

## Predictions for 2013

Wireless Week Staff

**Before being posted to our website, the following was printed in Wireless Week's December print and digital issues.**

*Let's just say the Mayans were wrong and we make it to 2013. If that's the case, you're going to want to peruse this issue of Wireless Week. The following pages are chock full of insight from top industry executives on what to expect in the coming year. As it turns out, most of the suits in the wireless industry are also handy with the crystal ball.*



*If we've read the tea leaves correctly, it looks like BYOD will continue to disrupt nearly every segment of the industry. The power of LTE will continue to drive an incredible array of new applications and devices. Speech will change how we interact with our devices. And yes, one of our executives goes out on a limb and actually suggest there will be a 2013!?! Read on to discover these and many more*

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### **More Disruption from LTE**

Laurent Desclos, President & CEO, Ethertronics

There are several trends for 2013: operators will continue deploying LTE networks with pressure increasing to offer international roaming and devices will continue trending toward sleeker/thinner designs with growing functionality.

At the same time, real estate within devices is shrinking by 25 percent annually to accommodate larger batteries and displays. That leaves little room for the RF componentry, including antennas – the device’s only connection to the network. I predict a major shift in how OEMs approach wireless device design to deliver LTE’s promise of faster speeds, greater connectivity and a superior user experience. Already we are seeing active antenna systems – advanced antenna structures combined with active components, such as tunable capacitors and/or switches – coming to market. Active antenna systems provide advanced capabilities, including up to 50 percent smaller antenna volumes, to solve 4G’s toughest challenges. There’s no question that the proliferation of these active antenna systems will continue.

Additionally, I expect continued advancements in RF chips that are capable of seamlessly adjusting the cellular antenna’s characteristics to its dynamic requirements for optimal connectivity, including compensating for the detuning of the antenna systems due to hand and head effects. Antenna and RF chips combined as a system will also continue to evolve. Soon we will see the introduction of integrated “active” antenna/chip, plug-and-play modules that are smart enough to dynamically adjust to their surroundings and tune across the wide range of required frequencies. This will provide fast and easy integration for OEMs. Active antenna systems will continue innovating, giving OEMs a way to differentiate themselves in an ultra-competitive marketplace and significantly reduce the lead-time in developing new wireless devices.

### **Speech to Revolutionize UI**

Vlad Sejnoha, Chief Technology Officer, Nuance Communications:

Advancements in speech, natural language understanding (NLU) and artificial intelligence will continue to revolutionize the mobile user interface (UI). Speech input is certainly more convenient than typing, but more importantly, language is a powerful and extremely efficient way of conveying complex instructions that cannot be matched by any other UI method.

For example, speech and natural language understanding are already changing the dynamics of the search industry by understanding the intent of users’ queries and

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either answering the questions directly, or taking these users directly to a wide range of preferred services and content, bypassing search portals and their lists of blue links.

Looking forward into 2013 and beyond, the mobile UI will begin changing in profound ways. In contrast to today's implementations where voice, NLU and artificial intelligence are 'add-ons' to conventional visual 'desktops', we will begin to see these technologies integrated deeply into the user interface. Increasingly, users will be able to access and control content and apps which are not necessarily visible on the screen, through natural language - leading to the third UI revolution.

NLU and AI in the mobile UI - in the form of personal assistants - will become even more powerful. Utilizing speech, video, and touch input, and by using context and understanding of the overall task goals, assistants will increasingly be able to solve "meta" tasks (composed of many sub-tasks). For example, imagine being able to tell your assistant to get in touch with your friend's personal assistant to see if they're available on Friday night for dinner, and if so, book a reservation for both of you at your favorite Italian restaurant.

Mobile assistants will tackle even more use cases, like customer care. For instance, they'll know when it's time to pay your mortgage bill and perhaps provide you with a simple reminder and prompt to get it done directly with your bank, or help you look into new insurance options if you've purchased a new car.

We're truly just at the beginning of what is going to be an entirely new era of intelligent systems driving more humanized interactions across a wide range of devices, including smartphones, tablets, PCs, cars, and TVs.

## **2013 Predictions: Machine to Machine's Coming of Age**

By John Horn, President of RACO Wireless

There's no denying that the machine-to-machine (M2M) sector is poised for a revolution in 2013. In 2012, we saw the rise of M2M that forever changed the way industries work—from in-flight credit card machines that enable you to purchase food and drink to chicken farms whose automated operations track everything from barn temperatures to the feeding of animals. In 2013, M2M will continue to create greater operational efficiencies, more productivity and fewer costs for companies across all industries.

And we are only at the beginning. People want more convenience, and enterprises want more productivity. This creates greater demand for M2M than has ever been seen. Whether it's automated buildings whose air, electricity and water flow can be controlled remotely, or heart monitoring systems that can alert your doctor via text message for irregularities, the role that M2M will play in our everyday lives is just starting to be realized.

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2013 will also see consolidation of a widely dispersed industry. As carriers begin to see the impact that M2M can have on their revenue models and companies understand that M2M solutions can solve business problems with as much as a 40 percent ROI in the first year of usage alone, we will see M2M graduate from an esoteric and misunderstood technology segment to a widespread must-have solution set.

We will also see automotive, security and asset tracking sectors grow rapidly, while agriculture, oil and gas will completely change. Furthermore, new industry segments will rise up that no one has even considered. As the industry expands, it will be critical to the continued growth and success of M2M to have enabling companies that are extremely flexible in bringing new solutions providers to market—within a day if necessary.

### **The Year Roaming Grows Up**

Jeff Gordon, President and CEO, Syniverse

2013 is the year the concept of “roaming” will fully evolve to encompass much more than geographically extending cellular network coverage.

New roaming scenarios already exist that didn't just a few years ago. For example, a mother using her smartphone as a Wi-Fi hotspot at her child's soccer game to provide high-quality connectivity for other spectators. A college student using Facetime to connect with friends and family. Or, a restaurant patron inviting friends to meet him for dessert via Facebook or Twitter.

It's clear the mobile service providers that now interact to enable end-user experiences consist of a diverse group, including traditional MNOs, cable and Internet providers, consumer brands, local businesses, applications providers, social networks and many others. Additionally, the types of networks that can deliver these services, such as 3G, LTE and Wi-Fi, continue to expand.

These new usage scenarios are accompanied by massive increases in scale and complexity, creating issues that could stand in the way of the exponential growth potential that today's mobile stakeholders hope to realize. Fragmented end-user experiences – those in which seamless access to service is hampered by business or technical gaps among the various networks, applications and devices at play – present serious barriers to mass adoption of any mobile service.

The key to overcoming this challenge is the establishment of tighter relationships between the various mobile players to ensure seamless interoperability and interworking between services, much like traditional geographic roaming has done for mobile operators in the past. In 2013, we will see the new set of diverse mobile players work closer together to drive integrated experiences across networks and applications. To support this effort, the vendor community must pick up the pace of

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innovation now to develop the new interoperability solutions required to facilitate these critical relationships.

