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Cover Story

SPRINT Puts its M2M Pedal to the Metal

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Think Different

Ouch! In a recent and highly-watched court case, a jury this summer ruled in Apple's favor, ordering Samsung to pay more than $1 billion in penalties, and prompting Samsung and other iPad and iPhone copycat creators to rethink their strategies on how to challenge the iconic devices.

That the jury decided Samsung Galaxy products infringed on Apple's intellectual property really shouldn't come as a surprise. Just look at the rounded-corner shape of the Samsung phones, the way the products' touch screens work, and the general look and feel of these devices. They are, to say the least, Apple-esque.

Of course, Samsung will probably appeal the ruling, and the arguments will continue. But a better long-term strategy might be for the company and fellow copycats to figure out something even better to bring to market.

But sometimes, when a person or a company does something with such great success, it can be difficult to think about that thing in any other way. As most teenagers – and even adults – exemplify, the quickest and easiest route to acceptance is to do what the other guy is doing, look the way the other girl looks, and listen to the music the other kid listens to (even if that means listening to the musical stylings of The Cheetah Girls or One Direction).

It's the rare person, indeed, who opts to learn the accordion or banjolele rather than the violin or flute, gets a pixie cut while the other girls wear long hair, or otherwise does or makes something completely different while others follow the crowd.

It's worth noting that people and companies can cast out in new directions in the quest for greatness and individuality. This is not the easiest or safest route, but it can yield the greatest return in terms of both profits and satisfaction. Just look at the late great Steve Jobs.

Jason Perlow, senior technology editor at ZDNet, in a recent article talks about how Samsung and the other touch-screen smartphone and tablet outfits need what is referred to as trade dress. That is, he explains, a distinctive feature or design that at first glance makes it clear that the product in question is their own. And he offers as an example the curvy shape of the classic Coca-Cola bottle.

Something as simple as the shape of a hunk of glass can make a company unique through the ages. Miraculous!

Meanwhile, Carl Ford of Crossfire Media, a TMC partner, suggests that Samsung "flank" Apple and other competitors not just with phones, but with networked devices of all kinds. "Every device you make should have a web client API going forward," Ford writes. "Stay the course with Google, but make the social networking side of Google more important than Android. Of course bring the Chrome browser into everything. If you want, you can bring WebRTC into the mix (ask Google, they know what they are doing there), or just enable the browser interface to touch everything."

At the end of the day, Ford concludes, Samsung's goal should be to takes its HD home-screen TV and make it the only device consumers require. "You have already turned them into computers offering Skype and online connectivity," he adds, "now we are going to push that ability. In other words, make the TV the center of the universe."

Still, at a large company like Samsung especially, charging out in a new direction can be a hard sell and set a company up for greater risk than simply following the crowd. But when there's true innovation, commitment and a great customer experience that results, it can create terrific value for that company and the world both in the near and the long term.

So, as Apple itself urged us all to do early on, Samsung and other copycats should be encouraged to Think Different.

How Fast is Fast Enough?

There is controversy surrounding who, if anyone, said 640k of memory is all anyone would ever need. Many in the press attributed the comment to Bill Gates, but he denies he ever made such a statement. But it's the concept that is more important to me than who uttered it first or at all.

For those of us in tech, the answer to the question, "What is fast enough?" will always be nothing, at least if history is any guide – and it always is.

Consumers will never be satisfied. They will always want more.

They will buy more devices with greater resolutions and request more and more bandwidth.

There are myriad reasons why speed counts, and perhaps the most important is speed = revenue. A 400 ms delay on the web translates into a .44 percentage drop in search volume, for example. To put this in perspective – most of Google's revenue comes from ads displayed on search pages, and last quarter alone the company company generated $12.21 billion! It just so happens that .44 percent of this amount is over $50 million.

But these results aren't just applicable to the world's largest search engine. Gary Kim points out the following related examples:
When Edmunds redesigned its insideline.com site to reduce load times from nine seconds to 1.4 seconds, ad revenue increased 3 percent, and page views-per-session went up 17 percent.

When Shopzilla dropped latency from seven seconds to two, revenue went up 7-12 percent and page views jumped 25 percent. Shopzilla also reduced its hardware costs by 50 percent.

The great news is speed can and will be monetized as consumers want it and companies providing service generate more revenue when consumers spend less time waiting.

Fast broadband is good, and it is being offered everywhere. Consider, Verizon is charging $205 per month for 300mbps. Comcast will match that speed for the same amount of money and raise it 5mbps for a total of 305mbps.

