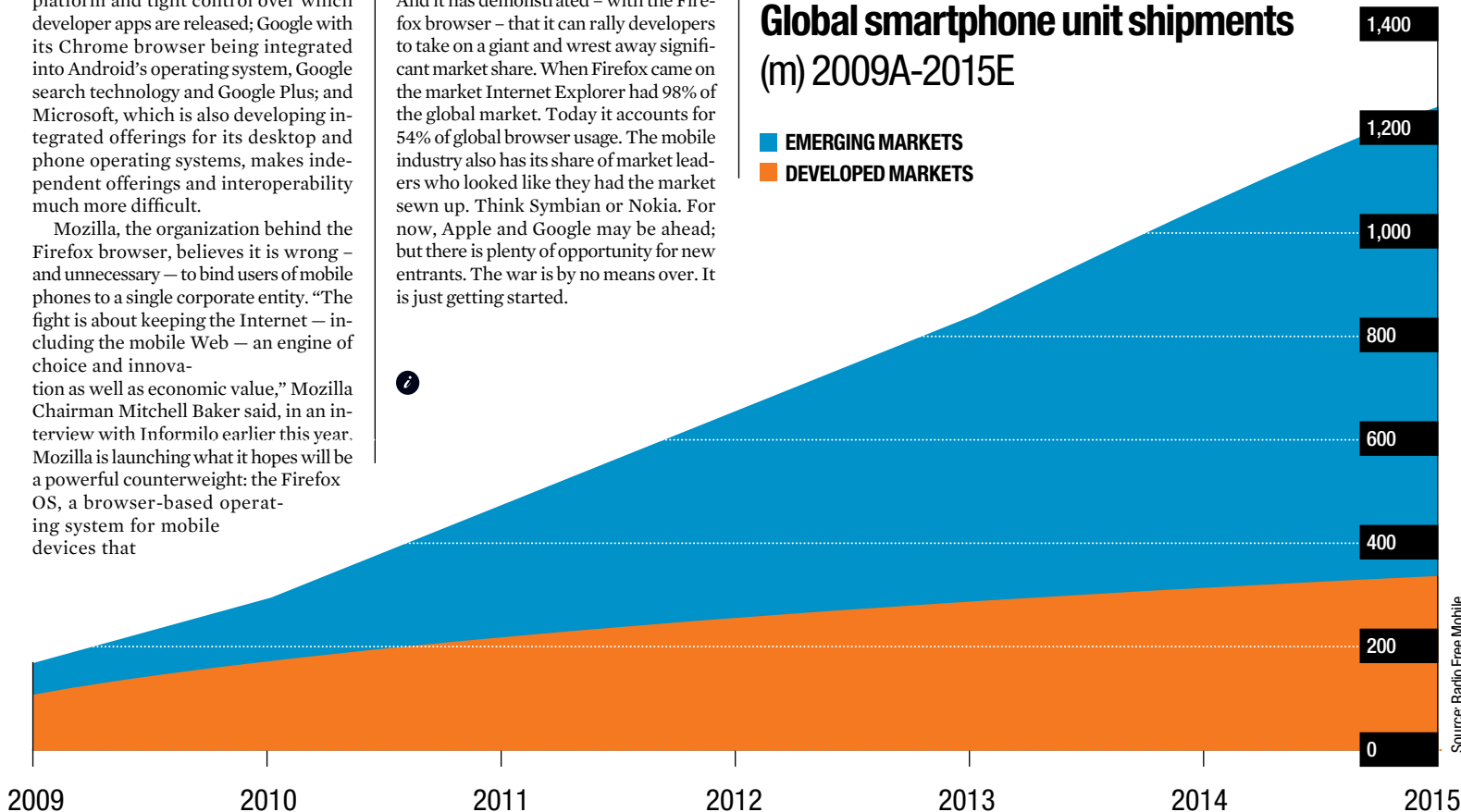
Mobile data traffic market share split between iPhone 5 and Galaxy SIII

■ APPLE IPHONE 5
■ SAMSUNG GALAXY SIII



Global smartphone unit shipments (m) 2009A-2015E

■ EMERGING MARKETS
■ DEVELOPED MARKETS



Source: Radio Free Mobile

How Mobile Is Transforming Retail

BY JENNIFER L. SCHENKER

It won't be long before you could be anywhere — in either a private or public setting — and could scan everything in sight. The phone will ask you if you are buying or selling, superimpose a price tag on each item, and ask you if you want to complete the transaction virtually or in a store.

An app like this could come in handy when you spot someone in the airport wearing a coat that you covet or when you fall in love with an antique clock at a friend's place. So just how will your phone — with the help of a good broadband connection — use pixilated images to price the products? That is where eBay's database comes in. The Silicon Valley company, which started out 16 years ago as a marketplace for the sale of goods between individuals, today has an extensive inventory of new products and a huge database of quirky old ones.

eBay is zooming in on the precise moment when people become aware of and interested in a product and making it easy to point, click and buy using PayPal, its mobile payment service. It is called situational commerce and Steve Yankovich, the company's vice president of innovation and new ventures, promises "it is going to change everything."

It is already changing that nature of what eBay is and does. "It is no longer just about e-commerce; we are now playing in the ocean of all commerce," says Yankovich, who, along with PayPal President David Marcus, will be attending the Mobile World Congress in Barcelona February 25-28.

It is no surprise that eBay now exhibits alongside mobile operators at the show. Mobile is core to eBay's business, whether it's facilitating the actual transaction or the payment processing itself. Today, the company says, one in three eBay Marketplace transactions has a mobile component.

eBay mobile finished 2012 with \$13 billion in payment volume — more than double what it generated the prior year — and PayPal mobile handled almost \$14 billion — a 250% increase over 2011.

In 2013, the company expects each unit to exceed \$20 billion in payment volume, a testament to how the mobile revolution is rapidly changing the retail landscape.

The next wave of services is ushering in a dramatic blurring of the lines between e-commerce, m-commerce and high-street retail. Nearly half of local shopping now starts on a mobile browser and approximately one in three mobile transactions is actually done in store. "For us the smart phone is the hub — it is absolutely key," says Yankovich.

Physical retailers are starting to use Internet technology to make consumers'



Window shopping with PayPal: By scanning QR codes with their mobile phones shoppers in Amsterdam's trendy 9 Straatjes district can use PayPal to directly buy products they see through the store's window — regardless of whether the store is open or not — and have them delivered to their home addresses.

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lives easier in several different ways. Soon there will be no more worrying about redeeming coupons or loyalty points — anything you have earned in the offline or online worlds will be digitally recorded and automatically credited at time of purchase, no matter where you buy. Since payments are mobile they will no longer

be tied to old-fashioned cash registers, freeing sales assistants inside stores to help customers check out and pay from the aisle or changing room. Context-relevant location-based shopping experiences will become the norm, meaning customers will be able to skip waiting in line, by ordering remotely and then picking up their food or favorite drink in-store.

In this new omni-channel world, merchandise and promotions will not only be consistent across all retail channels, adapting to consumers who want to use different channels simultaneously — the offers will be personalized according to a specific consumer's purchase patterns, social network affinities, website visits, loyalty programs and other mined data.

eBay is helping lead the way. It plans to launch new hardware at the Mobile World Congress and will showcase some of its state-of-the-art services.

Almost a year ago the company launched a PayPal Here mobile card reader device that competes directly with Square, a credit-card reader and mobile app developed by Twitter co-founder Jack Dorsey. To date neither company has launched a comparable solution for

countries that predominantly use chip and pin technology. At MWC PayPal will announce that it plans a European launch for a fully-encrypted, palm-sized chip and pin device that can be paired with an existing smartphone via Bluetooth. The device will be available in the UK this summer and rolled out to other countries later. Greedy Goat, which sells ice cream made from British goat's milk in Borough Market, a popular London food and produce market, will be among the first to use the device to accept credit card payments.

Card reader devices aid small businesses that normally would not be able to handle credit card transactions. But a key to eBay and PayPal's success in the market is that the majority of its innovative new services work with existing hardware. A few of those services include:

- In France, customers can already order a meal from McDonald's on smart phones via the GoMcDo app or online. They can pay with PayPal, scan their confirmation QR code at a kiosk at any of the 30 participating locations, and "check in," eliminating the need to wait in the general line. PayPal is rolling out



Steve Yankovich, vice president of innovation and new ventures at eBay, leads a newly-formed team focused on driving innovative new approaches to connecting retailers, merchants and sellers with consumers around the world.

a similar service at Jamba Juice in the U.S. and has partnered with NCR, the payment solutions provider, to make it easier for other restaurants to integrate this payment method into their existing systems. (This service will also be offered at two of the restaurants inside the Mobile World Congress this year.)

- In the United Kingdom, customers at over 400 Pizza Express restaurants can settle their bills without having to flag down a waiter. Once they are done eat-



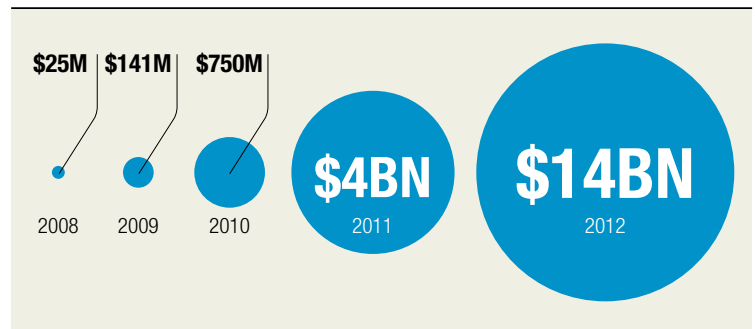
ing, all they need to do is pull up their Pizza Express app and pay with PayPal. The waiter is notified wirelessly on his POS system and the customer is free to walk out the door.

- In the Netherlands, shoppers in Amsterdam's trendy 9 Straatjes district can use PayPal to directly buy what the mannequins are wearing in the store windows with a single tap of the button — whether the store is open or not — and have it delivered to an address of their choosing.
- In the U.S., an eBay-developed Holiday Gift Finder iPhone app for toy store FAO Schwarz suggests gifts for shoppers based on gender, age, price range and product type, leveraging available inventory in the FAO Schwarz eBay Store. Shoppers can buy the item through the app using PayPal.
- eBay's mobile marketplaces app is now available in eight languages in 190 countries around the world and localized versions of eBay's RedLaser comparative shopping app are available in Brazil, the U.S., UK, Germany, France, Italy, Spain and Australia.
- Major operators like Vodafone are putting near field communications (NFC) at the center of their m-commerce strategies. The SIM-card-anchored service, which requires specially-adapted mobile phones and point-of-sale terminals, aims to replace the plastic cards populating customers' wallets and purses. (See the story on pages 6 and 7.) But like PayPal's Marcus, Yankovich dismisses NFC, which has been slow to roll out. "NFC doesn't matter. We don't need it," he says.

In keeping with its broader goal of addressing not just e-commerce or mobile commerce but all commerce, eBay has launched a Red Laser bar code scanning app that helps consumers comparison shop in the physical world. It also launched a Red Laser "In-Store Experience" service that helps retailers communicate with their customers on the home screen of a kiosk by showing special offers, store maps, and items relevant to them when they step into a particular store. Best Buy was the first retailer to partner with RedLaser and geofence its roughly 1,100 US locations (when customers who have opted in get close to a store, or go to a particular part of a store, promotions pop into their smartphones). It was quickly followed by Target and Walgreens, which geofenced nearly 1,800 and over 8,000 stores in the U.S. respectively. "We want to help people experience the physical store in a different way," says Yankovich.

If Yankovich has anything to do with it expect the company to keep powering things that don't look at all like what was once considered a typical eBay transaction, whether it be in physical stores or on mobile phones.

PAYPAL MOBILE PAYMENTS



PAYPAL GLOBAL FOOTPRINT



PAYPAL 2012 YEAR IN REVIEW

\$145BN	\$5.6BN	\$41.5BN	692M	123M	5.3M
TOTAL PAYMENT VOLUME UP 22% FROM 2011	ANNUAL REVENUE UP 26% FROM 2011	Q4 PAYMENT VOLUME UP 24% FROM Q4 2011	Q4 PAYMENTS BUSIEST QUARTER EVER	ACTIVE ACCOUNTS AND STILL GROWING	Q4 NEW ACCOUNTS BEST QUARTER IN 8 YEARS

Left: A new version of the mobile credit card reader PayPal Here, based around chip and pin technology, will launch in the UK this summer and later become available throughout Europe. Greedy Goat, which sells ice cream made from British goat's milk in Borough Market, a popular London food and produce market, will be among the first to use the device to accept credit card payments.

Right: In China, eBay has partnered with Xiu.com to create eBay Style, an iPhone and iPad app that features new fashion merchandise from eBay's most trusted U.S. sellers.



Mobile Money Goes Mainstream

BY D'ARCY DORAN

“Open your wallet,” Blackberry’s Frank Maduri says and recalls how, not long ago, people carried around physical photos of their spouse and their children. Those family photos, he says, were the first of your wallet’s contents to jump onto smartphones.

The rest of your wallet — the cash, receipts, and various credit, debit and loyalty cards — will all make the leap onto your smartphone too and soon, he says.

“It’s replaced every single thing; money is the last, and the toughest, frontier,” says Maduri, senior director in charge of NFC products, mobile payments and mobile wallets at Blackberry, formerly Research in Motion. “But it’s definitely going to happen.”

Major operators like Vodafone are putting NFC at the center of their m-commerce strategies. Vodafone is building its own mobile wallet that will use NFC technology to send encrypted data over short distances to carry out secure transactions. It plans to work with banks, retailers, transport and utility companies, event organizers, software developers and advertisers to host a range of services, including loyalty plans and gift voucher credits. The SIM card-anchored service aims to replace the plastic cards populating customers’ wallets and purses.