### **Wi-Fi Driving WLAN Capabilities**

Taqi Mohiuddin, Senior Product Marketing Manager, Motorola Solutions

Wi-Fi has become the ubiquitous network access to address mobility and productivity in many industries. Hoteliers are relying on WLAN for staff communications and to engage and improve guest experience. Retailers engage shoppers with their mobile devices and use analytics to improve customer experience. Manufacturers are using Wi-Fi for communicating across the warehouse/plant floor and to track products throughout the supply chain to obtain real-time inventory visibility.

Here are some of the WLAN trends we see in 2013:

Bring Your Own Device (BYOD) initiatives will continue to grow with an emphasis on secure access. BYOD has progressed from simply on-boarding users to now managing employee- versus corporate-owned mobile devices and ensuring network connection is secure and access control is enforced.

Use of cloud applications and services will continue to increase. As companies leverage cloud services and embrace BYOD, employees will be increasingly reliant on their mobile devices which rely on the corporate WLAN.

Interest in location-based services continues to be popular for hospitality, retailers and manufacturing. Whether knowing where a shopper or guest is to provide a personalized experience or tracking workflow in a storeroom or shop floor, location-based applications will leverage their pervasive WLAN.

Wireless operators/carriers will continue offload strategies to ease congestion on their 3G/4G networks. We expect carriers to focus on seamlessly and securely transferring customers to the most optimum network, whether cellular or Wi-Fi hotspots, automatically. Wi-Fi Alliance Passpoint interoperability test program will gain importance.

Finally, Wi-Fi-enabled mobile devices are pervasive and as businesses adopt mobility, the underlying Wi-Fi network needs to be robust and scalable to accommodate the growth of mobile devices and their applications.

### **Work on BYOD Only Just Beginning**

Costis Papadimitrakopoulos, Founder and CEO, GLOBO PLC

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BYOD was the CIO buzzword of 2012. But as the pioneering enterprises return with concerns over security and privacy, the real work is just beginning in order to ensure that the implementation of a BYOD program is simple, secure and allows for management of the enterprises' information, business apps and critical content without foregoing employees' privacy.

According to a recent report from Forrester, "54% of North American and European firms are focused on developing a comprehensive corporate policy to support employees who bring their own smartphones and tablets to work and use them for work activities." The want and need for BYOD is here, and so are the solutions!

Current BYOD solutions offer end-to-end security with data remaining encrypted at all points and not being stored in, or even passing through, external data centers. So, the "concern" on the part of some enterprises is really more an issue of trust. If mainstream adoption of BYOD is going to happen in 2013, CIOs need to have confidence in their chosen enterprise mobility solution and proceed with deployments.

In 2013, I see enterprises shifting away from the idea of managing the entire device with MDM software, instead opting for enterprise mobility platforms with a containerized application solution that allows for the management of just the business content. This move solves the issue created by MDM that otherwise leaves the workforce feeling uneasy about the enterprise potentially having no holds barred access to the personal device, while allowing the enterprises to manage what's theirs.

Although we've come a long way with BYOD for large corporations in 2012, we will start to see more enterprise mobility solutions that are aimed at SMBs. Some of these solutions may be created especially for SMBs and other existing solutions may be scaled down for deployment to smaller companies, lowering the barrier for entry. Who's to say that the employee of the local insurance agency doesn't need to access the company's CRM tool while he's out of the office?

Companies are armed with the knowledge and tools to implement large - and even small - scale BYOD programs, so we aren't far away from it becoming a reality. Secure solutions are already in the market; now it's time to trust and deploy.

### **Emphasis on Services for Differentiation**

Ray Bariso, Vice President of Strategic Development, Ericsson

In 2013, Ericsson expects Communications Service Providers to focus more on customer experience by concentrating on convergence and improving the efficiency in their networks to create brand differentiation. CSPs will more rapidly deploy new service offerings to diversify and drive innovation in the industry as we move toward a 50+ billion connected society.

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Consumer demand for ubiquitous communications and over-the-top services are higher than ever – and these demands need to be met and exceeded to optimize the mobile experience. Billing and service assurance will heighten in importance in delivering an optimal mobile customer experience, and as more services are introduced and the underlying network technologies become more complex, service providers will need to optimize their OSS/BSS infrastructure to effectively manage and deliver the highest standard of customer experience. Tiered pricing will become a differentiating factor for CSPs to be able to deliver services effectively, fluidly and profitably directly to consumers.

### **The Year of the CMO**

Steve Brumer, Partner, 151 Advisors

2013 is the year of the CMO, but I'm not referring to the Chief Marketing Officer. Have you ever heard of the Chief Mobility Officer?

The mobile and wireless challenges within today's enterprise organizations make this new position increasingly important. The growing number of mobile requirements by various departments within a single company always comes with different goals, objectives and budgets.

From corporate executives and sales and marketing teams, to the mobile workers in the field and on logistics trucks – each have specific needs when wireless and mobility is involved. What we see today is a lack of information flow amongst these various departments about their mobility needs. These teams do not “talk” to each other about department mobility projects.

This is the new role of the Chief Mobility Officer, the new CMO.

The mobility requirements of large enterprises grow exponentially almost daily, which deserves at minimum, one person in charge of managing it all. In the same sense, departments need a resource for mobility expert advice, information and assistance.

The mobility department should be viewed as the catalyst for increasing productivity and efficiencies within departments that would not otherwise consider wireless technology.

Contracts with worldwide carriers would be negotiated within the mobility department because this team will know all the departmental business units and end users, along with apps and voice/data/SMS/M2M needs. For example, when a new wireless app is needed in Asia, the CMO team would provide experience, knowledge and perhaps even the same programs that are deployed and available in another department, saving the company significant time and money.

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As mobility continues to explode within corporations' departments, each with distinct business objectives, the investment in a CMO will provide a solid return on investment almost immediately and for many years to come.

### **LBS, Tablets, eCommerce and Responsive Design**

Troy Brown, President and CEO, one50one

In 2012, the marketing community saw brands begin to incorporate mobile spend under their marketing budgets. In 2013, one50one expects brands – both big and small – to significantly increase their mobile marketing budget to accommodate considerable advancements in the following areas:

**Location-based services** – Brands began to experiment with LBS in 2012, and in 2013 will catapult location-based marketing into the major leagues. With in-store marketing, geofencing, and navigation, brands now have more tools to engage consumers by location. A standout challenge: integrating into consumers' world in a way that is non-obtrusive.

**Tablet adoption** – IDC Corporation forecasts the worldwide market for tablets in 2013 will reach 142.8 million units, making the advertising market on tablets more appealing than ever. What sets tablet advertising apart from traditional digital marketing is that it's experience driven; consumers can touch, tap and swipe at images, and interact with touch, sight and sound.