To add just a bit of pressure, Google now has its new free 5mbps service available in Kansas City with an available upgrade to a whopping 1gbps for just $70 per month. The question is: How can the company pull this off if it costs between $2,500 to $8,000 to deploy fiber to each home?

The point here is there is pressure from every direction to speed up the Internet and at the end of the day, everyone not only wants faster connections but will pay more for them.

While this is a straightforward argument, the unknown in this equation is what Google will be doing in the future with regards to broadband expansion. The company has not shied away from becoming a green energy company, a hardware company courtesy of Motorola Mobility, a maker of self-driving cars and more. Will they want to be a nationwide or even global provider of broadband and, if so, will their low pricing destroy the margins enjoyed by other players in the market?

Moreover, what about mobile? How will we satiate the consumer demand for mobile broadband when people are used to speeds in the hundreds of mbps at home?

These last questions need some time to be worked out, but for carriers and companies providing broadband access the one lesson we should keep in mind is you can never provide enough speed. The question we still need to ponder is how deep into their pockets Google is willing to reach to disrupt the broadband market.

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On The Cover

Sprint Puts its M2M Pedal to the Metal

Among the challenges facing the M2M market is the need to overcome technology fragmentation to achieve global M2M coverage. With a demonstrated passion for innovation and an underlying mobile network that delivers nationwide coverage in the United States – including its legacy 3G network and its next generation 4G LTE network, on track to turn up 12,000 sites this year and 250 million POPs by the end of 2013 – and the ability to provide access to wireless data service in 165 countries around the world, Sprint has taken a leadership role in driving the M2M market.

[For more on this story, visit page 8.]

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AT THE SPEED OF IDEAS™

Sprint Puts its M2M Pedal to the Metal

by Erik Linask

The world is becoming more connected every day, with mobile technology enhancing the way we live, improving the way we work, and creating new ways for us to be entertained. Since Motorola's StarTAC first hit the streets back in 1996, the wireless industry has seen a level of innovation and evolution second to none, and one which is nothing short of awe-inspiring. Each year, new network technologies, new devices, and new applications help drive a new wave of users and user experiences that extend well beyond the basic wireless telephony, connecting people, devices, and systems in new ways.

The latest trends, in fact, focus less on voice conversations – and even not necessarily on person-to-person communication, and more on machine-to-machine – the automatic communications between devices without human intervention to drive new efficiencies, economics, and experiences. M2M is about leveraging network infrastructure to transform the way people, devices, and systems interact to deliver enhanced user experiences on the one hand, and create new revenue opportunities on the other.

Recent research from Strategy Analytics predicts staggering growth in the M2M market, with cellular M2M connections increasing to 2.5 billion by 2020, from 277 million today, driven by a combination of better connectivity platforms, standardization, cloud computing, and regulatory initiatives.

Among the challenges facing the M2M market is the need to overcome technology fragmentation to achieve global M2M coverage. With a demonstrated passion for innovation and an underlying mobile network that delivers nationwide coverage

Chrysler has announced the Viper and RAM 1500 truck as the first two new Uconnect-enabled vehicles this fall.

in the United States – including its legacy 3G network and its next generation 4G LTE network, on track to turn up 12,000 sites this year and 250 million POPs by the end of 2013 – and the ability to provide access to wireless data service in 165 countries around the world, Sprint has taken a leadership role in driving the M2M market.

Sprint's existing M2M portfolio includes solutions for a large variety of industries, including insurance (see sidebar), asset tracking, digital signage, telematics, health care, manufacturing and logistics, retail, public safety, remote monitoring and control, security, and smart grid. It also is very quickly making inroads in the automotive industry, which is among the greatest opportunities to leverage consumer demands for ubiquitous connectivity to both enhance their experiences and create new revenue streams.

"We are all out there trying to find new growth areas and what's interesting is that, as mobile has become an integral part of how people organize and manage their lives, it is opening up an opportunity for Sprint to look at fertile ground and to extend our innovative wireless technology into other industries," explains Matt Carter, president of Sprint Wholesale & Emerging Solutions, which includes the carrier's M2M solutions. "It is just a natural, organic extension of what we do."

Sprint's latest venture in M2M, through its partnership with Chrysler Group, is focused squarely on driving a new set of connected in-car experiences through an enhanced Uconnect platform – Uconnect is the Chrysler technology brand that represents all the communications, entertainment, navigation, and telematics experiences consumers have in vehicles.