In coffee shops, fast food restaurants and mall clothing stores, the point-of-sale technology is already transforming. And after years of discussion dominated by banks and network operators, Maduri says, the focus is now shifting to execution and the other half of the stakeholder equation: retailers and consumers.

The spread of smartphones, convenient experiences, better security and integrated solutions is driving m-commerce growth.

“Mobile is quickly becoming the new normal,” eBay CEO John Donahoe told analysts in January. He speaks from experience — eBay’s subsidiary PayPal has

been one of the biggest early beneficiaries. It saw mobile payments surge to \$14 billion last year — a 250% increase over 2011. PayPal projects its mobile payments will rise to \$20 billion in 2013, which it says will be “the year that we will truly see disruption in the shopping and payments space.” (See the story on pages 4 and 5.)

Globally, mobile payments are expected to rise to more than \$1 trillion by 2017, according to separate estimates by market analysts IDC and Juniper Research. That trillion-dollar figure, IDC says, is just the tip of the iceberg — 2.5% — of the total possible transactions that could be settled through mobile payments in 2017.

The volume of transactions depends on whether financial institutions, operators and retailers can agree on common standards. If the stakeholders insist on going separate ways, they will fall short of the forecast, IDC says. But, it adds, if the market consolidates into a few dominant platforms for each country, it could be much higher than \$1 trillion.

Advancing mobile payment capabilities is a priority for Blackberry, Maduri says. NFC mobile payment technology is standard on its 7 series and latest 10 series BlackBerry smartphones; the company is building NFC infrastructure for Canadian network operators and has developed its own Visa-certified Secure Element Manager (SEM) wireless payment system for devices that support NFC.

Blackberry hopes its system can compete with others like Google Wallet, which has been rolling out with the help of MasterCard Paypass and Isis, a mobile wallet initiative led by AT&T, T-Mobile and Verizon that has begun trials in Austin, Texas and Salt Lake City, Utah.

The fragmented world of mobile payments is moving quickly. Maduri recalls a recent visit to a store where at the till, the retailer accepted Paypass, PayPal, and NFC-based contactless card payment, along with other types of mobile wallets. He believes e-commerce is pushing bricks-and-mortar stores to invest in order to remove any friction at the point of sale. Some retailers are using mobile payments to replace cash registers and check-out lines altogether.

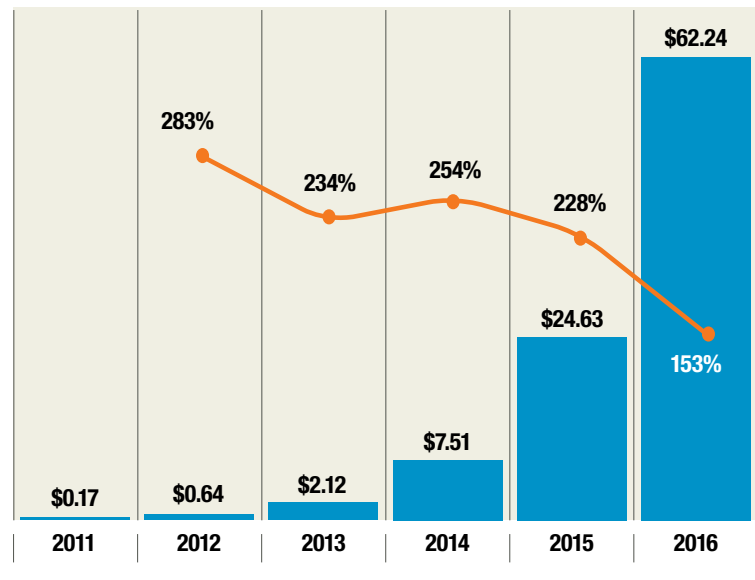
“They’re terrified of things like show-rooming, where people are going into their store to try things on and see what they really look like and then going home and buying them on Amazon,” Maduri says. “They can’t sit still.”

Retailers have to change for many reasons, he adds. “I think we’re at a point now where we’re seeing critical mass for them adopting mobile. It is happening.”

Starbucks is one of the pioneers in encouraging customers to abandon cash or

US Proximity Mobile Payment Transaction Value, 2011-2016

billions and % change



■ PROXIMITY MOBILE PAYMENT TRANSACTION VALUE
 ■ % CHANGE

Note: Includes point-of-sale transactions made by using a mobile device as a payment method, including by swiping a mobile device at a register or tapping a mobile device to complete transaction; excludes purchases of digital goods on mobile devices, purchases made remotely on mobile devices that are delivered later on, and transactions made via tablets.

Source: eMarketer, September 2012

card transactions and use their phones instead. Its payment app combines loyalty cards, vouchers and payments into one step, making the customer’s experience smoother while generating valuable data for the company.

“More than 7 million customers now use one of our mobile payment apps — translating into 2.1 million mobile payment transactions each week — with hundreds of thousands of additional Starbucks mobile app downloads each week,” Starbucks spokeswoman Linda Mills says.

The Starbucks app is based on Square, a credit-card reader and mobile app developed by Twitter co-founder Jack Dorsey. The start-up, which was created for people who are cut out of traditional payments services, is now processing \$10 billion worth of transactions a year. This experience led Starbucks to invest \$25 million in Square in the start-up’s latest round of fund-raising, and the chain

recently began selling the credit-card reading units in its 7,000 U.S. stores for \$10 each.

Successful mobile money services have to fine-tune the technology to match customer behavior and expectations, Maduri says. He points to PayPal’s \$14 billion in mobile transactions last year.

“Why?” he asks. “A single click. What we have to do and where we’re going next is how do you eliminate clicks and friction for the consumer.”

OPERATORS EMBRACE NFC

The killer app for mobile banking might be something as simple as enabling customers to check their balances at any time, anywhere, says Andrew Griffin, director or market intelligence at Monitise, the British company that provides the technology behind mobile money services for banks and other organizations across the globe. It handles hundreds of millions



Above: Starbucks says each week its customers make 2.1 million mobile payment transaction, and that hundreds of thousands of customers download its mobile app.

Right: Starbucks' success with the Square mobile payment application prompted the coffee chain to invest \$25 million into the start-up's latest round of financing.

Far right: Paying for a taxi with a mobile phone is now a standard service in a number of countries.



of transactions annually for millions for customers. Griffin says on average some of Monitise's banking clients are seeing customers log in to check their balances 20 times per month or more — up to five times the usage for Internet banking.

"What we see in the press about mobile money is maybe missing the point about this fantastic increase in frequency of contact with your bank that mobile brings," Griffin says. "They're definitely a first screen for people who use them and it's that basis for wanting to add more functionality to the app."

In developed markets the services that are growing fastest are bill payments, m-commerce, and bank transfers.

"Every innovation has to be ten times greater than what it's replacing so simply waving a mobile phone at a point-of-sale terminal to make a payment is not better than pulling a card out of your wallet," Griffin says.

PayPal President David Marcus might be NFC's most vocal critic. In January he predicted that NFC will fail to gain mass adoption this year.

Major operators like Vodafone are putting NFC at the center of their m-commerce strategies. Vodafone is building its own mobile wallet that will use NFC technology to send encrypted data over short distances to carry out secure transactions. It plans to work with banks, retailers, transport and utility companies, event organizers, software developers and advertisers to host a range of services, including loyalty plans and gift voucher credits. The SIM card-anchored service aims to replace the plastic cards populating customers' wallets and purses.

"Vodafone's approach is very much one of collaboration for NFC," Vodafone spokesman Simon Gordon said. "We've

teamed up with Visa to help develop our own stored value account and are engaging with banks to offer them space for their own virtual cards in our mobile wallet, which we plan to roll-out during the year."

Amid the debate over NFC's prospects, \$4 billion in mobile payments were made using the technology last year and that number is expected to rise to \$191 billion in 2017, according to market analysts ABI Research. The research firm predicts it will take at least two years for the market to agree on standards but transportation and ticketing will be the first market to benefit.

Nine of the top ten mobile phone manufacturers have already released NFC-enabled handsets to the market with 102 million shipping last year, ABI Research says, adding it expects that number to more than double this year. (The major holdout is Apple, which said it did not include NFC on its latest iPhone because it felt its existing barcode scanning features were sufficient.)

Monitise's position is to wait and see whether NFC payments go mainstream on a country-by-country basis, and then help banks add NFC to their banking apps, Griffin says. Ultimately, stakeholders will have to work together based on consumer behavior.

"The history of payments has been all about interworking networks, which are all about getting massive scale, but [with each party] taking only a tiny slice of that as an interchange fee, and that's really what Monitise is built on," Griffin says, paraphrasing a line often spoken by the company's CEO Alastair Lukies.

"The point is 10% of a big number is better than 100% of nothing."



Mobile payments by the numbers

By 2017...

...global mobile payment transactions will nearly quadruple from 2012's figures, rising to more than \$1.3 trillion.

...NFC transactions will account for 54% of the total value of mobile payments.

...retail transactions for physical goods bought via mobile will account for 30% of eRetail, and 4% of global retail transactions.

...global NFC retail transaction values are now expected to reach \$110 billion, significantly below the \$180 billion previously forecast.

Source: Juniper Research

Worldwide mobile payment transaction values will surpass \$171.5 billion in 2012, a 61.9% increase from 2011 values of \$105.9 billion.

The number of mobile payment users will reach 212.2 million in 2012, up from 160.5 million in 2011.

Gartner expects Web/WAP access to account for about 88% of total transactions in North America and about 80% in Western Europe by 2016. NFC transactions will remain relatively low through 2015, although growth will start to pick up from 2016.

Eastern Europe will see the highest user growth between 2011 and 2016, albeit from a smaller user base. Asia/Pacific tops all regions in the number of users, followed by Africa.

By 2015, 33% of consumer brands will integrate payment into their branded mobile apps.

Source: Gartner Group

By 2017, worldwide purchase volume over mobile devices will exceed \$1 trillion.

While this figure is large in dollar terms, it is a tiny fraction (just above 2.5% in 2017) of the total amount of worldwide commerce that is theoretically addressable by mobile payments.

Most of the dollar volume will be in the form of e-commerce spending done over mobile devices.

Proximity payments will ride upgrades in point-of-sale and mobile device technology to become the second-largest category of mobile payments spending, about evenly divided between the two methods.

Person-to-person or point-to-point (P2P) fund transfers will be a distant third, mainly due to a lack of common standards for sending money across borders using mobile devices as well as a lack of locations for adding cash to and withdrawing cash from the system.

Source: IDC

Proximity mobile payments (point-of-sale payments using a mobile phone as a payment device) reached just \$640 million in 2012. But that's up 283% from 2011; it will rise a further 234% by the end of 2013.

By 2016, proximity mobile payments will have exploded in the US, and total transaction value will hit \$62.24 billion.

Source: eMarketer

Nearly 72% of consumers aged 20-40 in the U.S. and the UK use mobile devices while in-store to compare prices, but the majority leave before making a purchase.

Source: Accenture Interactive

A Two-Year Report Card: The Nokia/Microsoft Partnership

BY MATT COWAN

When Stephen Elop took the helm of the struggling mobile handset giant Nokia on the last day of summer in 2010, his to-do list was short but daunting: revamp the corporate culture of a Finnish institution and reinvent the business for a new age. Quickly.

Less than five months later, he would appear in front of investors at a swanky London hotel to announce a bold shift in strategy. In the lead-up to the event, a memo was leaked in which Elop likened Nokia's predicament to being aboard a burning platform. Still, Elop's leap went further than many had expected. Nokia announced it was forming a strategic alliance with Microsoft (which also happened to be Elop's former employer) in an attempt to create a third mobile 'ecosystem' to challenge Apple and Google Android devices. This would come at the expense of Nokia's own Symbian operating system (see burning platform) and the Meego mobile OS which was being developed jointly with Intel.

Microsoft CEO Steve Ballmer joined Elop on stage to help spell out the case for the move. "This partnership with Nokia will dramatically accelerate the development of a vibrant, strong Windows Phone ecosystem," he predicted. Still, observers were also cautioned not to expect an overnight transformation. 2011 and 2012 would be "transition years," counseled the Nokia press release.

As the Finnish handset maker entered 2013, it stunned observers by announcing that it had achieved underlying profitability in the fourth quarter of 2012 thanks to better-than-expected sales of its flagship Lumia smartphone.

Nokia wasn't due to issue its fourth quarter and full year results until January 24th, but details of these accomplishments were made public two weeks in advance. Investors rewarded the company with a healthy boost to the stock and talk of a turnaround began in earnest.

For Elop, the timing was fortuitous. He'd said the transition would take two years, and two years on he needed something to show for all of the pain the company had endured.

Still, there was a caveat: the next quarter wasn't shaping up to be quite so strong. Two weeks later, Nokia announced plans to cut its dividend for the first time in over 20 years to preserve cash. Market enthusiasm cooled once again.

So has the company truly turned a corner? Is the bet on Windows Phone

"Two years is a really important milestone and my assessment would be that Nokia is probably not as far along the road as it had expected to be," says Ben Wood, Chief of Research at CCS Insight. "It's proved a lot more challenging to get traction around Windows Phone than they had anticipated."

finally proving its merits? Can Nokia and Windows indeed create a vibrant third ecosystem that will thrive and evolve to one day challenge smartphone leaders like Apple and Samsung? To mark the second anniversary of the Nokia Microsoft alliance, Informilo decided to put together a report card to assess progress.

"Two years is a really important milestone and my assessment would be that Nokia is probably not as far along the road as it had expected to be," says Ben Wood, Chief of Research at CCS Insight. "It's proved a lot more challenging to get traction around Windows Phone than they had anticipated."

The technology research firm Gartner recently published data showing that while Nokia's handset sales improved in the fourth quarter, thanks to the launch of new Lumia Windows Phone 8 models and a good response to its Asha mobile phone line, its share of the total market continued to drop from 23% in Q4 2011 to 18%, the lowest it's ever been.

Gartner's data also shows sales of Nokia smartphones in 2012 dropped 53.6% from the previous year. Hardly the trajectory Elop had been looking for when he cast off from that burning platform.