**Social/mobile eCommerce** – the use of open API's on a multitude of platforms including Facebook, Twitter, Instagram and more, are going to allow for far greater uptake of mobile and tablet eCommerce opportunities within the messaging streams of these platforms.

**Responsive design** – desk tops, laptops, mobile devices, tablets, mini tablets, eReaders and more – the connected devices market is expanding, and marketers will need to accommodate websites and advertising to reach consumers in a meaningful way, regardless of which device they use. Responsive design, which changes the way content is viewed based on screen size, will be key to managing how a brand messages is viewed on any given device.

### **Market for Refurbished Devices Will Take Off**

Perry LaForge, Chairman, Device Renewal Forum

Here's a prediction that you can bet the farm on: In 2013, more than 400 million smartphones will wind up in the trash or stuffed in the back of a desk drawer. That's a sure thing because since the dawn of smartphones, less than 1 percent have been recycled in any given year.



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2013 will be the year that the industry finally breaks that habit – not just for smartphones, but for feature phones, USB modems and other wireless devices, too. One reason is that renewed devices give operators and distributors additional options for targeting price-sensitive demographics such as the credit-challenged and prepaid users. Refurbished smartphones, tablets and modems are ideal for increasing Internet penetration in developing markets.

The biggest reason is because in 2013, the Device Renewal Forum (DRF) will begin implementing a global framework that makes it convenient and cost-effective for operators, OEMs, distributors and other ecosystem members to deliver renewed devices that appear and perform like brand-new models. The DRF will free operators and vendors from the cost of having to develop and maintain their own refurbishment programs.

The DRF certification mark will give consumers and enterprise buyers the peace of mind that a device has been thoroughly inspected and updated, from its battery to its operating system. These quality controls also enable operators to protect their brands while they pursue the new market opportunities that refurbishment enables. It's a future where everyone benefits, and it begins in 2013.

### **Super Apps Outcompete Traditional Apps**

Wendy Burden, EVP of Brand and Business Development, iViu Technologies

With more than 1.3 million mobile apps flooding the App Store and Google Play, the rise of “Super Apps” will outcompete traditional mobile apps in 2013 as search and scanning begin their decline to obsolescence.

Super Apps – mobile applications with groundbreaking features – will be a game changer for smartphone capabilities, enabling them to become the command center for living, and are posed to dominate the app market in 2013.

Key differentiators from traditional apps will include: Multi-modal input, including voice and touch, for easy and intuitive interaction with apps; Personal assistant capabilities that are highly predictive, know what you want and when you want it, and in the context of what you were doing prior to the action

Curated content based on: Social data and information, including likes and preferences on social networks; Hyper-local detection and navigation in buildings to provide relevant, timely and actionable information; Mobile preferences, including types of notifications received, at specific times of day and in specific locations; Endorsement of people that you trust, including friends, celebrities, experts and

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more; Mood detection, and detecting a current physical or emotional state in order to adjust

### **Enterprise Ready Devices to Hit Market**

By Lori Sylvia, Executive Vice President of Marketing

In 2013, consumers and enterprises will see the results of the mobile ecosystem's work to rethink the future of smartphones and tablets. We believe the first enterprise ready devices, developed and built for enterprise and employees in order to support Bring Your Own Device (BYOD), will become available.

We're finding that market demand for separate devices for work and play continues to weaken in favor of one smart device that can seamlessly support both. To this point, however, IT managers have been forced to settle for "good enough" when supporting BYOD. Today's devices have not been designed with the enterprise in mind, forcing the deployment of third-party applications and containers onto employee devices in order to add some level of security and management. This approach has proven a short-term solution for a major issue facing IT.

Over the last few years, mobile industry leaders have been working on a new class of Enterprise Ready smart devices that are designed to be trusted by the enterprise for employee use. These devices will need to be made with Type-1 hypervisors and be supported by mobile software management tools to provide IT with the deepest level of security available. This will allow employees to access and use devices they love and enterprises to deploy a device they trust.

### **Wi-Fi, Advertising and BYOD**

Dan Dulac, VP of Solutions Engineering for Enterasys

#### **802.11ac Will Not Be Better Than 802.11n**

The promise of 802.11ac is garnering quite a bit of attention. There are so many congestion issues with mobility density that 802.11ac will not fix those problems. The biggest reason is because the wireless clients that are connecting to a network now would not be able to connect to an 802.11ac network. In fact, 80 percent of devices are running at 2.4 GHz and cannot connect to 802.11ac. Another holdup to 802.11ac adoption is battery life. The more power consuming chips put into the phones and tablets, the less battery life they have. However, there is a strong potential for 802.11ac technology to be used in data centers to cut down on cabling costs and less so for users connecting at the edge.

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### More Advertising Will Be Going Wireless

In 2013, vendors will be exploring the wireless air space as another medium to advertise. For example, when connecting to wireless in an airport, users will view an ad before they can access the network. In the new year, vendors will be trying to bring that type of capability to the retail and hospitality verticals. This is an explosive growth area for wireless, which will allow businesses to subsidize technology with marketing dollars they are receiving from advertising. The ability to support wireless advertising will be a promising technology in 2013.

### BYOD Solutions Must Include Wireless/Wired Devices in 2013

Many BYOD solutions only focus on wireless network connectivity; however, the solution must also incorporate the wired devices that users are bringing into the environment. BYOD isn't just about Smartphones and tablets, but also laptops, printers and even VoIP phones - all of which most likely have wired Ethernet ports plugged into the LAN. A BYOD solution should protect wired, wireless and VPN. In 2013, it will be important to ensure the BYOD solution used covers the whole network, not just wireless.

### Refurb, Recycle in the New Year

Theo Alkemade, Senior Vice President Operations for the EMEA region at Teleplan

The number of smartphones will continue to grow drastically over the next couple of years and they will become the most common web-access devices. At the same time mobile phone users tend to always desire to own the latest mobile device model. This indicates the tremendous volume of used and still usable mobile phones in the market. Asset Recovery, certified device renewal processes and the identification of second market sales channels will be on top priority for manufacturer, operators and after-market service companies going forward.

### Networks Continue Evolution

Eric Moore, COO/CTO, Axis Teknologies

**Data Centers:** These will become more important as data usage increases. The question becomes, "How do you manage the data capacity dynamically, shifting usage from different areas of the network to the correct data zones?" Some automation to allocate resources to "hot" areas should be implemented.

**DAS:** Distributed Antenna Systems will continue to be the tool of choice for improving coverage and capacity in high population areas or events. Since DAS is technically part of the macro network, the implementation and maintenance is relatively easy to manage and seamless for the customer.