The connected vehicle market represents a massive opportunity, as operators, automakers, and technology vendors collectively look at the new types of experiences users are starting to demand and the different ways they want to interact with devices and networks in their vehicles. It opens up a world of opportunity as the M2M ecosystem seeks to deliver on those expectations.

"The car is another device," explains Carter. "It is a very important device in people's lives but, nonetheless, it's another device, and it allows us the opportunity to extend what we know about devices and how to create the right customer experiences and how to bring the right ecosystems together to create those experiences and enable people to do the things to manage their lives."

The connected vehicle market creates something of a hybrid technology, combining people-to-people and machine-to-ma-

How Sprint is Leveraging M2M for the Insurance Industry

By Richard Steeves

While there are several providers touting insurance solutions, Sprint is taking the concept of usage-based insurance to the next level with its offerings. Sprint offers Integrated Insurance Solutions, a complete UBI product that is easy for insurance providers to deploy. By working with best-in-class partners to provide devices, software applications and support, Integrated Insurance Solutions can enable companies to offer a seamless experience to provide benefits to both companies and policy holders. Among the facets of the Sprint offering are driver analytics and scoring, predictive risk analysis, vehicle location, fuel usage amounts, distracted driver alerts and more.

George Kandt, M2M marketing manager at Sprint, said the UBI product will help insurance companies with assessment and profitability, reduce claims, attract and retain higher quality customers, help with fraud prevention, and more. He also highlighted some of the benefits to policy holders, noting that they will save money, reduce fuel costs, improve driver safety, and even gain the ability to locate family members when necessary.

The solution starts with a physical, plug-and-play device, the data from which is delivered over Sprint's network to a scoring or application portal. One portal allows the insurance company to get a clear picture of driving habits, but another allows the policyholders to see their own information to help them make better-informed decisions. The Sprint solution also includes operations and logistics elements and support services.

One of the most exciting aspects of the Sprint offering is its trial program. To prove that the UBI solution is easy to use, efficient and effective, Sprint is making an unprecedented trial period available, through which interested insurance providers can use the plug-and-play devices for their own agents' vehicles. These agents will have access to the agent and policy holder portals, so they can see firsthand how the information will give companies a better picture of their drivers and allow them to better assess drivers, reduce claims and eliminate fraud. At the same time, the agents will see the solution from a driver's point of view, noting how they can get information on fuel usage, track teenage drivers and avail themselves of the other highlights of the user portal. The three-month trial is an easy way to see the ROI that UBI will provide without a huge investment or hidden fees.

Richard Steeves is a web editor for TMCnet, the online entity of Next Gen Mobility parent company Technology Marketing Corp.

chine, to create a machine-to-machine-to-people environment, where users have the ability to leverage M2M to connect to their communications and entertainment services from their vehicles.

"Within the M2M industry, automotive represents the largest segment – connecting things to things that communicate with each other," notes Marios Zenios, head of Connectivity and Infotainment at Chrysler Group LLC. "The only difference here is we have a consumer sitting in the thing we are connecting, and that's what makes it interesting."

Chrysler has announced the RAM 1500 truck and Viper as the first two new Uconnect-enabled vehicles this fall. Both will integrate connected services including emergency services and customer service via integrated communications buttons in the rear-view mirror, voice recognition technology for hands-free calling, music, texting, and navigation, as well as integrated Wi-Fi hotspots and remote services, which will effectively turn owners' smartphones into remote controls for locking/unlocking/starting the vehicles, flashing lights, and activating the horn.

The underlying network connectivity will be delivered by Sprint, which will handle all data transport and management outside the vehicle, working seamlessly with onboard radios and entertainment, navigation, and telematics systems. Additional features and applications will be developed and rolled out over time, including streaming video capabilities for rear-seat entertainment systems that will leverage Sprint's 4G LTE network.

Sprint's role in this relationship extends far beyond network connectivity and data transport, to the role of systems integrator to ensure seamless integration between the network, on-board hardware, applications and services, and user devices. That's where Sprint's experience in network management and service delivery will become critical, ensuring the Uconnect service lives up to its billing as the next generation in-vehicle experience.

Fundamentally, the in-vehicle connected experience draws from the strategies the wireless industry has developed over the years, combining it with M2M technologies, to create what amounts to a larger, faster-moving smartphone.

"Sprint has developed the capabilities we need to implement in the automotive arena to enable these systems to work seamlessly between the devices and the network, just like the wireless industry has done in the smartphone arena," says Zenios. "That's the primary reason we have chosen Sprint as a partner – they know how to do that."