Ten months ago, the head of mobile at IHS Screen Digest Ian Fogg penned a warning that Nokia's Windows Phone strategy was on the brink of failing. The recent hoopla around Lumia sales has failed to impress him. "Nokia has markedly little momentum with Windows Phone shipping 4.4 million in Q4, the launch quarter for Windows Phone 8. The launch quarter for Windows 8 itself. It's quite a small number," he tells Informilo.

By comparison he points out that Sony, historically a much smaller player in the mobile market and now firmly in the Android camp, shipped 8.7 million smartphones in the same quarter.

Nokia's flagship Lumia 920 comes in an array of arresting colors, and features a sleek polycarbonate casing.





Nokia Chief Executive **Stephen Elop** has bet his company's future on the partnership with Microsoft, the American software giant where he once worked as an executive.

“Although Nokia has made some headway with Windows Phone, it's very modest headway in a market that is moving very quickly and where Nokia's competitors are selling smartphones in ever greater numbers,” says Fogg.

Data from Strategy Analytics shows that Nokia retained its position as the world's third-largest smartphone vendor in 2012, but its share in the competitive upper end of the market dwindled from 16% to 5%.

The company's latest portfolio of Lumia smartphones has drawn praise for standing out from the crowd. The flagship Lumia 920, for instance, comes in an array of arresting colors, and features a sleek polycarbonate casing in addition to the things Nokia is known for: impressive camera technology and reliable maps. A significant improvement on previous efforts, agrees analyst Linda Sui, but not yet the hero model that will take down the iPhone or Samsung S3.

“I have a nickname for the iPhone and I call it the Hotel California phone,” jokes CCS Insight's Wood. “Once you're in, it's very difficult to leave. Once you spend a ton of money on apps and accessories and then you've got Apple TV and an iPad and everything else, before you know it you're worshipping at the iTemple and it's difficult to find another religion.”

Gartner mobile analyst Carolina Milanesi is somewhat more optimistic. “I think they have reached the turning point. They have now the foundation done and need to build on it and fast,” she says. She concedes, though, that Nokia and Microsoft have likely not made as much progress as they'd hoped to in terms of creating a competitive third ecosystem.

The very term “ecosystem” implies a fertile landscape where seedlings can sprout and flourish. In the mobile space, it is the apps that produce the oxygen respon-

sible for the vitality of the environment.

“Microsoft has done a decent job but it's taken them 18 months to get to 125,000 apps. BlackBerry has launched BlackBerry 10 with 75,000 apps and the expectation of having 100,000 within 12 weeks. And they seem to have won the hearts and minds of the developers more effectively than Nokia has been able to,” says Wood.

“To be a smartphone platform, it needs to have wide app support,” agrees Fogg. “An ecosystem needs to be a certain scale or the third-party developers won't both-

er to support it. Without their support, there will be fewer apps....It becomes a virtuous circle if you do it right, which is what's happening with Google's Android and Apple and it becomes a vicious circle that goes in the exact opposite direction if you don't get that critical scale. And at the moment Windows Phone 8 is sub-scale. It just isn't there.”

What's needed now, he says, is growth that bears a resemblance to a hockey stick.

Of course, recent history demonstrates just how quickly things can change in the mobile sector. Gartner data shows Nokia's

share of the global handset market peaked in the fourth quarter of 2007 at over 40%. This was the same year that the iPhone was launched and Android was unveiled. In just over five years, the newcomers have become the industry's dominant forces and Finnish company that's been iterating since it was founded as a paper mill in 1871 is seeking yet another successful reinvention.

Can a shift like we've seen over the past five or so years happen again? “The market is more complex now, which makes it more stable,” says Gartner's Milanesi. “It takes more than a good product to get successful. In the good old days you had one hit and you got to the top even if just for a few quarters. Think of Sony-Ericsson and Motorola.”

Asked for a prediction of where Nokia will be in a year's time, Wood ducks. “I just don't know. I've been sitting here quarter on quarter for the past two years trying to look into the crystal ball and predict Nokia's future,” he says. “What I will tell you is, Nokia's 2013 portfolio is their most important set of new products that they have ever delivered.”

Two years on, the Nokia/Microsoft alliance is intact and is clearly making some progress. But realizing the vibrant and competitive ecosystem the companies envisaged at the outset will depend on what they do next.



Exhibit 1: Global Smartphone Vendor Shipments and Market Share in Q4 2012

SOURCE: STRATEGY ANALYTICS

GLOBAL SMARTPHONE VENDOR SHIPMENTS (MILLIONS OF UNITS)	Q4 '11	2011	Q4 '12	2012
SAMSUNG	36.5	97.4	63.0	213.0
APPLE	37.0	93.0	47.8	135.8
NOKIA	19.6	77.3	6.6	35.0
OTHERS	63.9	222.8	99.6	316.3
TOTAL	157.0	490.5	217.0	700.1

GLOBAL SMARTPHONE VENDOR MARKETSHARE %	Q4 '11	2011	Q4 '12	2012
SAMSUNG	23.2%	19.9%	29.0%	30.4%
APPLE	23.6%	19.0%	22.0%	19.4%
NOKIA	12.5%	15.8%	3.0%	5.0%
OTHERS	40.7%	45.4%	45.9%	45.2%
TOTAL	100.0%	100.0%	100.0%	100.0%

TOTAL GROWTH YEAR-OVER-YEAR %	55.9%	63.8%	38.2%	42.7%
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Mobile Maven

Not many women have given keynote speeches at the Mobile World Congress, an annual industry confab. But then again Peggy Johnson, Qualcomm's executive vice-president and president of global market development, has been blazing trails all of her life.



Peggy Johnson, Qualcomm's executive vice-president and president of global market development.

BY JENNIFER L. SCHENKER

Peggy Johnson, a scheduled keynote speaker at the 2013 Mobile World Congress, became an engineer, and later switched to business, at a time when women were not encouraged to enter either profession. Today she is one of the most influential people in the mobile sector.

Johnson, 51, the only woman on Qualcomm's senior management team, is credited with pioneering the world's first large-scale commercial app store, under the Brew initiative, helping developers monetize their applications long before Apple came along. She played a key role in Qualcomm's foray into mobile TV with MediaFlo, and, in her role as executive vice-president of Qualcomm in the Americas and India, helped lead its push to bring the benefits of wireless to emerging markets.

She currently serves as Qualcomm's executive vice-president and president of global market development. The job entails overseeing Qualcomm Labs, the company's internal incubator, which focuses on next generation wireless technologies.

"Qualcomm usually gives her the innovation things – challenges that everybody else is afraid to take on – and she does it and executes with great success," says Candace Johnson (no relation), another industry trailblazer who co-founded the Global Telecoms Women's Network (GTWN) 21 years ago. Qualcomm's Johnson has been a regular attendee of the GTWN's annual power breakfasts at Mobile World Congress over many years and has also been a speaker at the invitation-only events.

Following its 20th Anniversary celebration in Barcelona at the 2012 Mobile World Congress, the GTWN began working with industry lobbying group GSMA to raise the profile at the MWC of the swelling ranks of women who play a leading role in the mobile sector. The idea is to get more women included in the official program, a goal which is in keeping with GTWN's tradition of promoting senior women in the sector. In 2011 the GSMA appointed Anne Bouverot, a former executive vice president of mobile services for France Telecom Orange, as its director general and as a board member, but the majority of keynote speakers at the annual event continue to be men.

In recognition of the many ways women are shaping the sector the GSMA has invited more women to take the podium at this year's event in Barcelona. It is no surprise that Johnson is among the women asked to give a keynote this year: "She is a role model for all technology and business drivers," says GTWN's Candace Johnson. (See the box profiling some of the other women speaking at the 2013 MWC, which takes place February 25-28 in Barcelona.)

A CIRCUITOUS ROUTE

Peggy Johnson took a circuitous route to get where she is today. One of eight children, her father died when she was three. Her mother married a widower with seven children of his own, making Johnson the second youngest of 15 children in a single household. All were expected to go to college and to pay their own way. Although she had clear strengths in math and science she was advised by a high school guidance counselor to study business and enrolled as a business major at San Diego State University.

Her degree in engineering was due to a fluke encounter. Johnson had a job on campus to help pay tuition and was delivering mail to the engineering department. The faces of the two women working in the office lit up when she entered because they thought she was a prospective student, then fell when they learned why she was there. Undeterred, they proceeded to pitch her on the program, which was, of course, based around two areas she loves: math and science. She switched majors the next day. Her mother was speechless when she reported the news, says Johnson, but thought it was great.

Upon graduation she went to work for General Electric's military electronics division, coding anti-submarine warfare technology. In 1989 a job announcement for a software engineer caught her eye. The recruiting company was a four-year-old start-up called Qualcomm.

Early in her 23-year career at Qualcomm Johnson worked on the team that helped pioneer one of the first commercially successful machine-to-machine data applications, the OmniTRACS mobile asset tracking and data management system. It was, in fact, one of the earliest location-based services and it helped revolutionize the trucking industry. "It was a magical thing," recalls Johnson. This early form of contextual contact, which relied on triangulation between satellites for positioning, "changed productivity in the trucking industry," she recalls. At first, truckers were worried about "Big Brother" and privacy issues – raising some of the same questions that consumers have today about location-based services. But, she says, when the individual truckers found that the new technology meant that they could seize more opportunities and get bigger paychecks, they quickly embraced the system.

As a leader of the Brew initiative, she helped pioneer the world's first large-scale commercial app store, helping developers monetize their applications and inspiring the growth of what is now a multi-billion-dollar industry.

Johnson has often been tapped to

help the company test the waters in new areas and not all of the dossiers she was given turned into successful lines of business for Qualcomm. For example, the company ended up pulling out of the mobile TV business, selling its FLO spectrum to AT&T in 2010.

Johnson says she regrets nothing. "It takes a certain amount of fortitude to take on new areas," she says. "Each and every one has some risk to it. I was deeply involved in the FLO product and we ended up selling the spectrum and repurposing the platform. You have to embrace change. I am drawn to that risk aspect of product development and don't mind moving on if it doesn't work. It is like building an early-stage business. There is all that early-stage excitement. But if it doesn't work you just have to let it go."

"My message to other women in this industry is you don't have to be a man in skirts," says Johnson, who has excelled at a variety of high-powered executive roles while raising three children. "Be who you are and you will bring a valuable voice to this industry. We need the quiet and the aggressive and they both have roles to play," she says. "We are under-represented and I believe you need a mix, a diverse group of employees, to build the best products and the best services."

Her current job focuses on helping Qualcomm stay ahead of the curve on next-generation wireless technologies. That is where the work at Qualcomm Labs, the company's internal incubator, comes in. "There is a severe lack of spectrum in the world; the demand for data is expected to grow 1,000x over the next ten years," says Johnson. "We know we don't have 1,000 times more spectrum out there so we have to come up with a different answer." To that end, Qualcomm Labs is working on a technology called LTE Broadcast, which aims to make delivery of video over mobile networks more efficient, allowing wireless operators to better exploit their existing spectrum, infrastructure and chipsets to address the surging demand for data.

Qualcomm Labs are also working on "digital sixth-sense technologies" which allow smartphone apps to bridge the digital and physical worlds. For example, Qualcomm

Labs' Gimbal context-aware technologies are being used to deliver exclusive content and real-world game experiences for the "Star Trek Into Darkness" application based on the upcoming movie from Paramount.

The "Star Trek Into Darkness" app, which became available in late January, includes: an audio scan function that can be turned on to automatically recognize and reward users for watching "Star Trek Into Darkness" content on TV and other media; an image scan function that enables users to interact with images printed or viewable in the real world; a geofencing function for location-based experiences; the pushing of new "Star Trek Into Darkness" content, such as videos, images and wallpapers delivered directly to users' mobile devices; and special offers only available to app users.

Beyond entertainment and the use of contextual technologies for m-commerce, the mobile industry has a chance to transform health and education and improve the lives of women around the world; a diversified work force will help the industry achieve those goals, says Johnson.

Johnson encountered sexism in the sector early on in her career: a Japanese firm she interviewed with made it clear they didn't want women engineers and once, when walking into a meeting room with colleagues, she was mistaken for a secretary and asked to provide coffee for the group. Johnson laughed those things off but struggled with various managers' insistence that she speak up frequently at meetings and be more assertive. She told her bosses that they would need to measure her by other metrics because those traits aren't part of who she is.

"My message to other women in his industry is you don't have to be a man in skirts," says Johnson, who has managed a variety of high-powered executive roles while raising three children. "Be who you are and you will bring a valuable voice to this industry. We need the quiet and the aggressive and they both have roles to play. Women in technology careers are under-represented and I believe you need a mix, a diverse group of employees, to build the best products and the best services."

Johnson volunteers to go into schools and encourage young girls to consider a career in engineering in the mobile sector, a path she believes can help truly change the world. "What gets me excited is the impact that wireless will have on the world when it comes to areas like education, health and the empowerment of women. We are only at the beginning," she says. Through her current job, she intends to keep blazing trails, helping the industry to further transform the way people live and work.

Mobile Industry Shapers

Some of the other women leaders speaking at MWC this year

Padmasree Warrior, Chief Technology and Strategy Officer, Cisco

Warrior, Cisco's Chief Technology & Strategy Officer, is charged with aligning technology development and corporate strategy. She helps drive technology and operational innovation across the company and oversees strategic partnerships; mergers and acquisitions; the integration of new business models; the incubation of new technologies; and the cultivation of world-class technical talent. Warrior holds a bachelor of science degree in chemical engineering from the Indian Institute of Technology in New Delhi, a master of science degree in chemical engineering from Cornell University, and an honorary doctorate of engineering from New York's Polytechnic University. Prior to joining Cisco in 2007 she was the Chief Technology Officer at Motorola. Fast Company Magazine recently named her one of the "100 Most Creative People in Business."