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**Network Automation:** Managing multiple layers in a network manually is increasing in difficulty given the inter-operability of the layers and usage. A single problem can impact many users very quickly. I expect we will see more “intelligent” software developed that will automate dynamic changes in LTE network configurations to maintain the necessary KPI's required to provide a solid QoS for customers.

**Femto Hotspots:** I think the time is approaching where you will have Femto hotspots instead of WiFi hot spots. Licensed carriers can leverage the small nature of the antennas and smaller base station to provide additional coverage that can be seamlessly inserted into the macro network. Femto hotspots are not for large scale applications like stadiums and such, but can be used to provide hotspots in many areas.

**M2M:** I hope to see the utilities - water, electric and gas - better leverage technology for improved command, control and cost efficiency efforts including the use of small cell networks to automate meter reading. Specific targeted areas where the business case demonstrates a significant expense savings should be the initial focus.

### **Risky Business: BYOD and Data Security**

Markku Willgren, President, US Operations, Blanco

More personal devices than ever are now used for work, and the trend is expected to continue. Gartner says that by year 2014, 90 percent of businesses will support enterprise applications on personal devices, creating a complex scenario for protecting business data. This is a particularly tricky - and risky - issue when an employee opts to upgrade a smartphone that may still contain sensitive corporate information.

Many IT asset and security managers recognize that simply destroying a smartphone's SIM card and performing a factory reset doesn't always fully erase internal and external memory. Surveys have shown that from 20 to 90 percent of mobile phones reach the secondhand market with sensitive data. So, before employees turn a smartphone into a wireless provider for disposal or recycling, donate it to a worthy cause for reuse, or simply store it at home, it needs to be fully erased by special software that provides a report as proof that the device is free of data.

Yet even with the right technology in place to remove data from smartphones and other devices like tablets, IT managers will grapple with creating and enforcing a security policy that requires employees to submit personal devices like smartphones for erasure - even if they have performed a reset. An effective mobile device policy should involve the employee's registration of the device by serial number with the IT staff, which can monitor its access to corporate data. Also, the

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policy should require a written sign-off from employees guaranteeing they will allow the company to erase the device before it is disposed or upgraded, as is routinely typical in a wireless carrier agreement.

### **Smartphones Continue to Disrupt**

Andre Jacquet, Chief Marketing Officer, Brightstar

In 2013, consumers' demand for smartphones will continue to explode, putting different demands on operators and retailers. Thus, we predict the following trends:

Device buy-back and trade-in will scale up. Operators will leverage buy-back and trade-in not only to lure subscribers, but also as a means to reduce churn. The trade-in value of phone/device will be included in service contracts on a broader basis. The key to scaling buy-back profitably will be optimized reverse supply chain management - which most operators don't have. This makes outsourced SCO very attractive.

Consumers' need to stay connected 24/7 will boost interest in device protection programs. As more people use their device to connect to their work, store personal content in the cloud, and transact mobile commerce, their appetite for protection programs - insurance, warranty and mobile security - will increase, and will translate into unprecedented take rates. Operators and retailers without strong offerings will miss an opportunity for revenue growth, and risk losing their customers to churn.

Omni-channel "buy-anywhere, return anywhere" trend will continue to grow. Wireless customers will expect the same type of sales experience across every touch point: smart phone, online and brick and mortar. Operators and retailers will wake up to this reality or fall behind.

Consumers will embrace mobile financing. Operators and retailers will find ways to serve the growing number of consumers in developing markets that want a smartphone but can't afford the upfront payment. The key to unlocking the full market growth potential in non-subsidized markets is to lower the cost of access to the most popular smart-phones and tablets.

### **Bandwidth Efficiency and H.265 Will Be Game Changers**

Kay Johansson, CTO, MobiTV

A popular 2012 buzzword, "TV Everywhere" is really just "TV somewhere"—only under certain conditions with some content. The industry will reach a

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crossroads 2013, as consumers expect the literal implication of the phrase: content everywhere and on all platforms, detached from a set-top box for a more personalized experience. This expectation—and shift away from traditional models—in viewer behavior brings a more critical debate to the forefront among content providers around how content will be provisioned over IPTV and multiples screens moving forward.

Demand for optimized delivery across platforms and devices will only increase as bandwidth remains a premium, and consumer demand for HD content grows. The solution? Widespread adoption of game-changing advancements that will reduce and manage bandwidth requirements to support a personalized experience—an essential milestone in bringing content freedom to the masses.

We project that 2013 will usher in a new mentality and model for true TV everywhere. As wireless communication becomes an ever-more important and pervasive part of everyday life, system capacity and quality of service issues are paramount. In order to bring superior quality for live TV and on demand services, video distribution needs to be optimized for high-quality viewing experiences specific to the user's device, its capability and changing network conditions. This calls for the ability to dynamically optimize the Quality of Experience according to these variables—adding a layer of intelligence to create bandwidth efficiency.

Major advancements surrounding enhanced video compression standards will remain top-of-mind in 2013. HEVC (H.265), the latest iteration of industry standards, is recognized as a significant leap forward in video compression standards, poised to supersede the current AVC (H.264) standard. With its promise to reduce bandwidth requirements by as much as 50 percent without compromising quality, HEVC will be ratified in 2013. With the shift to higher quality services and more personalized experiences, the introduction of HEVC (H.265) will aid the demand for increased bandwidth requirements over wired and wireless networks.

### **Mobile, "Big Data" and Cloud Will Merge**

John Sims, President, Sybase 365, a division of SAP

With mobile internet usage surpassing desktop internet usage, mobile apps proliferating at a breathtaking rate and the mobile commerce market expected to exceed 30 billion by 2016, operators are working to acquire more spectrum and are moving toward highly flexible, secure all-IP networks to accommodate "big data" demand. Data consumption is exploding as the number of 'things' connected to the Internet already exceeds the number of people on earth. This coming year we should expect to see an inflection point between mobile service providers and businesses around the combination of mobile, big data and cloud. Those that embrace this trend early on will be in the best position to quickly transform businesses and markets, and the experience for consumers and employees.

### Mobile Drive the Connected “Internet of Things”

Sanjay Poonen, President and Corporate Officer, SAP, Technology & Innovation Products

The continued proliferation of mobile devices and move from desktop-to-tablet will define the technological evolutions we see in 2013. With growing user bases relying on mobile devices at home and at work, the demand for more robust mobile applications is on the rise. And just as consumers looking to bring their iPhones to work drove BYOD, consumers looking to utilize their favorite productivity tools while on the job will drive BYOA (Bring Your Own App) as businesses will look to deliver intuitive and elegantly-designed apps familiar to the consumer, but in a compliant and enterprise-grade form. Enterprise App Stores will eventually become the norm.