For Sprint, the connected vehicle space is not a venture into a completely new arena; rather, it is a logical extension of its wireless and M2M expertise and an extension of its wireless technologies to create enhanced user experiences. It is the next phase in the anywhere, anytime, always-connected mantra that has been heralded by the communications market for years.

The argument has often been made that network operators face a challenge in turning their networks into revenue opportunities and avoiding becoming merely dumb pipes. The connected vehicle market – and the M2M space as a whole – represents a very real and massive opportunity for Sprint to leverage its network investment to create a pipeline of added services, positioning itself not only as an integrator and network partner for vendors like Chrysler, but also increasing its value as a service provider to end users. It also positions Sprint well, as it, along with its ecosystem partners, looks toward the future needs and evolving demands of customers in a connected environment.

"Strategic partnerships elevate wireless enablement beyond the network alone. Sprint is delivering an expanded core competency as an end-to-end systems integrator," says Carter. "This is critically important to us as a company."

Through its M2M Collaboration Center in California, Sprint is building on its history of welcoming third-party vendors into its technology ecosystem to develop new applications and services and to ensure compatibility of non-Sprint devices on its networks in the interest of creating the best possible user experience for the broadest possible user base. Creating that highly desirable and highly reliable experience is critical to the success of M2M services, considering the lifespan of embedded devices and the cost and difficulty in changing them.

Figuring out the cost model is going to be critical. Operators have to be able to monetize these services that are running on their networks, but at a level that will not turn off subscribers. That means, for Sprint, creating bundled offerings that include in-vehicle services for existing subscribers and, alternatively, a price point low enough to draw new business from non-Sprint subscribers, turning them into customers, delivering a first-rate experience, creating brand loyalty and, ideally, turning them into exclusively Sprint customers.

While technology is the driver, Carter and Zenios are keenly aware that texting while driving is already a major issue and adding additional connectivity to vehicles in motion must be done in a way that not only promotes responsible driving, but goes even further to simplify in-car technology experiences while enhancing them, to eliminate risk.

"All of this needs to be done under the delicate balance of responsible driving," explains Carter. "At the end of the day, we are really about creating responsible driving and really addressing a problem that is out there in the marketplace in terms of driving and texting. That means focusing on what are the right experiences we need to create inside the vehicle."

Machine-to-machine (M2M) technology is interconnecting our world in incredible ways. Digital signage, energy grids, medical equipment, vehicles and factories — they're all being linked together in a massive communication system that has staggering potential. At Sprint, we're a leader in the charge to power this connected world by bringing you the first wireless 4G network from a national carrier. Plus, we offer an incredibly reliable Nationwide Sprint Network built for data. With our open networks, open standards, over a decade of M2M expertise and teams that thrive on open ideation, there's no limit to what we can help our partners accomplish.

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Nationwide Sprint Network reaches over 278 million people. First 4G claim: Sprint 4G network reaches over 70 markets and counting, on select devices. See sprint.com/4G for details.

Video Remote 2.0: What the Major Vendors are Seeing

by Carl Ford

Last year we had a great user design exercise at one of our events where we took a TV remote and tried to redesign it. It was amazing how many buttons and features the device was trying to manage. It occurs to me that the move to manage TV on the smartphone has the benefit of just bypassing the remote.

The reason we have remote 2.0 is because we are experiencing couch potato 2.0 as well. No matter how big the TV in the house, end users at some point expect to view something in their pocket. Look at the fact that NBC has done the remarkable thing of broadcasting all of the Olympics and still gotten grief over the delivery of its coverage.

Ericsson in its recent market study found that mobility's attributes of time and convenience are changing our habits again. For example, peer-to-peer/file-sharing video solutions are being impacted by video-on-demand solutions that meet the customer's goals. It also found that the primary impact of consumers shifting from the TV to any device is in our use of broadcast TV. We are getting our content from secondary suppliers rather than by the networks and their affiliates. The reluctance to change for the broadcast operators has yielded opportunities, but it's not clear that the business models are completely understood yet.

For example, the major vendors such as Cisco, Ericsson and Motorola own set-top box solutions, but find that consumers are more interested in using their mobile devices to manage the remote functions and in most cases push content from the Internet directly. So end users are watching at home and on the road via their smartphones.

Now consider the markets that are converging.

On the content side, the networks are still king with good programming, but consumers are also likely to want to produce their modern day carousel of video, and push it to their friends, and gather user-generated content from other sources. So, overall, the content kings are losing a portion of the time but not the audience.