Ann Mei Chang, Senior Advisor for Women and Technology at the U.S. State Department

Chang is a member of the GSMA mWomen working group, the International Steering Committee on the mobile program at the Cherie Blair Foundation for Women, and a member of the international steering committee of the Global Telecom Women's Network (GTWN). Prior to her current role, Chang, who earned a computer science degree from Stanford University, led engineering for Google's mobile applications and service worldwide, including products such as search, ads, Google Mobile Maps, Gmail, YouTube, Goggles and Voice Search across all major platforms. She oversaw 20x growth of Google's mobile business in just three years, delivering over \$1 billion in annualized revenues.

Lauren Cook, Principal Industry Advisor, Global Telecommunications, Media and Technology, World Bank

Prior to her recent move to the World Bank, Cook, who earned an MSc in Telecoms from the Rochester Institute of Technology and an MBA from Long Island University in New York, was Alcatel-Lucent's vice-president

4G/LTE technology. Over the past 25 years Cook has held executive and board of director roles at operators around the world including: MTC-Vodafone (now Zain) in the Middle East; Deutsche Telekom (Germany); Cable & Wireless (now Vodafone) in the UK; and Nynex (now Verizon) in the U.S. She is the founding director of several European and Asian wireless companies: Debitel (Germany), Telestet (now Wind Greece), and PT Satelindo of Indonesia.

Vicki MacLeod, member of the OECD's Business and Industry Advisory Committee

MacLeod is an international consultant in communications policy, with a special focus over the last decade on broadband infrastructure and applications. She began her career in communications policy working for the Australian government in Canberra. As executive director of the industry thinktank International Institute of Communications in London in the 1990s she worked on telecom policy reform and drove the institute's research agenda in media ownership and convergence policy. She also spent more than a decade working as an advisor on public policy and international regulatory issues for Australia's telecom operator Telstra. She is an active member of the OECD's Business and Industry advisory committee and regularly attends working party meetings of the information, computer and communications group. She is also secretary general of GTWN.

Janice Hughes, Founding Director, Redshift Strategy

Hughes is an experienced strategy consultant who has also worked across the mobile, fixed, radio spectrum, entertainment, music and retail sectors. Redshift Strategy, Hughes's latest endeavor, provides strategic advice, investment services, and insights into rapid technological change in the media and telecoms industries.

Prior to Redshift Hughes, who has a degree in economics from Cambridge University, was a lead partner in Booz Allen's European TMT practice, where she managed multimillion-pound assignments for major corporate clients across the world. She has also advised governments in Australia, New Zealand, Hong Kong, the UK and Continental Europe on regulatory issues.

TOP 25 GLOBAL MOBILE START-UPS

To identify the most promising global mobile start-ups Informilo asked some of the most active investors around the globe to nominate and evaluate companies outside their own portfolios. Some are well-known, others are below the radar but unlikely to stay that way for long. Below find our picks for the top 25.

SQUARE

(WWW.SQUAREUP.COM)
SAN FRANCISCO, CA, U.S.

What it does: Revolutionizing everyday transactions between buyers and sellers with free credit card reader for the iPhone, iPad, and Android devices.

Why it's hot: Over two million individuals and businesses can now accept credit and debit payments using Square. The company is processing over \$8 billion in payments on an annualized basis. Closed a Series D financing round in September 2012 (investors included Starbucks), and recently expanded into Canada. Square will face competition in Europe from the likes of PayPal, Payleven, SumUp, and iZettle, which is currently in seven European markets and has nearly \$50 million in investment from American Express and MasterCard.

MO DE

(WWW.MO-DE.CO)
NAIROBI, KENYA

What it does: Mobile micro credit.

Why it's hot: Mo De launched in May 2010; it has live operations in seven countries in Africa with another 10 countries on the way. The company's anchor product is Airtime Credit Service (ACS), which provides emergency airtime credit to prepaid mobile subscribers (typically paid back at the subscriber's next reload). Mo De has to date facilitated over 200 million transactions in 6 African countries. The service has helped operators like Airtel and MTN increase both subscriber revenues and talk time on their networks. Earlier this month the company won Global Entrepreneur of The Year at IBM's Smart Camp.

LOOKOUT SECURITY

(MYLOOKOUT.COM)
SAN FRANCISCO, CA, U.S.

What it does: Security software for mobile platforms.

Why it's hot: Security is a growing problem for users of mobile devices. Lookout delivers award-winning protection from malware, phishing, privacy violations, data loss, and loss of the phone itself. Lookout now has 30 million users across 400 mobile networks in 170 countries, making it a leader in mobile security.

AIRWATCH

(AIR-WATCH.COM)
ATLANTA, GA, U.S.

What it does: Enterprise-grade mobile management solutions.

Why it's hot: AirWatch is a global leader in mobile device security and management (MDM) systems, with 5,300 customers and nearly 1,000 global associates. The company has brought in no outside capital; it's predominately funded by operating cash flow. AirWatch claims it manages virtually every mobility project with more than 20,000 devices. Its impressive customer base includes the top four global Fortune companies, nine of the top 10 US retailers, six of the top 10 global airlines, and two of the top three global hotel groups.

EVERNOTE

(WWW.EVERNOTE.COM)
REDWOOD CITY, CA, U.S.

What it does: An app that's "helping the world remember everything."

Why it's hot: Evernote is a unified collection of apps that help people get things done. More than 50 million users and 2,000 businesses use Evernote to increase their workday productivity. In May 2012 the company announced a \$70 million Series D investment led by Meritech Capital and CBC Capital. The financing will support growth into new regions; expansion into new verticals; and strategic acquisitions (starting with Penultimate, the most popular digital handwriting application for iPad, acquired right after the funding round).

WIBBITZ

WWW.WIBBITZ.COM
TEL AVIV, ISRAEL

What it does: Text-to-video platform that can automatically turn any text-based article, post or feed into a short video.

Why it's hot: More than 20,000 sites have generated videos using Wibbitz, which also allows publishers to monetize their videos through pre-roll advertising. In June 2012 the company closed a \$2.3 million Series A round headed up by Horizons Ventures, Li Ka-shing's investment fund; previous investors Initial Capital and lool Ventures also participated. Wibbitz is ready to grow along with the rise in popularity of online videos.

SHAZAM

(WWW.SHAZAM.COM)
LONDON, UK

What it does: Discovery service for music, TV shows, and ads.

Why it's hot: Bar-goers have since 2002 been holding their handsets up to speakers so the Shazam app can identify the music they're listening to. Since then it has morphed into a powerful marketing tool: the user can now not only identify the music in, say, an ad, but also buy the goods featured in the ad, concert tickets, the track itself, etc. It boasts 275 million users in more than 200 countries and 33 languages, adds two million new users a week, and claims to have identified more than five billion songs. Now it is expanding onto second screens, making TV ads "Shazamable," allowing its large user base to buy not just music but all sorts of merchandise connected with programming.

INMOBI

(WWW.INMOBI.COM)
SINGAPORE

What it does: Mobile-first customer engagement platform.

Why it's hot: InMobi provides end-to-end solutions for mobile advertising, including award-winning rich media ad creation, distribution, tracking and optimization. Backed by SoftBank, Kleiner Perkins Caufield & Byers and Sherpalo Ventures, the company reaches 578 million consumers, in over 165 countries, through billions of mobile ad impressions monthly. In January InMobi acquired Overlay Media, experts in context aware computing. Crowned the Best Mobile Ad Network at November's Mobile Entertainment Awards in London.

CELTRA

(WWW.CELTRA.COM)
CAMBRIDGE, MA, U.S.

What it does: Rich media mobile advertising.

Why it's hot: The company's AdCreator platform has been widely adopted across the largest mobile publishers, ad networks and other ecosystem players. Eight of the top 10 media agencies also use the platform. In January Celtra announced a \$4 million strategic investment led by SoftBank Capital. The investment will be used to explore business opportunities in Japan and the Asia Pacific region, and to expand the company's engineering presence in the U.S. Celtra became profitable in Q3 2012; revenue growth for the year exceeded 300%. Named one of the Most Innovative Tech Companies of the Year by the American Business Awards and won MassTLC's Innovative Mobile Technology of the Year Award.

MOPUB

(WWW.MOPUB.COM)
SAN FRANCISCO, CA, U.S.

What it does: Mobile monetization platform for Android, iOS and mobile web.

Why it's hot: MoPub is a one-stop ad serving platform designed for mobile application publishers to manage their ad inventory on iOS and Android. MoPub enables app publishers



to optimize multiple sources of advertising in a single product – including direct ads, house ads, ad network, and real-time bidding through MoPub Marketplace. The company was founded by former AdMob and Google team members and is backed by Accel Partners, Harrison Metal Capital, and Jafco Ventures. Claims to be the world's largest mobile ad exchange. MoPub's marketplace gives advertisers access to over 300 million unique users and served 1.5 billion ads a day.

WHATSAPP

(WHATSAPP.COM)
SANTA CLARA, CA, U.S.

What it does: Cross-platform, free mobile messaging app.

Why it's hot: This app, which bypasses SMS charges, has the potential to be disruptive both to the cellular networks and the hardware vendors it challenges by taking the concept across all platforms. WhatsApp Messenger is now available for iPhone, BlackBerry, Windows Phone, Android and Nokia. Started by two ex-Yahoos in 2009, WhatsApp now has an estimated 250 million users, and handles 10 billion messages a day. The app is paid-for, to keep it ad-free, "and we hope to keep it that way forever," the website says.

SNAPCHAT

(WWW.SNAPCHAT.COM)
VENICE BEACH, CA, U.S.

What it does: Now you see it, now you don't photo-sharing service.

Why it's hot: Snapchat claims to be the fastest way to share a moment on iPhone and Android: up to 10x faster than MMS. The user controls how long friends can view messages before they disappear. Growing fast: more than 60 million messages are sent each day by millions of users, up from 50 million messages in December. Recently raised \$13.5 million in venture financing, led by Benchmark Capital. Snapchat taps into fears of social media mistakes that could live forever.



WRAPP

(WWW.WRAPP.COM)
STOCKHOLM, SWEDEN

What it does: Social gifting service that allows friends to contribute to digital gift cards via Facebook and mobile apps.

Why it's hot: It brings together retail and social: connecting via Facebook means retailers get demographics and other analytics, allowing targeted advertising while at the same time tapping into the feel-good vibe of gift-giving. It aims to have its offering embedded with e-wallets and is already trialing a service with PayPal. The company's team includes seasoned entrepreneurs and its board of directors includes Skype co-founder Niklas Zennström and Linked-In co-founder Reid Hoffman.

EZETOP

(WWW.EZETOP.COM)
DUBLIN, IRELAND

What it does: Enables people living or working abroad to instantly recharge mobile phones of friends and family back home.

Why it's hot: ezetop is used by millions of people each month, and delivers revenue to more than 213 mobile operators worldwide. The company claims that to ensure quality it only works directly with mobile operators. Services are available from more than 450,000 retail stores in 20 countries; directly from mobile operators; or through ezetop's website, which it calls the largest international online recharge site. It also offers a white-label solution for mobile operators.

HAILO

(WWW.HAILOCAB.COM)
LONDON, UK

What it does: Links licensed cab drivers with would-be passengers via smartphone apps.

Why it's hot: An app that links licensed cab drivers – starting in London, but now also offering the service in New York, Dublin, Boston, Toronto and Chicago – with passengers via iOS and Android, is set to become a must-have for denizens of those cities. In late December Hailo reportedly raised an additional \$30 million in funding,

on top of earlier investment of \$17 million; the latest round values the company at \$140 million. The business is solidly backed for further development as it moves to take on Uber in the U.S.

WAZE

(WWW.WAZE.COM)
PALO ALTO, CA, U.S.

What it does: Free navigation and traffic service that creates “local driving communities that work together to improve the quality of everyone's daily driving.”

Why it's hot: Has a community of 30 million global “traffic resisters” who keep users informed about road conditions in real time. Last year Waze integrated Foursquare and Yelp points of interest into the service. Initially funded by the Blue Run Ventures, Magma Venture Partners and Vertex Venture Capital, the company recently received additional investment from Kleiner Perkins and Li Ka-shing's Horizon Ventures. Consistently the number one navigation app in the Android Marketplace.

APPGRATIS

(WWW.APPGRATIS.COM)
PARIS, FRANCE

What it does: App discovery network.
Why it's hot: AppGratis delivers more than 100 million non-incentivized app installs for app developers. Profitable from day one, the company needed no external funding to grow to 10 million users in over 30 countries. However, in January is closed a \$13.5 million Series A round led by Iris Capital and including the Orange Publicis Fund. Although it currently adds 100,000 new users per day globally, it says it can go further with funding. AppGratis claims that at peak, featured placement in its app can drive over 500,000 downloads for a title in a single day.

APPSFIRE

(APPSFIRE.COM)
PARIS, FRANCE

What it does: App discovery service for Android and iOS with social elements.

Why it's hot: Appsfire claims it has served 1.5 billion app recommendations to its users since its launch in 2010. More than 1.5 million people use the app each day, and its users have been responsible for more than 9 million app downloads. In 2012 the company acquired Appstastics, a tool to track the performance of iOS and Mac apps in the App Store rankings.

WANDOUJIA

(WWW.WANDOUJIA.COM)
BEIJING, CHINA

What it does: One of the top Chinese search engines for apps.

Why it's hot: Founded in early 2010, Wandoujia now has more than 100 million app installations in China. The company's search engine for apps has partnered with more than 30 app stores, and has indexed more than 400,000 apps on the Android platform. Each day, its users download more than 17 million apps from its platform. Wandoujia's cloud sync service, which launched last year to help users sync photos, messages and contacts, has more than 6 million users. The English-language version is at SnapPea.com.

SPOTIFY

(WWW.SPOTIFY.COM)
STOCKHOLM, SWEDEN

What it does: Streaming music service with close social media interactivity and mobile apps.