The movement toward mobile, and the accompanying apps will also foster a world where “connected” comes to apply not just to our devices, but also the buildings we work in, the vehicles we drive and the machines we use. The connected world is becoming increasingly an “Internet of Things” and in 2013 we’ll be forced to consider the scope of what can be mobilized, especially given the real possibility that as 2012 comes to a close, there will be more smartphones on the planet than humans. My prediction, therefore, is that the emerging Internet of Things will generate a need for actionable, real-time business intelligence driven by the infusion of big data across the enterprise, mobile and the cloud—which will also inspire a need to think about what it means to secure devices more broadly.

### There Will Be a 2013 (and some other predictions)

Nick Johnson, CTO, ip.access

Predictions for 2013? Isn’t the world going to explode on 21st December 2012 when the Mayan calendar runs out? I’m sure I read that somewhere on the Internet. Why am I predicting anything for 2013? I suppose that’s my first prediction - there will be a 2013.

**Next prediction:** Caring, sharing networks. Actually, the caring bit may be a dream, but network sharing will definitely increase in 2013. The balance between network loading and revenue generating continues to tip as the demand for data doubles yet again next year. The Operators will respond by sharing more of their network resources, and even merging operations, as has already happened with T-Mobile and Orange in the UK. More network sharing deals will break in 2013.

**Next prediction:** Multi-multi-multi-small cells. A new generation of small cells will emerge that can provide radio coverage for multiple operators, multiple radio bands and multiple standards within a single piece of hardware. Our first small cell in 2000 struggled to offer a single carrier of GPRS. In 2013, silicon technology has

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progressed so far that we can generate an LTE carrier, a 3G carrier, a WiFi 802.11n carrier and an even an EDGE carrier - all within the same form factor and power consumption of the earlier products. Watch this space for those announcements.

**Next prediction:** 3G leap-frog. For years we assumed that there would be a straight-line from analog through digital GSM to 3G and then LTE. Watch for that straight-line to take a short-cut past 3G in some markets, where operators will co-deploy 2G with LTE without worrying about 3G at all.

**Last prediction:** Assuming we get past the end-of-days before the year even starts, 2013 will be an interesting year for us all - even the Mayans.

### Race to Control the Connected Home

Dermot O'Shea, Director, Taoglas

On the consumer front, I can see already a race taking place between the main carriers for control of access to the home whether for cable TV, broadband or home automation systems. With all the wireless devices that have been designed and now being marketed to the consumer such as smart energy, monitoring home devices remotely and security, there's going to be a big push on spend in advertising and development in that area. Anybody can now get a 4G router that works on Wi-Fi in the house but is backhauled by 4G to the network. It will give users access to everything from security system to telling you if you left your garage door open. Taoglas will be involved in the antenna challenges this brings, where you need two antennas for LTE and four inside for Wi-Fi.

In industry, the emphasis on medical devices will continue. There will be more patient monitoring requirements by the healthcare industry, and providers will be responsible for the patients' health care once they leave hospitals. The smart meter market will also start to take off globally. In 2013, we will see Wi-Fi access become available in the car models at the dealers. A HSDPA box in the car will serve as a tracking and telematics system, but will also provide Wi-Fi to the passengers or driver.

### Improved Access to Wireless Networks a Must in 2013

Lona Dallessandro, VP Bus Development for Telespree

Next year stands to be a year where we will see a lot of changes. In particular, there will be even more discussion around improving access to wireless networks, including ramping up the use of small cells and Wi-Fi offload. There are technology advances to come that will improve the efficiency of spectrum use, but until then, demand will outpace capacity and so these interim solutions will be front and center.



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In addition, Apple will become serious about gaining ground in the Enterprise market. They have an issue of “iPhone fatigue” creeping into the consumer space, but recognize that there are a LOT of phones and tablets with iOS being used in corporations – more so than MacOS ever could claim. Watch for enhanced security and BYOD support to come from Apple in an effort to shore up these in-roads and combat some softening in their dominance on the consumer side.

I also believe more and more emphasis will be placed on enterprise security and cloud platforms. It makes complete sense that “the SharePoint of tomorrow” will be revealed once companies can track and account for its information while enabling a mobile workforce.

And finally, regulators will have to grapple with how companies can use “big data”. There will be policy fights about privacy and profiting off of user behavior and a whole host of other topics. Who people end up trusting the most will be key – right now the telcos think they have the edge, but will a new “most trusted source” emerge?

### **Mobile to Converge Social, Communications and Content**

By Eric Setton, Co-Founder and CTO, Tango

In 2013, I expect that all devices will continue to become completely connected, and that there will be a convergence of social, communication and content on mobile.

Content destinations like Yahoo will add mobile communication capabilities such as video, text or sharing of personal content as an engagement layer. Social networks like Facebook will continue to try to add communication modes, and communication companies like Tango will convert their broad networks into social networks. They will leverage their direct reach to users to present a content offering appropriate for the type of interaction they foster.

Next year will make or break ecosystems like WP8, Amazon and Blackberry on mobile. One of those companies might emerge as a third alternative to iOS and Android, but it has to happen in a relatively short period of time as the gap keeps widening.

The continued adoption of 4G will help social communication. The quality of voice and video will continue to increase. User experience will improve, which is typically a very good predictor of adoption and retention by a large user base. Social communication companies like Tango will continue to do well.

The adoption smartphones and tablets within the home will create a natural segmentation in usage. People who have both devices will naturally prefer to perform certain tasks on each device. Communication will likely remain the domain

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of the smartphone, while certain types of content may become more frequently consumed on the tablet. All of this will create an impact on the apps running on those devices in terms of their UI/UX on each device, or simply their segment focus.

Lastly, I foresee new forms of distribution. With 800,000 apps on iTunes, developers are struggling for visibility and distribution, which will benefit other platforms like Google, and perhaps WP8 or Amazon.

### **LTE Will Change Consumer Choice, Options**

Sanjay Mewada, Vice President of Strategy, NetCracker Technology

LTE deployments are likely to hit their stride in 2013, with the 10 million subscribers that we have today (80% in North America, according to Infonetics) mushrooming as deployments in Asia-Pacific and EMEA are turned up. As operators are looking forward to launching commercial services, they will find themselves with a critical need to drive top-line ARPU growth while tightening up efficiency in order to monetize their expensive 4G network builds. It will not be enough to simply differentiate on speed or network coverage. For a viable business model that lasts, operators will need to make strategic decisions operationally in order to find fresh revenue and optimization sources.

The ability to craft new application-specific bundles and appropriately manage the customer experience will be top of mind for operators going forward as they look to drive an ROI into 4G.

For 4G operators in 2013 will look to switch consumers to an entirely new service landscape, by laying the foundation for real-time, converged BSS. They will also begin to invest in monetizing the data traffic through the use of policy-based capabilities, enabling them to charge for applications and usage based on customers' perception of value for a service or application. It will also drive on-demand throttling of bandwidth based on applications and quality of service.