On the delivery side, it breaks down into a number of problems. Until the Verizon/Cable Spectrum Co. deal, it looked like the duopoly was alive and well, but now it's clear that cable, telco and satellite are not going to find a break out strategy. Services like Hulu and NetFlix may be targets for acquisition as these delivery companies contemplate how to manage the mobile remote.

That brings us back to devices that show the diversity of everything from Lionsgate's closed network set-tops to remote control apps on your smartphone. What do all these devices indicate? They indicate that the diversity of viewer requirements is greater than the existing content. It's also going to give us a need for context.

But if content is king, then context is queen.

When looking at YouTube, a vast array of people leave comments, and then there are the people embedding video into whatever social text they happen to belong to. (A pet peeve of mine is sometimes they do this without any regard to context).

However, we are in a new age of audience participation, and whether it happens in real time or asynchronously people are going to share their views ;<). For example in the Ericsson study the mobile phone was being used in a Twitter discussion of the lame show a bunch of friends were watching simultaneously and remotely. Contemplate the complexity of people wanting to share in common while at the same time doing it in their own time. That is what video remote 2.0 is all about.

We are in a new age of audience participation, and whether it happens in real time or asynchronously people are going to share their views.

Whether it takes advantage of context using WebRTC represents a community of interest strategy like USA network has been building with its primetime shows like Burn Notice, Covert Affairs, Suits and White Collar, the reality is the ability to broadcast has gotten easier while connecting everything in a timely manner has gotten harder.

Who will be the top dog in this video world is hard for me to say, but I expect it will be the socially engaged that lead the pack.

Carl Ford is co-founder of Crossfire Media (www.crossfire.com).

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Service Agility: It's Not a Single Magic Bullet

by Grant Lenahan

There is much talk about service agility in the industry. Some say that over-the-top companies will win the service wars due to their agility. This implies that our industry can't be agile. Others take the approach that we must become agile to innovate, compete among ourselves, and compete with other industry forces.

Let's start from the position that regardless of how the industry plays out, if we are more agile and more cost effective in our innovation, we will perform more competitively. Maybe we'll gain market share. Maybe we'll retain a larger proportion of end-to-end services. Or, maybe we'll be agile partners of web-based companies with complementary skills.

But, one way or the other, I'd like to talk about how we achieve agility. Agility, in my definition, means that a service provider can develop a service (relatively) quickly and cheaply compared to traditional methods. It stands to reason that this is driven by shorter development cycles, more personalization, more media and service types, more competition. In other words, we plan to – and we must – develop more services and service permutations.

Most industries transitioned away from custom manufacturing to interchangeable parts ages ago. More recently they moved to flexible manufacturing, also known as mass customization. This approach defines common processes; standard components; clear assembly rules and dependencies; and then allows for variation within that construct.

Let's think about that because, as simple as it sounds, it changes fundamental assumptions that have driven the industry's methods, thinking, economics and gut feel for decades. If you develop relatively few services – and management support for relatively few services – it is like building aircraft carriers. You have to build them one at a time, each an individual engineering and manufacturing effort. There is no long production run of similar vehicles to divide fixed costs over, so you optimize your process for low volumes of semi-custom manufacturing – or, in our case, semi-custom workflows. If we now truly believe that the number of services will rise, we must re-think our divide by assumptions and the resulting economic lore. Efficient development platforms do cost money, as do automated factories. But they also give tremendous competitive cost advantages to their owners – if you make more than a few widgets.

Too many approaches to agility appear to involve a single magic bullet. Buy this sequencing engine and your problems will vanish. Buy this overlap activation system and life will be good (and agile). Unfortunately, these are at best pieces of the solution, and at worst, band-aids that kick the can down the road, only to become worse problems in a few years.

Here are a few salient points we've discovered.

- Not only must you be able to create a service (e.g. on a SIP server or in an SDP environment), but you must be able to generate fulfillment, assurance and changing support just as efficiently.
- Rip and replace remains a costly, slow, impractical and unpopular idea.
- Flexibility and complexity remain trade-offs, and CSPs must make strategic decisions as to the level of granularity – and thus flexibility – that is optimal.
- Theory is nice, but practical solutions reduce risk and implementation time immensely.

Before I close, let's think about the many financial and competitive benefits a component-oriented, agile, service-OSS-BSS-SDP environment can deliver, because it extends beyond agility.