Why it's hot: Allows users to stream music from the big music players and smaller independent labels using either a free, ad-supported service or a premium ad-free service. Now requires a Facebook account, so has enormous potential reach; recently declared itself a “platform,” encouraging developers to write apps for it. Users can share playlists, driving social crowdsourcing for events big and small; premium users can also access and share music on most mobile devices. Currently available in 17 countries and has more than 20 million active users, and over 5 million paying subscribers.

DEEZER

(WWW.DEEZER.COM)
PARIS, FRANCE

What it does: Provides unlimited music on demand to computers and mobile devices.

Why it's hot: Since its creation in 2007, Deezer has negotiated agreements with 2,000 music labels and rights management companies around the world – including the four major labels – and launched in every continent. In December 2012 Deezer announced the launch of free ad-supported music service in more than 160 countries, giving the company access to a minimum potential audience of 600 million people (it serves more than 26 million music fans worldwide today).

EDJING

(WWW.EDJINGDJTURNABLE.COM)
PARIS, FRANCE

What it does: Social DJ app for iOS and Android.
Why it's hot: Claims to be the first music/video platform on the Internet that allows listening, sharing and mixing more than 20 million video

clips – for free, with no limits, and legally. Just a few weeks after its release, the company's edjing dj turntable app was downloaded 500,000 times; it's been ranked among the top apps overall in the U.S., France, and Italy.

ROVIO

(WWW.ROVIO.COM)
ESPOO, FINLAND

What it does: Developer of casual games across multiple platforms.

Why it's hot: Angry Birds, Rovio's breakthrough game, hasn't just made it on to multiple platforms – it's now part of the collective consciousness. Launched in 2009, the game was downloaded more than 1 billion times in 2012 (30 million during Christmas week alone), with more than a quarter billion monthly active users in December. Angry Birds Space was 2012's most downloaded paid iOS app. The games have spawned real-world stores to sell fluffy versions of its grumpy avians and pigs as well as apparel.

ZEPTOLAB

(WWW.ZEPTOLAB.COM)
MOSCOW, RUSSIA

What it does: Mobile game developer
Why it's hot: Zeptolab's Cut The Rope has racked up 300 million downloads across all platforms. It was the first iOS game to win a BAFTA Award, as well as an Apple Design Award. ZeptoLab, which has raised no outside funding, has extended the franchise into toys, board games, clothing and online entertainment, with more brand extensions planned in the coming year. In October ZeptoLab launched a Web-based animation series called “Om Nom Stories,” which is attracting more than 100,000 views per week.

SUPERCELL

(WWW.SUPERCELL.NET)
HELSINKI, FINLAND

What it does: Real-time social gaming developer.
Why it's hot: Since pivoting to become a “tablet-first” publisher the company has released two games: Hay Market and Clash of Clans. The first is a global hit and is now the top-grossing iPad game in 77 countries; the second is also a blockbuster, and is the top-grossing iPad game in 32 countries. The company is now generating revenues of \$500,000 a day.

OUTFIT7

(WWW.OUTFIT7.COM)
LIMASSOL, CYPRUS

What it does: Mobile app offering virtual pets/friends.

Why it's hot: Outfit7 offers a series of Talking Friends apps for iOS and Android; the “friends” interact with users. The apps have had more than 600 million downloads in less than three years, across 120 countries. User engagement is deep; there have been more than 25 million views of user-generated Talking Friends videos on YouTube each month. Outfit7 is in discussions with media and entertainment companies about possible partnerships; definitely one to watch.

Advertising 2.Go: Is This Mobile Advertising's Moment?

BY JAMES SILVER



Orange's Quick Tap service uses NFC to enable users to pay for goods and services with their mobile phones

It was at the April 2010 launch of iAd, Apple's mobile advertising platform, that Steve Jobs, prowling the stage in his customary black turtleneck, uttered the words: "We think most [of this] mobile advertising really sucks." As he himself conceded at the time, it wasn't the most elegant of phrases. But his words certainly struck a chord: three years ago, the platform was considered niche

at best. It was crude, interruptive and, above all, at the time Jobs was speaking, smartphone penetration in the U.S. mobile market was below 20%. Unsurprisingly advertisers stayed away in droves.

The intervening years have done little to prove Jobs wrong. Small wonder then that the mantra-like claims that mobile advertising was finally poised to go mainstream became less credible every time

they were made. "Over the past 10 years we've been saying now is the moment for the mobile advertising market to take off," says Ludovic Levy, director of mobile advertising and data monetization at Orange. "I have to confess for 10 years now, all the industry — including advertisers, operators and agencies — have not truly understood how advertising works on this specific device."

Mobile currently still represents a tiny proportion of total advertising spend. U.S. advertisers, for example, spent \$180 billion last year — and only 2% of that was on mobile. But it looks as though the hype around mobile advertising might finally become reality. Tech consultancy Gartner is forecasting that the global market for mobile advertising will jump from \$1.8 billion in 2011 to \$13.5 billion in 2015. The eventual number may be much bigger: research from eMarketer forecasts that spending on mobile advertising (which in this instance includes display, search and messaging-based ads served to mobiles and tablets) in the U.S. alone is set to double from \$7.19 billion in 2013 to \$15.82 billion in 2015.

"The value that can be generated from mobile advertising has now really been proven across a number of industries," says Tim Dunn, director of strategy at Isobar Mobile, a London-based advertising agency which specializes in digital creative work. "Predictions of massive growth through 2015 absolutely make sense to me, as the industry starts to catch up with the consumer trend [of smartphone adoption]."

POSITIVE SIGNS

A number of significant factors underpin the optimistic forecasts. In Q3 of last year, Strategy Analytics reported that smartphone handset penetration shattered the one billion global handsets barrier. Meanwhile, the shift from PCs to tablets and mobile devices is now widely viewed as a given. Facebook's embrace of mobile advertising is another major reason for more optimistic forecasts. The



Orange's social TV app TVcheck, which allows users to check in with TV shows and share content with friends.

social giant had no mobile ad offerings at the beginning of 2012 but saw revenues from this sector skyrocket as soon as it introduced them. It reported that its overall advertising revenues rose 41% to \$1.33 billion year-on-year in the final quarter of 2012, with mobile reaching 23% of the total. In the previous quarter mobile was just 14% of the total ad revenues. The increase in mobile ad revenue is so encouraging that it's one of the key reasons why Facebook founder Mark Zuckerberg has taken to describing the giant social network as "a mobile company."

Google also posted better-than-expected mobile ad growth in Q3 of 2012. Fueled primarily by direct-response advertisers, Google now controls a 56.6% share of the U.S. mobile advertising market, according to eMarketer estimates. Google announced on February 6th that it was upgrading AdWords to take account of "today's multi-device world," which has been interpreted as a move to try to further boost mobile revenues.

That goal is important because search on desktops is slowing and Google does not yet make equivalent profits on mobile devices. For starters, advertisers pay far less for mobile ads as it is a less proven medium.

Today, most of Google's mobile ad revenues come from search. And, when consumers use Google for search they often do so via their iPhones and Google has

to pony up a hefty share of its revenues from these searches to Apple.

Still, search is a powerful driver for sales, particularly when combined with location-based data, which is why Isobar Mobile's Dunn says he expects Google and Facebook, in particular, to "ace the class." "Mobile is closer to the point of purchase," he says. "The follow-up time [after searching] on mobile is, on average, a day, instead of a week on desktop and PC and, crucially, a large proportion of mobile search has local intent." He also predicts the price advertisers pay

Facebook reported that its overall advertising revenues rose 41% to \$1.33 billion year-on-year in the final quarter of 2012, with mobile reaching 23% of the total. In the previous quarter mobile was just 14% of total ad revenues. The jump comes as Facebook founder Mark Zuckerberg has taken to describing the giant social network as "a mobile company."

for mobile search will soon catch up with desktop/PC search.

The arrival of 4G networks could also prove a game changer: as mobile networks evolve to offer customers far greater browsing speeds, they enable richer interaction between users and advertisers. This, in turn, has helped solve another ongoing friction point: the lingering question mark over what distinguishes mobile as an advertising medium from other platforms, most notably online.

Nigel Gilbert, director of sales EMEA at App Nexus — a customizable advertising technology platform, which recently closed a Series D round of \$75 million led by Technology Crossover Ventures (TCV) — argues that the industry has suffered from what he describes as a lack of relevance. "Historically mobile advertising has been cash-point [ATM] finders, wallpaper, games and so on, which wasn't compelling," he says. Advertisers have had to improve their understanding of how to engage customers through mobile and design offers that are relevant to the platform. "We're seeing more mobile-optimized sites and therefore more budget on the [advertising] 'buy side'."

Improving infrastructure has also led to the creation of companies whose raison d'être is helping content developers monetize through selling ads, says Sephi Sha-

pira, CEO and founder MassiveImpact, a performance-based mobile advertising platform, which reaches more than one billion mobile Internet users. "If you go back to 2008, if I was a content developer and had a free mobile website I would have had to go and chase the advertisers one at a time to try to persuade them to advertise on my website," he says. "Today, I just go to one out of 100 ad networks that sells all of my ad space in an effortless manner. That whole ecosystem didn't exist four years ago — today it's all in place."

Yet despite these innovations — and supporting data — doubts about the platform's role in the advertising landscape persist. Mark Read, strategy director and CEO of global communications giant WPP Digital, remains unconvinced that mobile is an advertising medium — in the traditional sense — at all. "Mobile is a very important marketing channel," he says. "It's going to be critically important for all of our clients in terms of building relationships with their consumers. But as an advertising or brand-building channel, it is competing with other media which may be better at achieving the same objectives. It's not, for example, going to take over from TV as an advertising medium. Banner ads don't necessarily work on mobile because of the size of the device. Lots of people used to say that we'd judge the success of mobile as when there's lots of ad spend on mobile devices — but that may not be the right metric."

A better metric, adds Read, one of digital advertising's most influential figures, is what people actually use their smartphones for — and that increasingly includes e-commerce. The platform's true value may well lie in location-based services, which will see customers receive personalized offers and geo-located ads and promotions. "We're only really at the beginning of the use and development of location-based services," he says. "The unique thing a smartphone has is [a user's] location and the fact that it's nearly always on and within reach."

He cites an example of a campaign WPP carried out for BMW in Germany. BMW drivers received special on-the-day offers — depending on whether snowfall was predicted for the following day in their area of the country — to buy snow tires for a 20% discount. "That was interesting in a number of respects," he says. "It was personalized — it only went to BMW owners — location-based, because if you lived in Munich you would get the offer at a different time to a BMW driver in Bonn, and it was timely/event based. I'd say that was something you could do on a mobile better than on other devices."

THE MEDIA MIX

Orange, like other major mobile operators, is also encouraging brands to use mobile handsets to reach their audience in new ways. Evidence suggests that growing numbers of people are browsing the Web or using social media while watching TV. (See Informi-

lo's Mobile World Congress 2012 cover story for more on this trend). Orange has developed the tracking and retargeting technology to follow its customers as they shift between screens. One way the operator is doing this is via a social TV app called TVcheck, which allows users to check in with TV shows and share content with friends. In return, they can then win free minutes, SMS and coupons. "This is a way for a brand to be part of users' conversations while they are socializing," Levy explains.

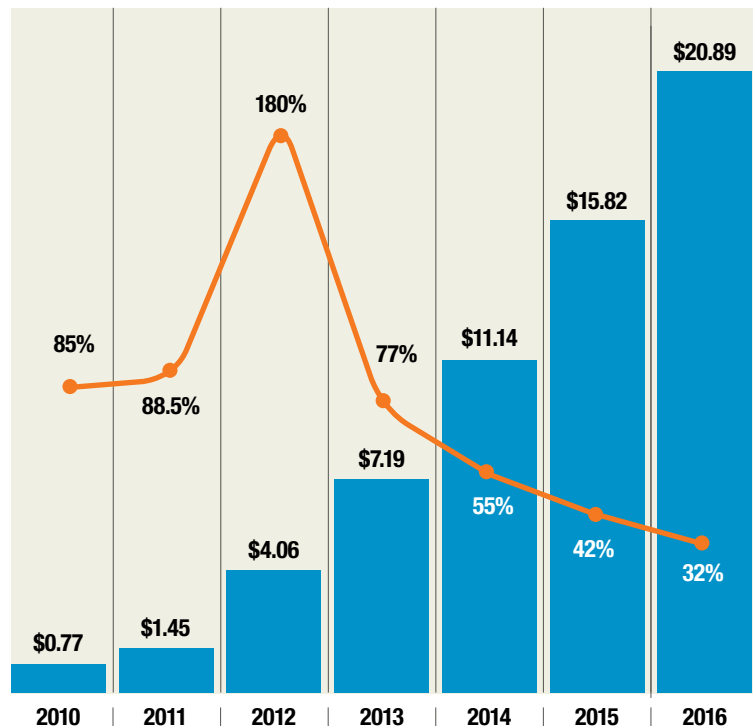
It also enhances measurability. "By measuring all the interactions, for instance on social networks, between users during TV spots or programs sponsored by a brand, marketers can get a clearer picture of their ROI and the role mobile plays in the overall media mix," says Orange's Levy. "The more we will be able to integrate the mobile into TV campaigns or other media campaigns, the faster mobile advertising as a whole will take off," he says.