The key to being able to put together app-aware packages lies in next-generation policy management and policy enforcement. Operators also will look to implement better network visibility to manage the customer experience end-to-end, matched up with network inventory and management information so that an operator can be proactive about grooming network resources to fit usage levels.

### **BYOD, BYOA and BYOW**

Ben Gibson, Chief Marketing Officer, Aruba Networks, Inc.

BYOD was probably the most repeated word in the IT lexicon this year, and with

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good reason. Based on the financial results of the main tablet and smartphone vendors, the growth in BYOD is going to increase and will continue to drive the demand for secure, pervasive, wireless LAN deployments across many industries.

In 2013, we'll see:

- **The Battle of BYOD:** As BYOD continues to take hold, enterprises have to address the IT department's need to keep the network safe vs. their employees' privacy concerns, IT's requirements for controlling the devices connecting to the network and their employees' desire to keep personal information on their devices out of their corporations' hands.
- **BYOD, Say Hello to my Friend BYOA (Bring Your Own Applications):** Consumer and enterprise mobile apps are hitting company networks with six times higher volume than smartphones and tablets. Gartner estimates there will be 310 billion app downloads by 2015. Do you know who is tweeting, liking and posting on your network right now?
- **All the Cool Kids Have it – Reliable UC:** Mobile users expect ubiquitous access to enterprise applications, including every aspect of unified communications. Enterprises, schools, hospitals, stadiums and everyone else will be evaluating when to replace the venerable IP desk phone with a smartphone or tablet running a UC client and operating over an application-aware, multimedia-capable Wi-Fi.
- **802.11ac is the New Black:** Enterprises are still wondering how .11ac will benefit them and what they should do to prepare for it. The new Wi-Fi standard will enhance many aspects of enterprise networking, but it's important to understand the features, benefits and limitations as well as how it will impact the enterprise's WLAN architecture.

If 2012 was the year of BYOD, 2013 will be the year of BYOD, BYOA and most probably BYOW (Bring Your Own Whatever-is-Next)!

## **Mobile Engagement for the Enterprise: More than just Marketing**

By Jay Emmet, General Manager, OpenMarket

The mobile messaging ecosystem is well established—though hardly mature, as new capabilities and technologies continue to evolve. As we move into 2013, enterprise awareness will continue to grow around both marketing and operational use cases. eMarketer reports that over 55 percent of major enterprises today are not using mobile in any way, but nearly half of those are committed to doing so in the next year. This means that companies will be looking for new ways to augment their existing communications systems and complement their business strategies.

Because mobile is the most reliable notification channel for delivering critical information to devices that are always on, many organizations will seek an integrated messaging solution to determine the best way to address how users

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interact with their devices and consume mobile content. Since approximately half of mobile users own feature phones, SMS and MMS messaging will continue to be a key consideration in the development of mobile initiatives and campaigns. The explosion of smartphones and tablets will unlock new messaging channels like push notifications which directly connect users with their apps.

As a result, multi-channel mobile engagement will serve as a catalyst for smarter communication through technology that is more intuitive, personal and relevant. Traditional technology providers will evolve their services to ensure reliability, security and quality of services to open up new revenue streams. At the same time, users will benefit from a better experience and information flow.

### **A More Tightly-Knit Ecosystem Ahead**

Cathal McGloin, CEO, FeedHenry.

Looking ahead to 2013, I see the number of partnerships between wireless operators, cloud technology providers and mobile application platform vendors increasing as operators continue to look for new mobile offerings and extend their cloud services. I also see greater adoption of more complex mobile app solutions by businesses in tandem with the need for greater app security and management. This will drive the need for a full app lifecycle approach supported by next generation cloud platforms that support mobile app development, deployment, security, integration and management - operators are well positioned to offer these solutions to their business clients.

The wireless industry continues to be disrupted by mobile devices and the cloud, forcing operators to look for new services and change the way they do business. Increasingly workers are using personal mobile devices in the workplace, driving demand for mobile application platforms to develop, deploy, and support mobile apps for business. Cloud-based mobile application platforms are fast becoming the next generation of the traditional Mobile Enterprise Application Platform (MEAP). We predict that mobile operators will increasingly move to offer their business clients strategic mobile solutions via SaaS delivery models. Not only will these solutions be more affordable and scalable but they will also be easier to sell and create value.”

### **Automobiles to Drive M2M Growth**

Olivier Beaujard, Vice President, Marketing Development, Sierra Wireless

In 2013, M2M growth will continue in all vertical markets, but most significantly in the automobile sector. Expansion is being driven by customer demand for in-car connectivity coupled with the eCall standard in Europe → a requirement that new vehicles be enabled to make emergency calls and share accident or major incident

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data by 2015.

Vehicle safety regulations and consumer expectations for uninterrupted connectivity will increase the demand for a variety of services, such as vehicle assistance services, location-aware applications, and infotainment, leading automobile manufacturers to incorporate wireless communications into most models. Manufacturers will seek out reliable wireless connectivity to cellular networks, while also looking for wireless technology solutions that minimize total cost of ownership, from production to customer service.

New wireless innovations are enabling applications such as:

- Emergency Call (eCall)
- Navigation and driver assistance
- In-Vehicle Internet & Entertainment
- Remote Diagnostics
- Stolen Vehicle Tracking and Recovery

The connected car is really about employing technology to enhance driver convenience, safety, security, and real-time monitoring of vehicle performance.

For example, Peugeot Citroen drivers now have a 3G USB key that powers its Connect Apps system. The key incorporates 3G wireless connectivity, GPS positioning and advance processing capabilities and enables touch-screen access to the Peugeot Connect Apps service, operated by Bouygues Telecom. Drivers access real-time traffic, weather and navigation information, as well as details about parking, fuel stations, hotels, restaurants, tourist attractions and other services.

Other examples, are Chrysler's 2013 Ram 1500 pickup and the SRT Viper supercar that use the Uconnect Access platform to provide a variety of in-vehicle services, including voice-activated navigation, location-based services and an integrated WiFi hotspot. Owners can choose and update applications over-the-air using the platform's 3G connection, further demonstrating the value of a well-designed connectivity solution for drivers and passengers alike.

## Spectrum Crunch and Consolidation

Josh Reed, Software Engineer and Principal MapELEMENTS Developer, Mosaik Solutions

The industry has been inundated with the term "spectrum crunch" because of the bandwidth requirements for keeping up with the demand for mobile data. While this is an issue, the spectrum crunch will not be a detrimentally defining factor for large

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operators in 2013. The Big Four have outwardly communicated confidence in their individual spectrum positions for the next several years. However, the spectrum crunch will pose a challenge for the smaller, more regional operators. Building out and upgrading a wireless network to handle the bandwidth needs for today and tomorrow is not a small task, especially for smaller operators. This will lead to some of them shopping around to be acquired, or perhaps building more solidified partnerships with the large national carriers, which is where 2013 will get interesting for the Big Four.

Consolidation will be a strong theme in 2013, however, this will not necessarily be an easy task. The FCC has made it clear that any merger or acquisition will be a tough road, even if the consolidation is with a smaller regional carrier. Therefore, any merger or acquisition deals will have to be carefully selected to provide the most value without “rocking the regulatory boat” too much. Operators will need a thorough understanding of the network, whether it is the demographic makeup of its target’s current holdings or the depth of spectrum for not only their targets, but themselves as well. This will be a key factor in avoiding regulatory risks associated with consolidation. As a result, the spectrum crunch will make access to geospatial network intelligence more important than ever for executives and decision makers to make informed business decisions in 2013.

### Mobile Botnets and DDoS Attacks Will Increase in 2013

Thomas Bienkowski, Director of Product Marketing, Arbor Networks

Arbor Networks has been researching Internet threat activity and delivering DDoS attack mitigation solutions for over a decade. Our research has shown a dramatic increase in the size, frequency and complexity of DDoS attacks within the “wired” Internet. However, Arbor predicts that as the Internet becomes more mobile, the “wireless” Internet will quickly become the new threat landscape for miscreants and malicious network activity—namely a rise in mobile malware, mobile botnets and DDoS attacks that will impact mobile network infrastructure and services. Below are some “wired” Internet trends that Arbor is observing again on the “wireless” Internet.

**Windows PC to Android Smart Devices:** In the past, when Microsoft OS based PCs started dominating the wired Internet, they soon became the prime targets for malicious activity, which resulted in malware infections and unknowing participation in botnets for SPAM or DDoS attacks. As smart mobile devices with open Android operating systems and uncontrollable, insecure “mobile apps” start to dominate the wireless Internet, they too will soon become the prime targets for mobile malware, and sources for mobile botnets and DDoS attacks.

**Network Security Teams Lack of Focus on DDoS:** According to Arbor customer interviews and sponsored industry analyst surveys, most mobile network security teams are not focused on DDoS attack protection. Instead, they are focused on

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deploying basic security such as IPSec, AAA etc., are unaware of the DDoS threat; or like their “wired” brethren, naively believe firewalls and IPS will stop DDoS attacks.

**DDoS Attack Upward Trend:** For the last 10 years Arbor’s Worldwide Infrastructure Security Report has shown a consistent rise in the size, frequency and complexity of DDoS attacks. Arbor has also seen a similar trend in the rise of attacks against mobile networks over the past two years. Today, most DDoS attacks against the mobile network originate from the “wired” Internet and target mobile infrastructure devices and services running in mobile data centers. However, there is a slow upward trend of DDoS attacks originating from the mobile devices. It begs the question...will history repeat itself? Arbor believes it will. But this time mobile network operators can prepare themselves with dedicated Intelligent DDoS Mitigations Systems.

### Small Cells Will Be Big, but It's Complicated

Erik Boch, Chief Technology Officer, DragonWave

Small cell devices and architectures will continue to evolve as widespread LTE deployments increase in 2013 and metro LTE small cell deployments are initiated. As small cells take hold, networks will need to be deployed and managed differently to achieve the scalability necessary to cope with the number of base stations inherent to these architectures.

In 2013, expect mobile network operators to continue to respond to the escalation in network capacity demand by shifting to 3G and 4G RAN technologies, moving to all-IP/Ethernet connectivity for backhaul and core networking, and utilizing “small cell” network topologies, such as indoor nano/pico-cellular and outdoor micro-cellular constructs.

Mobile backhaul solutions will continue to be focused on cell towers, but initial deployments of small cells will also gain ground. Many operators have plans to first build-out existing macro-cellular sites, followed by deployments of underlying small/micro-cellular networks. Once the macro-cellular layer is fully optimized, operators will have a clearer picture of capacity demand to drive investment in micro-cellular underlays.

Already, the biggest development in cellular backhaul wireless technology has been the availability of gigabit radio technology. Although 60 GHz and 70/80 GHz can achieve these data rates, the technology advances needed to achieve Gigabit throughputs across Common Carrier microwave are recent. Utilizing 2048 QAM in conjunction with bulk data compression now enables the Gigabit rates that make wireless backhaul on par with low-cost Gigabit fiber-optic backhaul.

It’s clear 2013 will be a pivotal year with a number of initial small cell deployments. That said, the most significant growth in small cell networks will take place in 2014 and continue out to 2016 and beyond. What’s most important for carriers is

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choosing micro-cellular solutions and network design methodologies that provide the scalability and network performance needed to meet capacity demands and ensure reliable service delivery.

### **A Renewed Focus on Delivering Connectivity to the Office**

Mads Lillelund, General Manager for ADTRAN's Bluesocket Business Division

In 2013 we'll see service providers make aggressive business-model shifts as they look to innovate and thrive in the wireless ecosystem. These innovators will be forced to rethink their approaches to Wi-Fi services delivery or else concede to the competition.

While some carriers will have the luxury and resources to remain focused on large Wi-Fi deployments in stadiums, municipalities and the like, other service providers will take advantage of sophisticated cloud-hosted and managed-services platforms in order to gain opportunity in addressable markets—most notably in the office Wi-Fi environment.

Businesses today are already struggling to accommodate an explosion of mobile traffic, and 2013 won't bring any relief. The office environment needs to be ready to go all wireless, ASAP. Employees don't expect to be tied down by wires—they are constantly on the move, each bringing with them multiple wireless devices that require greater coverage, higher throughput and wider mobility.

Addressing these challenges becomes even harder when faced with hardware-based legacy wireless LANs (WLANs), where scaling means adding more expensive and cumbersome controllers. By virtualizing the WLAN, control and management is centralized onto software that runs on a hypervisor in the cloud, and scaling simply means adding access points where additional reach is needed.

By offering businesses cloud-hosted or managed Wi-Fi services, service providers will relieve them of the hassle of network management and maintenance, but also deliver advanced security, increased performance and outstanding reliability so the customer can focus on its core business objectives instead of how its network is functioning. In turn, the service provider creates new revenue-generating service offerings and realizes unsurpassed scalability, infrastructure efficiency and significant savings in CAPEX/OPEX.

As 2012 comes to a close, we're already seeing service providers, large and small, put millions of dollars into Wi-Fi network builds. In 2013, we can expect to see these providers' efforts expand to a wider marketplace and deliver broader service offerings. For the customer, this means there is a better way to efficiently tackle the unrelenting need for more mobility in the office, and your local service provider will be to the rescue soon (if not already).



### **Ecosystem, Service and Lifecycle**

Lorcan Sheehan, Senior Vice President of Marketing, ModusLink Global Solutions

As the holiday season nears, the product launch cycle of the next new things is coming to an end. We are now tempted by a range of faster, thinner, lighter and brighter devices and of course they have bigger screens. However, with mature markets reaching a saturation point, stimulating demand for new devices has to extend beyond the simple creation of desire for the latest products and the industry must look at emerging customer expectations.