Mobile Advertising Revenue by Region, Worldwide, 2012-2016 (Millions of Dollars)

COUNTRY	2012	2013	2014	2016
NORTH AMERICA	3,181.5	3,825.7	4,694.9	8,866.2
WESTERN EUROPE	1,600.5	1,941.4	2,367.8	4,445.4
ASIA/PACIFIC AND JAPAN	4,333.0	4,864.9	5,506.7	9,480.2
REST OF THE WORLD	644.1	788.0	960.6	1,768.3
TOTAL	9,759.1	11,420.0	13,530.0	24,560.1

SOURCE: GARTNER GROUP

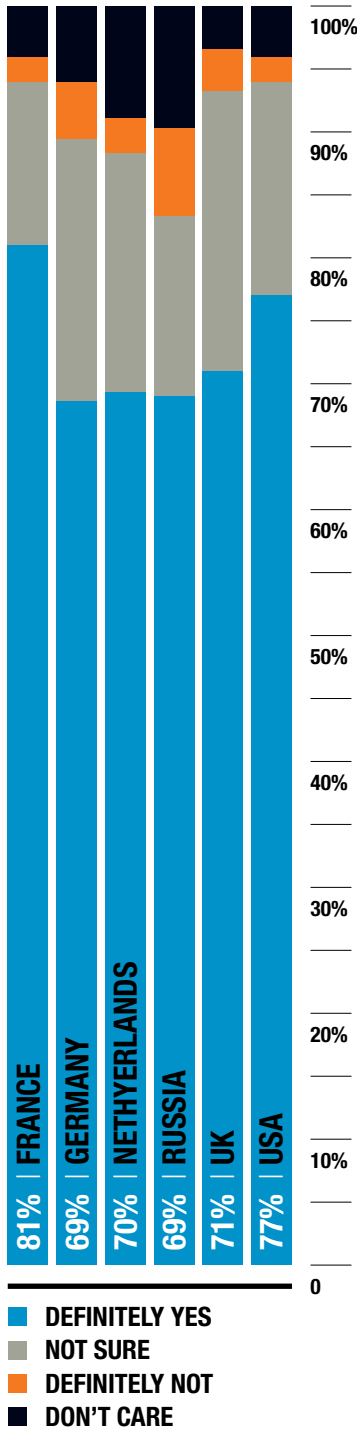
US Mobile Ad Spending, 2012-2016 (Billions and % change)



Note: Includes display (banners and other, rich media and video), search and messaging-based advertising; ad spending on tablets is included.

Source: eMarketer, December 2012

% INTERNET USERS WHO WOULD SELECT 'DO-NOT-TRACK' IF AVAILABLE WHEN USING A SEARCH ENGINE



Source: Ovum

Privacy Is Dead: Now What?

Companies and NGOs Want To Unlock the Power of Personal Data But Safeguards Will Be Key

BY JENNIFER L. SCHENKER

One mobile app getting a lot of buzz is Snapchat, a social media message service that is transferring some 60 million messages and videos per day. Part of the platform's draw is that the user determines how long friends can view messages before they disappear.

The app's popularity underscores people's desire to have more control over their personal data. Shielding compromising pictures or drunk texting from the prying eyes of a future employer, parent or stranger is just one concern.

With more than six billion people connected to mobile devices that can capture and track location patterns, an increasing variety of data can now be linked to individuals. Trouble is, most people don't have a clue who is looking at their data and what is being done with it.

Alarm bells are ringing, and with good reason. WhatsApp, a popular cross-platform mobile messaging app, came under fire in January from Canadian and Dutch governments for forcing those who download the app to upload their entire address book. In a statement, the office of the Canadian privacy commissioner said it had "reasonable grounds" to believe the California-based developer was "collecting, using, disclosing and retaining personal information" of those who had never used the app, but may have given their phone numbers to a friend or contact who does.

And, in early February the U.S. Federal Trade Commission announced that it had slapped Path, a social network that allows users to keep journals of special life moments, with an \$800,000 fine for automatically – and improperly – collecting personal information from its customers' mobile address books, including friends' first and last names, addresses, phone numbers, e-mail addresses, Facebook and Twitter user names, and dates of birth. The data collection occurred automatically when version 2.0 of the app was first launched and each time a user signed back into his or her account.

Like the Facebook, Google and MySpace settlements, the Path-FTC settlement also requires the company to establish a comprehensive privacy program and to obtain independent privacy assessment every other year for the next 20 years.

To head off such abuses in the future

the FTC has just released new guidance on implementing security for mobile applications. The GSMA, the mobile industry trade association, in February introduced an Accountability Framework designed to add teeth to guidelines it introduced in 2012. A number of European mobile operators, such as Vodafone, Telefonica, France Telecom Orange and Deutsche Telekom, have already started implementing the guidelines.

In a recent survey of the Internet populations across 11 countries 68% said they would select a "do-not-track" feature if it was easily available, according to consultancy Ovum's new report "Personal Data Futures: The Disrupted Ecosystems." This hardening of consumer attitudes, coupled with tightening regulation, could diminish the supply of personal data, undermining not just the Internet economy but big data analytics that could be used to help solve some of the world's most pressing problems.

But these steps may not be enough to restore user confidence: in a recent survey of the Internet populations across 11 countries 68% said they would select a "do-not-track" feature if it was easily available, according to consultancy Ovum's new report "Personal Data Futures: The Disrupted Ecosystems." This hardening of consumer attitudes, coupled with tightening regulation, could diminish the supply of personal data, undermining not just the Internet economy but big data analytics that could be used to help solve some of the world's most pressing problems.



Haitian Ministry of Public Health body collectors place the body of a cholera victim into a mass grave during the 2010 outbreak. In the future leveraging big data about the movements of populations during disease outbreaks could help target relief efforts and potentially save lives.

Anonymized data collected by mobile operators could be used to identify poverty pockets in urban areas or pinpoint where people are moving en masse during disease outbreaks in order to better target relief efforts, says Anoush Rima Tateviossian, head of Strategic Communications & Partnerships for Global Pulse, a program run from the executive Office of the Secretary-General United Nations, that is exploring how new, digital data sources and real-time analytics technologies can help policymakers better understand issues like hunger and poverty and manage disasters in real time.

Making sure big data can be used for the greater good – as well as by business – is the focus of work being done by the World Economic Forum (WEF). Based upon a year-long global dialogue among public sector, private sector, and civil society experts, there is growing consensus that the notions of deleting data and limiting its collection are problematic in the era of Big Data. If the likes of Google can't collect personal information for targeted advertising it would have to start charging for services now offered for free, such as Google Search and Gmail. But the stakes go well beyond keeping the

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Internet economy afloat: limits on the use of personal data could curtail progress in solving some of the world's most challenging problems because big data doesn't just hold the answers to what products and services people consume; it can also tell us what people create, and how they cope with global stresses like unemployment and natural disasters.

Additional points of consensus from the WEF's global dialogue — which are expected to be outlined in a report scheduled to be released in the first quarter of 2013 — include the need for data to flow and combine with other bits of data but in a manner which accounts for the potential risks and privacy intrusions this flow could create. Encouraging policy frameworks to shift from controlling data collection to focusing on appropriate and trusted data usage was widely supported as data itself does not create value or cause problems; its use does.

The topic is on the agenda at this year's Mobile World Congress, which is taking place February 25-28. Robert Kirkpatrick, director of the U.N. Global Pulse, is scheduled to speak twice on February 25th: at a ministerial track session entitled "Balancing privacy: Providing social good and economic opportunities — the mobile perspective" and at a GSMA Disaster Response Program seminar entitled "Mobile: A Lifeline in Disasters."

Kirkpatrick will also participate in a private workshop on the topic of data-driven development during MWC organized by the WEF.

"The challenge is to move beyond the privacy issue so that we can leverage the data to address socioeconomic problems such as financial inclusion, food security and disaster response and some of the other big global challenges and build it out in a way that is commercially sustainable," says William Hoffman, head of the World Economic Forum's ICT Agenda.

MOVING FROM DATA FRACKING TO DATA FRIENDING

The WEF has been working on a "re-thinking personal data" initiative for the past two years. Steering board members include Augie Fabela, chairman and co-founder of VimpelCom; Robert Quinn, AT&T senior vice-president, Federal Regulatory and Chief Privacy Officer; Craig Mundie, Chief Research and Strategy Officer, Microsoft; Ellen Richey, Visa's Chief Enterprise Risk Officer; and George Halvorson, Chairman and Chief Executive Officer, Kaiser Permanente.

It is a difficult task. Laws governing data privacy were made 30 years ago and are no longer relevant or effective.

Reliance on "notice and consent," in which companies write obtuse policies and get consumers to click without reading or understanding them, is not working; studies show that privacy policies are hard to read, read infrequently and do not support rational decision making.

For example, a 2008 study by Aleecia M. McDonald and Lorrie Faith Cranor, which was published in a *Journal of Law and Policy*, found that privacy policies

range in length from just 144 words up to 7,669 words (the median is around 2,500 words). At a standard reading pace of 250 words per minute, most privacy policies take eight to 10 minutes to read. The study concludes that it would normally take a person about 244 hours per year to read every new privacy policy she encountered... and 154 hours just to skim them. The authors estimated that if all American Internet users were to annually read online privacy policies word-for-word each time they visited a new site, the U.S. would lose the value of about \$781 billion from the opportunity cost of the time to ready privacy policies.

Some companies are working on ways to speed up and standardize legal language. Privacyscore, for example, analyzes the privacy policies of companies along four clear criteria and gives each website a color-coded rating and score. Mozilla has proposed a symbols-based approach to the presentation of legal terms; icons signal, for example, how long data is retained, whether data is used by third parties, if and how data is shared with advertisers, and whether law enforcement can access the data.

Start-ups are cropping up to help alert consumers and shield them from unwanted data snooping. (See the box to find out more about what start-ups are doing in this area.)

But some argue that the real remedy lies in economics, rather than simplifying standard legalese or technology. Personal data is worth money, so soon privacy marketplaces are likely to evolve, where website visitors choose to accept or reject offers for payments or rewards in exchange for loss of privacy. Respect Network, a California-based start-up, if offering to broker such exchanges.

"A new ecosystem is emerging," says Mark Little, an Ovum analyst who worked on the Personal Data Futures report. "Instead of the Internet company writing a one-sided legal standard-form contract, the consumer will write his own. You'll have a vault, a company knocks on your door, you open your door and present them with your policy," says Little.

Little describes the shift as a move from "data fracking" to "data friending." If "data friending" works and the majority of consumers are confident that the trade is fair and secure and that both they and society as a whole will benefit from sharing their information everybody will win, says Ovum's Little. The privacy industry can develop lucrative businesses, the Internet economy will continue to flourish, and agencies like the U.N. will obtain the tools to better tackle socioeconomic issues.

There is a big incentive for companies and governments to get this right. Analytics have become the new engine of economic and social value creation. And the insights derived from linking previously disparate bits of data have become essential for innovation.

Start-ups that help consumers keep their data private

PERSONAL, INC.
WWW.PERSONAL.COM
WASHINGTON, D.C., U.S.

A web and mobile data vault for individuals to securely store, share and reuse passwords and their most important information. Built on a privacy- and security-by-design platform, Personal helps individuals to leverage their data so they can realize the most value from it. It also provides peace of mind that the data in their vault remains legally theirs and that it can't be shared without their permission.

ABINE
WWW.ABINE.COM
BOSTON, MA, U.S.

Committed to giving users a more private web experience. Abine offers several privacy services, including online tracker-blocking tool called DoNotTrackMe, and DeleteMe, which removes subscribers' personal information from public databases. The company's technology has led to partnerships with the National Network to End Domestic Violence, the California Judges Association, and other privacy-conscious organizations.

ALLOW
WWW.I-ALLOW.COM
LONDON, UK

A UK-based security service that puts users in control of their personal information. Allow claims it can: remove users' information from the top marketing databases; reduce spam marketing by up to 75%; stop advertisers from watching users online; and protect details against cybercriminals. It also offers insurance against identity theft.

EVIDON
WWW.EVIDON.COM
NEW YORK, NY, U.S.

Helps users understand how companies collect and use their data — often to target ads — and gives users the ability to opt out of targeting. Evidon also provides privacy controls for more than \$1 billion of display media annually, empowering more than 150 million people a day to control how their information is used online. For businesses, Evidon's browser tool, Ghostery, reports on data collection across 26 million websites and informs a company's business control solutions.

RESPECT NETWORK
WWW.RESPECTNETWORK.COM
SAN FRANCISCO, CA, U.S.

Calls itself the world's first personal cloud network. The Respect Network hosts user data free of charge. The personal-cloud network runs on the Respect Trust Framework, which mandates that a user's personal information and data cannot be shared without his or her permission. Businesses that want access to the consumers' data pay the Respect Network, which in turn gives the consumer a reward for authorizing the sharing of specified data.

SNAPCHAT
WWW.SNAPCHAT.COM
VENICE BEACH, CA, U.S.

Snapchat taps into fears of social media mistakes that could live forever. Users can share a moment with friends on iPhone and Android, and set the length of time the images are visible before they disappear.

Mobilizing Women

The industry is now focusing on closing the mobile gender gap

BY ERIC SYLVERS

Mobile phone ownership has skyrocketed around the globe. But a woman is still 21% less likely to own a mobile phone than a man. The figure is even higher if she lives in Africa, the Middle East, or South Asia.

Closing the gender gap on mobile phones would bring improved access to education and health as well as business and employment opportunities to hundreds of millions of women, improving not just their lives but those of their families, according to a report co-authored by the Cherie Blair Foundation, one of the first organizations to recognize the transformative potential of getting more mobile phones into the hands of women.

There is a strong economic incentive to bringing about that change. "Mobile operators aiming to be market leaders in five years time must excel at bringing on new female subscribers," says the report, which was co-authored by mobile phone industry lobby the GSMA, the organizer of the Mobile World Congress taking place in Barcelona February 25-28.

The report, released in 2010, galvanized other non-profits, the mobile phone industry, and governments by putting a number on what many had already identified as both a problem and an opportunity.

Closing the mobile gender gap by adding 300 million women subscribers will add \$13 billion to average revenue per user for mobile operators, says the report, which took data from other sources but also included its own field research. It projected that the incremental revenue opportunity for operators ranges from \$740 million in Latin America to \$4 billion in East Asia. The greatest incremental gains for women can be made in South Asia, the Middle East and Africa, the three regions where the gender gap is the biggest. The long-term opportunity is potentially bigger. Over the next five years, two out of every three potential new subscribers will be women, says the report. By connecting all of these women,

mobile operators have the potential to add 600 million subscribers and boost their collective annual revenues by \$29 billion.