Today's targeted device replacement cycles are considerably shorter than the products' useful lives, therefore providing consumers with a user-friendly mechanism to realize the value of their old products is an important part of financing new device sales. Trade-in programs are here to stay, but delivering true value to the market requires reliable refurbishment, data wiping and greater assurance to the customers of refurbished devices.

As functionality has increased, the customer experience extends beyond the physical hardware to include an ecosystem of software, content and applications. Consumers expect synchronized mobile, tablet, traditional computing and gaming experiences, as well as integration between business and social environments. As if on cue, the rise of cloud-based solutions helps achieve that synchronization and also provides protection for the increasing value of content on the devices.

Finally, with new devices costing up to \$700 USD without a carrier subsidy, the issue of repair must be addressed. Out-of-warranty issues such as cracked screens or devices dropped in water may not be the fault of manufacturers, but loyal consumers will expect more than a "not our problem" response from leading brands. An important extension to service and repair programs will be an easily accessible out-of-warranty service.

Today's devices are tools for photos, video, email, social, mapping, gaming and yes, they can even make phone calls. Consumers buying the latest devices expect more than just the initial thrill of a shiny new package. It's up to manufacturers, carriers and their reverse logistics partners to work together to manage the expanding ecosystem and address the increasing service expectations that come along with that yearly purchase.

### **Carrier's Will Pull Back Key Services**

Suzanne Rosato, Vice President, Tangoe

**Carriers will "pull back" key services, sparking a shift in demand for 4G wireless and other services:** Initially the carriers were attempting to influence enterprise clients' behavior through manipulation of pricing, making the "legacy

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technologies,” such as frame relay, more expensive to incent migration to MPLS, etc. But more recently the carriers have been putting language in their agreements that would allow them to discontinue these legacy services. The FCC still has to weigh in on this tactic, and they are entertaining a petition from VzB currently, but any time an agreement is “opened for negotiations” the providers are going to be looking to insert language to sunset these services or at the very least increase their legacy prices. The current list of services targeted includes frame relay, private line services that are low speed (below T1.5) and access below T1.5. Tangoe predicts that the list will expand to include higher speed private line services, dial up services, and IP VPN services, which will lead to a shift in the demand for alternative services such as 4G wireless.

**The cost of MPLS services will skyrocket for enterprises:** Ninety nine percent of enterprise clients buying MPLS services from AT&T, VzB, or Sprint will be at risk of having their costs for WAN services increase by as much as 17 percent without any contractual or service changes. By now, most people are familiar with the onerous Universal Service Fund (USF) fees that have been as high as 17.9 percent and are currently assessed at 17.4 percent. You may even understand that the providers are allowed to pass these charges through, but not required to do so. At this time, AT&T, VzB, and Sprint are all assessed for USF on MPLS services. In other words, they pay the fee based on their MPLS revenues. However, none of them are passing these costs on to enterprise clients today. But that could change tomorrow, and the migration from TDM services to SIP services will translate to the providers collecting less revenue for USF from enterprise clients. It is just a matter of time before one of the major carriers makes the move to assess MPLS services and the others will quickly follow. All provider agreements contain language allowing them to make adjustments such as the inclusion of MPLS assessments at any time. Tangoe feels the time for changes in MPLS assessment is drawing near.

## Competitive and Challenging 2013 for Mobile Industry

Bengt Nordström, CEO, Northstream

### **Advent of Device sector dominance to impact evolution of mobile industry**

**R&D:** The rise of smartphones is placing the industry on a path to Apple and Samsung achieving enough market power to drive and finance a bigger portion of industry innovation, R&D and standardization efforts. This could result in a lack of open standards, interoperability issues and a smaller amount of harmonized solutions. Operators and infrastructure vendors need to watch out.

### **Regulators to allow increased operator consolidation - and save LTE in**

**Europe:** Northstream expects European regulators to increasingly accept operator consolidation and network sharing in 2013 in order to better facilitate market dynamics, and growth, for both larger and smaller players. This will be the catalyst to revitalize the European market, boost network investments moving forward and allow regained competitiveness and sustainability

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**The ‘small cell debate’ is ended by LTE roll-out (with some support from WiFi):** Northstream predicts that operators deploying LTE will be less reliant on small cells than their 3G deployments. Spectrum allocated to LTE is a combination of sub 1GHz (700 or 800MHz) and higher bands that enables better delivery of mobile broadband indoors. However, operators will turn to WiFi to fill gaps in coverage for in-building heavy traffic generators such as tablets and data modems.

**Managed Services is dead, long live Managed Services:** Outsourcing and Managed Services have long been focused around direct OPEX savings. Northstream believes this will radically change and forecasts that operators and vendors will better define business models and operational processes in 2013 that promote vendors to actively address operator network OPEX as a whole. This includes legacy cost structures and maintaining (or improving) network quality and customer experience.

**Microsoft takes the lead for new generation operators:** Microsoft has leveraged its large enterprise footprint, and Windows and Office software with VoIP and collaboration solutions into a UC solution. Soon Microsoft will add mobile VoIP capabilities and attack the enterprise communications market – one of the last mobile operator strongholds. This could reduce operators to simply enterprise data connectivity providers. Microsoft, and fellow IT players, will pose serious challenge to the offerings of operators. In 2013 we’ll see varying degrees of responses from operators as they try to cling to power and relationships with enterprise customers.

## Some Considerations for Developers in the New Year

Eran Yaniv, CEO, Perfecto Mobile

The year of the truly mobile cloud: The mobile app market is growing exponentially and becoming very difficult to manage. As such, it requires governance and security that only a truly mobile cloud environment can provide. As IT departments look for a solution to fit their needs, large enterprises are looking into managed, secured and robust mobile cloud solutions to enable offshoring, allow for real device governance and increase efficiency.

Enterprises will embrace the role of Chief Mobility Officer: With this rise in mobility, serious mobile projects will surface for the first time and enterprises will be looking for someone to not only manage these projects but also bridge the gap between the business strategy and IT. As a result, a new role will emerge: chief mobility officer (CMoO).

Developers will move from App Testing to App Monitoring: Historically, apps were tested and updated once a year. However, with the ability to test and issue updates in real-time, developers are working around the clock to keep up with the competition. Moving away from traditional testing and more into mobile app monitoring will provide developers with visibility and control over the entire user experience.

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Web Interfaces will increase in importance: According to IBM, more than 18 percent of shoppers used a mobile device to access a retailer's website, an increase of 70 percent over 2011. This is a trend that will only continue to rise. As a result, it's increasingly important to have a web interface. Consumers will not install hundreds of applications from all their favorite retailers, they will want to use a web interface to streamline the process while still getting products from their favorite brands.

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