Over the next five years, two out of every three potential new subscribers will be women, says a report published by the GSMA's mWomen program and the Cherie Blair Foundation. By connecting all of these women, mobile operators have the potential to add 600 million subscribers and boost their collective annual revenues by \$29 billion

A key to unlocking the potential will be the introduction of new mobile phone applications, which have already turned handheld devices into tools used in everything from health care to education. "Mobile applications bridge the gaps in supplying information where traditional infrastructure is lacking," says mobile industry veteran Lauren Cook, Principal TMT Advisor for Global Telecoms, Media, & Technology at the International Finance Corporation, a part of the World Bank Group. "Women can now gain access to information, products and services, which is often life saving in the developing world," says Cook, a scheduled speaker at this year's Mobile World Congress. Applications centered on e-health, e-education and e-commerce allow women to become educated and to make informed decisions for themselves and their families."



The GSMA mWomen Program – a partnership founded in 2010 by the GSMA, the Australian Agency for International Development, the United States Agency for International Development, and Visa – has set the goal of bringing mobile connectivity and services to 150 million women in emerging markets by 2014, thus reducing the mobile gender gap by half.

To achieve that goal, mWomen has offered a list of recommendations. These include: reducing the cost of mobile ownership by abolishing "discriminatory" taxes; removing cultural barriers that stigmatize female use of mobile phones in some cultures (in part by using well-respected people as champions for female ownership of mobile phones); collaborating with local organizations to increase technical literacy of the poorest women; and encouraging the deployment of value-added mobile services that benefit women in particular.

EXPANDING ACCESS

Handset providers, operators, and app developers around the world are rushing to

serve this vastly underserved market with special devices, innovative calling plans and apps to support education, health, entrepreneurship and micro finance.

Both big and small companies have a role to play in expanding access for women by producing relevant content and services, says Ann Mei Chang, Senior Advisor for Women and Technology in the Secretary's Office of Global Women's Issues at the U.S. Department of State.

"Small companies in particular, which are close on the ground, can be extremely effective at building locally-relevant content and services as they can better tailor to the local environment," says Chang, who is also scheduled to speak at this year's Mobile World Congress. "On the other hand, big companies have the reach and resources to make broader impacts. Facebook, for example, is one of the biggest drivers for adoption of the Internet in developing countries."

While the GSMA/Cherie Blair Foundation report brought attention to the mobile gender gap, the so-called digital divide has long garnered notice and a flurry of activities aim to bring digital

THE NETWORKED ECONOMY: HOW TECHNOLOGY, INNOVATION AND VENTURE CAPITAL ARE TRANSFORMING THE FUTURE OF MOBILE



Owning a mobile phone can be a lifeline for women in emerging markets, helping them to earn a livelihood, access crucial education and medical information and ensure their safety.



technology and access to the Internet to underserved parts of the world. Many of the lessons learned in dealing with digital technology can be transferred to the mobile sector, industry insiders say.

Information and communications technology (ICT) can lower transaction costs, something that will benefit women particularly because of their more severe time and mobility constraints, according to a World Bank report that laid out a strategy through 2015. Countries should use ICT to address the gender gap in health, education and other sectors, the report said.

In addition to mWomen, Chang cites other initiatives that are helping to bridge the gap by bringing useful services to women in developing countries; these include Mobile Alliance for Maternal Action (MAMA), which delivers vital health information to pregnant women, and Safaricom's M-PESA, which though not specifically targeted at women, has helped many women access financial services for the first time.

For the past five years Qualcomm, Grameen Foundation and Ruma, an Indonesian company, have partnered to create AppLab, which helps poor Indonesian entrepreneurs, about 85% of whom are women, provide mobile phone-based services such as airtime and a job-finding service.

By 2015 there will be 788 million people who access the Internet only through mobile phones, according to a white paper commissioned by Cisco. But industry experts say the full benefits of mobile technology are likely to be realized in conjunction with fixed-line technologies. While mobile coverage is more likely to reach remote areas and is cheaper to use, computers can offer more advanced services.

A study funded by Intel and released in January found that women who access the Internet using more than one platform report more benefits than those who use only computers or mobile phones. Women who access the Internet using both computers and cell phones are more likely to say that online access brought them benefits such as additional income and applying for jobs, according to the study, which included field interviews in Mexico, Uganda, India and Egypt.

"Putting women and technology together has the potential to be one of the highest-leverage opportunities to address the world's development challenges," Chang wrote in a blog post published in January. "Along with access to markets, finance, and education, increasing access to ICT by removing gender-related barriers is necessary to fully realize the potential economic contribution of women, and by extension entire communities."

Mobile lies at the center of that equation, something governments, the private sector, and non-profits are embracing as both a challenge and an opportunity.



Mobile Security Poses Threats and Opportunities

Now that two-thirds of adults access the Internet via mobile phones new forms of cybercrime are emerging

BY ERIC SYLVERS

With some two-thirds of adults using the Internet to access personal and business information on the go, cyber criminals are finding mobile devices an increasingly attractive target.

As more people store things of value – whether it be passwords, corporate secrets, or money – on their mobile devices, the darker side of cyberspace is finding its way onto phones. The viruses, trojan horses, botnets and phishing that plague the PC world are now becoming commonplace on mobile devices. The problem is aggravated by the fact that mobile networks and Wi-Fi are more vulnerable than fixed-line networks to hacking. And wireless devices are by definition mobile, making them susceptible to loss and theft. (A 2012 Norton Cybercrime report found that 35% of people have had a mobile device lost or stolen.)

Today only one in 20 smartphones has any kind of security software, but experts predict it won't be long before those who use their Android phone, iPhone, tablet or other mobile device without some anti-virus protection will be the exception rather than the rule.

Such threats open opportunities for both existing and new businesses. Big names in computer anti-virus software such as McAfee, Symantec's Norton AntiVirus and Avast are targeting the sector. Symantec, for example, released a new version of Norton Mobile Security in November which scans the phone for malware, heads off potentially dangerous apps, can use GPS to locate a lost phone, and has an alarm function that screeches when activated. The various services also generally back up data on the phone including contact lists, text messages and media including audio and video files. Meanwhile, start-ups such as Lookout, Prey and Zenprise (see box), which focus exclusively on securing mobile devices, are attracting tens of millions of dollars in investment from top-tier Silicon Valley and European venture capital firms. Expect these companies to be flogging their

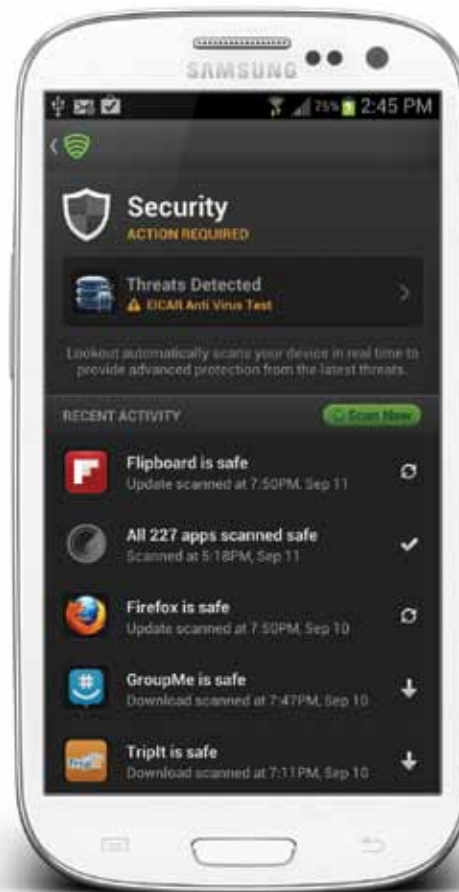
wares on February 25-28 at Mobile World Congress in Barcelona; MWC is an annual industry gathering that is expected to attract 70,000 visitors this year. (Lookout is a finalist for the GSMA's annual Global Mobile Award in the category of best mobile safeguard & security products and services. The winner will be announced at the show.)

"Mobile devices aren't secured in the same way as a computer and that makes them an appealing target," says Louis Marinos, a senior expert on risk management at the European Network and Information Security Agency (ENISA). "A hacker might not attack a mobile device for what is on that device, but rather as a way to get access to a PC or maybe the credentials to log into cloud services."

Today, only one in 20 smartphones has any kind of security software, but experts predict it won't be long before those who use their Android phone, iPhone, tablet or other mobile device without some anti-virus protection will be the exception rather than the rule.

The proliferation of cloud computing has in fact created a new challenge for companies as they confront mobile security. "Part of the problem is the mobile device, part of the problem is the cloud," says former Cisco executive Mike Volpi, a San Francisco-based partner at Index Ventures, an investor in mobile security start-up Lookout. "A lot of mobile devices are just a gateway to the cloud so in part you're protecting what's on the device, but at the same time you are also managing the access privileges."

A Samsung Android phone using Lookout security software.



While the smartphone market and the threats are expanding quickly, almost half of the 13,000 people surveyed in 24 countries for the 2012 Norton Cybercrime report said they did not know that security solutions are available for mobile devices.

While consumers are largely unaware of the threat, corporations have begun scrambling to protect their devices as well as employees' personal devices, which are increasingly used to access corporate data, a trend known in the industry as bringing your own device (BYOD).

"Once upon a time the only thing people brought into work was a feature phone or a normal mobile phone," says Volpi. "Now it's BYOD – iPad, smartphone and even laptops and on those devices there's a mix of personal and corporate assets

that enterprises are struggling to figure out how to protect. This is a big-time priority in 2013 and for companies it is one of the top three issues facing CIOs [chief information officers]."

A recent report from ENISA lists mobile computing as a key emerging threat. The ENISA report found that the most pervasive threat for cyber security in general and mobile devices in particular is so-called drive-by exploits in which people unwittingly download a virus or other malware (see chart for the full list).

What's more, notes the Norton report: almost a third of people have received a text message from someone they didn't know requesting that they click on an embedded link or dial an unknown number to retrieve a "voicemail."

Though Google's introduction of Google Bouncer has had some success in protecting Android devices, the operating system is the most targeted by hackers both because it is the most used and because it is open source. About two-thirds of all threats are targeted at Android with almost a third directed at Symbian, according to an F-Secure Mobile Threat Report for the third quarter of 2012. The small number of remaining threats are about equally split between Windows Mobile, BlackBerry, iOS and Java.

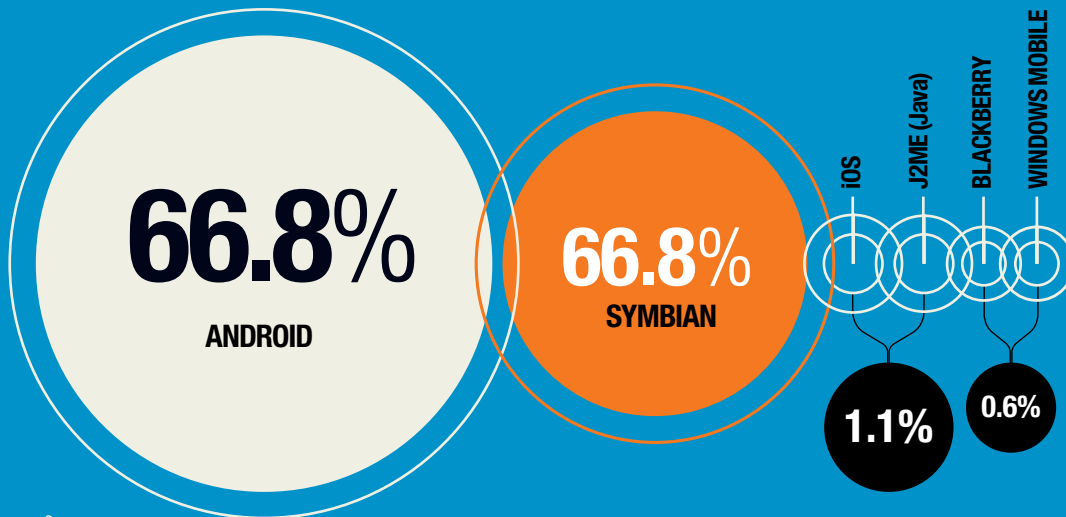
Mobile phone operators are reacting by offering security as a differentiating factor and have begun pre-loading anti-virus software on their devices. Late last year T-Mobile and Orange said their Android phones will come preloaded with start-up Lookout's app-scanning software. Verizon also late last year started offering security features to its customers.

More operators are expected to bundle security software in their offerings. Volpi says there is space for the operators to collaborate with the likes of Lookout by sharing data that can help track down hackers.

"If we see, for example, that a particular area – say Russia or Germany – has a virus that is spreading then we can communicate with operators to let them know it is happening and then they can take preventive measures," says Volpi.

Trouble is cyberhackers know no borders, making them difficult to catch. And as soon as one patch is invented, they seem to find other holes to exploit. Despite the best efforts of security companies and operators, the cat and mouse game with cyber criminals is likely to continue on mobile phones for some time to come.

Mobile Threats by platform (Q3 2012)



Source:
F-Secure Mobile Threat Report Q3
2012 (most recent available)

Survey Says...

The 13,018 respondents (aged 18-64 in 24 countries) to Norton's 2012 Cybercrime report said:

35%
have lost their mobile or had it stolen

2/3
use a mobile device to access the Internet

2/3
don't use a security solution for their mobile device

31%
received a text message from someone they didn't know requesting that they click on an embedded link or dial an unknown number to retrieve a "voicemail"

44%
aren't aware that security solutions for mobile devices exist

Source: 2012 Norton Cybercrime Report

The top emerging threats to mobile devices

The top emerging threats to mobile devices

1. Drive-by exploits (affecting mobile OS and mobile apps)
 2. Worms/Trojans (trojans affecting mobile OS, SMS-Trojans)
 3. Exploit Kits (mobile OS vulnerabilities are already incorporated into exploit kits)
 4. Physical Theft/Loss/Damage (mobile devices will be main targets of this threat)
 5. Compromising confidential information (data breaches of sensitive data stored on the devices or being on the move over communication channels)
 6. Code Injection (availability of code injection for mobile devices)
 7. Phishing (phishing will target increasingly mobile device users)
 8. Abuse of information leakage (data relevant to privacy, leakages from poorly written applications, user errors)
 9. Identity Theft (through credential stealing trojans targeting identity information stored on device)
 10. Botnets (through infections of mobile platforms)
- Source: Enisa Threat Landscape, September 2012

MOBILE SECURITY START-UPS

Along with the likes of security giants McAfee, Symantec (which owns Norton) and Avast, start-ups are lining up for a piece of the mobile security market. Here's a look at a few of them:

BLUEBOX

The San Francisco-based start-up, which last year received \$9.5 million in funding from Andreessen Horowitz and Andreas Bechtolsheim (co-founder of Sun Microsystems and an early investor in Google), specializes in mobile security, but has not yet released a product. The company has said it is working on protecting corporate data on mobile devices and speculation is that in particular it is looking to protect devices owned by employees that are used for both private and corporate tasks.

LOOKOUT

Following deals with several large telecoms operators, the much-talked-about security app will come preloaded on some Android devices. The app, which is available for iOS and since January also for the Kindle Fire, offers virus alerts, phone tracking and the ability to locate a device even after the battery has died. San Francisco-based Lookout has raised more than \$75 million from several venture capital firms including Accel Partners, Andreessen Horowitz and Index Ventures.

PREY

Open source software for Mac, Windows and Linux, Prey can be used on a computer to track a phone, tablet or laptop and then take various actions such as sounding an alarm or wiping stored passwords from the device. A small program is loaded onto the mobile device and then is activated remotely when needed.

ZENPRISE

In the process of being acquired by Citrix for an undisclosed sum, Zenprise allows companies to add a layer of security to the personal mobile devices of its employees. As with most of mobile security software, data can be wiped remotely. Before the acquisition was announced in December Zenprise, which is based in Silicon Valley with an office in Paris, had raised more than \$60 million from Greylock Partners, Shasta Ventures and several other venture capital firms.

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The Operator-Start-Up Connection



BY JAMES SILVER

With their beanbags, primary-color decor and the obligatory table-football areas, tech start-up workplaces have long become something of a self-parody. Nevertheless Wayra's London incubator for "digital talent" is particularly impressive. It's located in an expansive open-plan warehouse three stories above Tottenham Court Road in central London. Yes, there are beanbags and a table-football (plus a bright red replica London phone box), but this is no school for slackers. There's an intensity and industriousness about the place; everywhere you turn there are hushed conversations, huddled conference calls and coders pecking away at laptops.

If the 19 digital start-ups that currently share this piece of prime real estate seem in a hurry, that's because they are. The teams have just six months in Wayra's flagship incubator before they pack their personal effects and step back into the 'real world' — hopefully with follow-on funding.

Inspired by the success of Silicon Valley-based Y Combinator, which launched in 2005, and Tech Stars, which was founded in Boulder, Colorado a year later, different spins on the incubator/accelerator model have now become a fixture in the wider tech eco-system. There are estimated to be more than 50 such programs in Europe alone. An increasingly popular take on this talent hot-housing model is the mobile operator-backed incubator. Just a year after Vodafone xone arrived in Silicon Valley, for example, it had already nurtured a dozen tech companies. There are currently thought to be more than 25 operator-backed incubators in

Silicon Valley, including those financed by Sprint, AT&T, Verizon, China Telecom and Korea's SK Telecom. Deutsche Telekom, which also has a presence in the Bay Area, launched hub:raum, an incubator program based in Berlin, last year.

Telefonica's Wayra is thought to be the biggest in terms of global footprint: it now supports 181 start-ups across 13 academies. (The latest to open is in Prague.) The start-ups dream of being acquired or at the very least getting the chance to distribute their wares to the operators' massive customer bases. For the operators the goals are less clear-cut. It's getting close to the start-up ecosystem that is important.

"We saw most of the innovation in the telco space wasn't happening in telcos: it was being done on the edges by smaller companies," says Ann Parker, director of operations for Wayra Europe, a Telefonica-backed incubator. "We recognized that if we wanted to be part of the action we needed to be part of it from the ground upwards."

Just two of the current Wayra London teams' ideas are mobile apps — the rest are a mix of digital businesses. The reasoning behind this portfolio approach is that Telefonica doesn't want simply to sell products to its existing customer base;

it also wants to investigate new revenue streams, says Ann Parker, Wayra Europe's London-based head of operations. The phone operator does not want to just buy start-ups and plug them into Telefonica, she says; it wants to get a feel for what is happening in the market. "We saw most of the innovation in the telco space wasn't happening in telcos: it was being done on the edges by smaller companies," says Parker. "We recognized that if we wanted to be part of the action we needed to be part of it from the ground upwards. Our second objective was that because most of the best coding and programming talent from Latin America and Central and Eastern Europe was just deciding to go to the Valley, we wanted to create a reason for them to stay in their home markets."

The current crop of start-ups are Wayra London's first. Sixteen teams were selected last spring, with another three following in the summer. (Wayra's London operation has space for 20 teams, making it by far the largest of the group's academies, which are scattered around Europe and Latin America.) Chosen start-ups are offered €40,000 on a convertible loan note by Telefonica, Wayra's owner. Equity (typically 5%-10%) is only taken once the team secures external investment. "Demo Day," in which the start-ups had 10 minutes each to pitch their businesses to an audience of 150, including investors, was held at the end of January. Two teams have secured next-stage funding so far.

To retain a sense of momentum, the start-ups are shuffled around the space at regular intervals, says Parker. "Some pods [desk areas] are in better locations than others in terms of natural light," she explains. "But we also want to remind them that they're not here forever. This is all about creating businesses that

The Night Zookeeper team, one of 19 start-ups housed in Wayra's London incubator.

can exist by themselves. We don't want teams that come to rely on us so much that when we kick them out of the door, they cry 'Help!'."

From the start-ups' point of view, Wayra creates its own mini-entrepreneurial ecosystem, says Josh Davidson, CEO of Night Zookeeper, a children's storytelling mobile and iPad app. "The 'we are all in it together' attitude definitely breeds collaboration — and maybe a bit of rivalry," he says. According to another of the current crop, Cloud 66 — a company that describes itself as offering "application stack management as a service" — says sharing a space with 18 other start-ups means instantaneous and no-holds-barred feedback. "It also gives us an immediate market in which we can test our products," says CEO Khash Sajadi.

But staying in their home markets over the longer term might not be possible. Indeed, Cloud 66's Sajadi — who jokes his goal is to exit for \$10 billion and buy a yacht — says the immediate plan for his company is "to have a physical presence in West Coast, America, where most of our revenue comes from." So how concerned is Parker that a proportion of the start-ups, though incubated in Europe, will be drawn to the Valley anyway because that's simply where they have to be? "I don't mind where people go," she says, perhaps a touch uneasily. "Ultimately who are we to say what's right for any of these businesses?"

CONTINUED FROM COVER

Strand disagrees. Assuming such a Facebook Out service does at least as well as Skype Out, it could add \$800 million to the social networking site's revenues. And there is no reason for Facebook to stop there. It could opt to become a mobile operator, in the form of an MVNO, creating both problems and opportunities for mobile operators in local markets.

"Facebook is a listed company so needs to show growth in revenues and in profits," says Strand. "So the question is where Facebook can get the most growth? Will it only come from advertising or in future will they try and make money on communications? If I were a shareholder of Facebook and the company chose not to go after communication revenues I would accuse them of mismanagement."

THE OTT DILEMMA

While a move into voice is likely to make Facebook's shareholders happy it is likely to, in turn, make the shareholders of some telcos miserable. Mature market telcos that have a sizeable postpaid customer base, charge mostly by volume, or offer unlimited call packages have less to worry about. For example, telcos in the U.S. that already offer unlimited voice bundles are unlikely to be concerned by Facebook's initiative, says Ovum.

The same is not true for emerging market mobile operators, as most of their customers use prepaid services that charge per text. An offer that bypasses mobile networks to make calls to the same friends through Facebook for free is likely to lure lots of users, cutting into SMS charges, which today make up an average of around 20% of operators' revenues, according to Strand Consult.

While mobile operators can price data tactically to try to recoup lost revenues, Facebook's emergence as a voice service provider is yet another hint that telcos everywhere should prepare to move away from charging for voice, says Ovum. Charging for data can alleviate the concerns, but in the long term, Obidou says mobile operators may have to do what every other utility service does: impose a fixed/service charge or line rental.

The trouble is that Facebook is by no means the only over-the-top player cutting into traditional mobile operators' revenues. Ovum predicts losses from OTT players will grow to \$54 billion by 2016.

Operators in developed markets may be better protected than their counterparts in the developing world but they are not immune. The U.S.'s FreedomPop, for example, has created a wireless data service that promises to save customers hundreds of dollars a year, at a time when growing data traffic is giving many customers bill shock. The service also incorporates a social element: users can "earn" extra free data by adding friends to FreedomPop's internal social network.

In some cases, though, operators are finding it to their advantage to partner with OTT players. For example, Fon, the

global Wifi sharing service, has inked deals with BT, Softbank, Belgacom, Zon, SFR, Netia, MTC, Oi, and KPN and says it expects to add more phone company partners by year's end. Fon is one of a whole host of young venture-backed companies that are offering ways for operators to better cope with a huge surge in data traffic.

And, according to Coleman Parks, 70% of mobile operators now see OTT as an opportunity. One example: AT&T has spent millions of dollars to open three mobile developer centers to encourage developers to tailor their work to AT&T's technical specs. 3 Group is integrating Skype into its user experience. And "carrier-managed" OTT services — where the carrier provides higher-quality access to video libraries or live TV — are starting to emerge.

Marco Veremis, CEO of Upstream Systems, a company specializing in mobile marketing, says he believes there is a lucrative opportunity for operators to offer OTT services in emerging markets. Since a tiny number of people own credit cards in these markets it is easier for consumers to buy apps via carrier billing, says Veremis. UpStream, an exhibitor at Mobile World Congress, works with developers to get their apps on its MINT platform, which reaches a total of around 500 million mobile operator customers in sub-Saharan Africa, the Middle East, Latin America and Southeast Asia. The app developers get a smaller percentage than the 70/30 split offered on the Apple app store but have the chance to potentially make more money by selling in volume.

For example, Star Arcade, a Finnish maker of games, is working with Upstream and the Saudi Telecom Company, to release its social gaming platform in Saudi Arabia. The platform contains games like Jelly Wars and Diamond Paradise and a tournament service that the operators can brand as their own. Players who opt to pay a small subscription fee of a dollar or two a month are offered a variety of benefits, including prizes. The upside for the developers is the access to the operators' customer base and integrated billing. It gets a small percentage of the subscription rate. The plus for the operator is recurring additional revenues and potentially less churn, says Remco Smit, Starcade's chief commercial officer.

Still, most consumers are likely to opt to go to outside app stores, such as Android's, which has integrated carrier billing, rather than use apps that are selected and branded by carriers, argues Strand.

Integrated billing does give carriers some advantages but it doesn't make up for all the revenues telcos are losing, says Strand. Operators need to have competitive pricing and plan packaging to address the Facebook threat, he says, as well as explore some Facebook integration.

There are a number of steps operators can take to prevent a future as dumb pipes. But they no longer have the dominant position they once had and are unlikely to ever regain their former glory. That is because operators haven't just lost

Pros and Cons For Operators Of Working With Facebook

	Impact		Solutions for negative impacts
	Positive	Negative	
Voice	Increased social activities	Cannibalization from VoIP	Implement "Facebook call button" Integrate mobile phone number with Facebook profile Try to prevent VoIP on mobile networks
SMS	None	Increased use of Facebook chat, messaging and communication via Facebook wall	Bundle SMS packages with data packages Cooperate with Facebook Facebook integration
MMS	None	Facebook stimulates sharing photos	Make it easy to fetch and share Facebook photos via MMS
Data	Stimulates data consumption	None	Bundle data packages with SMS and MMS packages Further differentiate different types of data packages Sell Facebook data packages
Mobile devices	Increased demand for smartphones and advanced feature phones can stimulate demand for advanced mobile services	Increased demand for smartphones and advanced feature phones can have a negative influence on SAC and churn	Market inexpensive mobile phones as "Facebook ready" Increase the knowledge level of customers regarding which mobile phones can be used for Facebook Improve the integration of Facebook clients
Customer services	None	Increased number of customer service calls regarding Facebook	Upsell data packages that include SMS and MMS packages to customers Improve the online customer information about using Facebook Charge for customer service calls about Facebook
Sales	Increases the demand for smartphones, advanced feature phones and data packages Increases traffic in the distribution channels which can result in increased sales	Creates traffic in the distribution channel, which will increase support costs	Increase sales of data packages that include SMS and MMS packages Start selling mobile phone insurance
Marketing	Marketing the possibility of accessing Facebook on mobile phones	Facebook is an expensive marketing channel	Co-branding mobile phones with Facebook Marketing the possibility of purchasing data packages that include SMS and MMS packages

SOURCE: STRAND CONSULT

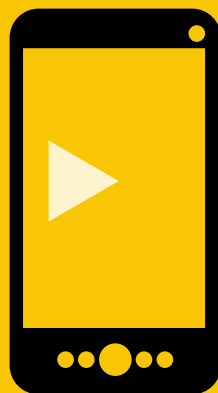
market share; they have lost mind share. "Who do you think a customer will be more loyal to: Facebook or Vodafone?" asks Strand. It is an apt query. A January 21st online comment reacting to news of Facebook's free voice service on Wired's UK web site speaks volumes about how OTT players

have turned the communications sector upside down: "The real question," asked a commentator using only the first name Eric, "is do people want Microsoft (Skype) or Facebook as their primary voice carrier?"

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