- Yes, it's agile. Services can be turned up and scaled faster – giving time to market, competitive response and micro-segmentation benefits.
- But also, the cost-per-service is lower – allowing more innovation within the same budgets – the trick everyone is under pressure to deliver on.
- Next, if we do this correctly, the vast majority of code is now in re-useable objects – which mean far lower maintenance. I have heard anecdotal estimates that as much as 75 to 80 percent of budgets go to maintaining existing workflows as opposed to building new ones – so this can be significant.
- It frees deep network and OSS/BSS engineers from having to play as active a role in each and every new service idea "oh, that's hard", "Patricia's away for three weeks and we need her" etc. Now, the services are defined, hopefully documented, and usable by those without familiarity of the legacy – a very good thing for cost and scale.

In conclusion, I encourage the industry to think systematically about its future, what that means for service innovation numbers and cycles, and consequently what investments in agile processes yield big returns. Today's answers may differ greatly from those that have guided our thinking until today.

Grant Lenahan is executive director and strategist, BUSS, at Ericsson (www.ericsson.com).

Service Providers Face Competition on Their Own Networks

by Jim Machi

Communications service providers today find themselves in a unique dilemma. Many global technology brands best known for web services, applications and marketing strength are staking claims in the communications business by providing innovative over-the-top services on third-party service providers' data networks. These OTT services, which often include video calling as a standard integrated feature, provide subscribers an alternative to the service provider's core messaging and voice communications services.

For incumbent service providers, this challenge presents the very real prospect of becoming a broadband utility service (like an electric company), even though they have many resources at their disposal to succeed and prosper in this new competitive environment. To defend and expand core revenue sources, service providers must embrace the same methodology as their OTT competitors and deliver communications services as an application on top of their broadband data networks.

Although many of the service provider's communications services are delivered via next generation IP networks, much of the services that are available today are narrowband voice-centric. Meanwhile, OTT providers have innovated using both proprietary and standards-based IP communications protocols (e.g. SIP); adding presence, IM, chat, video, conference, HD voice codecs, screen sharing, and other, richer communication functions to their services. This innovation has accounted for a big slice of the global real-time wireline communications pie in terms of minutes (if not revenue) and threatens to expand its reach as the demand for mobile broadband and app-ready devices increases.

What are Video Communications Services?

Video communications services leverage end-to-end IP networks to combine many interactive communication types into an integrated service that allows users to establish communication sessions and promote the level of interaction on demand. For example, a user can initiate an SMS or chat session, turn it into a voice call, promote it to a video call, invite other users into a multi-party videoconference, and add streaming video and other content to share in the communications session.

How Service Providers Can Proceed

The competition now is for the next generation of real-time communication services and the associated revenue – and the stakes are enormous across the globe. Since services such as Skype have been so successful in the global market, it may be difficult to envision how service provider-based VCS could be brought to market as competitive alternatives to OTT services. Still, many service providers are in a strong position to deliver VCS to their customers today. Consider the following assets they can use:

- Service providers have a direct service, billing, and marketing relationship with their customers.
- In many regions, service providers maintain direct control over the client devices operating on their networks, including factory-installed application suites.
- Service providers can control and prioritize real-time communications traffic to improve QoS/QoE through network, endpoint, and NOC monitoring and management.
- Service providers have a history of peering with fellow service providers and developing interoperability across networks.
- Many service providers have access and licensing agreements with content providers, enabling streaming video content as a key component of VCS.

Service revenue models for VCS that are competitive with OTT services will need to be established by service providers. Core services such as peer-to-peer voice or one-to-one video communication sessions may need to be given away for free as they are with prominent OTT services. The real revenue from VCS may end up coming from the upsell of value-added communication amenities, i.e. conferencing, collaboration tools, video messaging, and video ring-back tones.

Video Communication Services Come of Age

This is an exciting time for communication services. The limitations of narrowband voice networks are being shed via ubiquitous broadband IP networks and an exciting array of intelligent and powerful mobile endpoints. There is a huge opportunity to deliver a more effective way to communicate with these networks and devices. However, with this opportunity comes a clash of interests, including competition for real-time communications market share between traditional service providers and OTT providers.

To defend and expand core revenue sources against OTT providers, service providers need to leverage their existing strengths and assets to offer consumers real-time communications services that they'd be willing to pay for. It is shaping up to be quite an interesting competition.

Jim Machi is senior vice president of marketing at Dialogic Inc. (www.dialogic.com).

The Rollover to Data Plans

by Ken Osowski

Mobile subscribers over the last 20 years have grown accustomed to paying for cell phone usage based on voice minutes. It looks like that era is gone. Mobile operators in the U.S. have introduced tiered service plans based on data usage only. Gone are the myriad service choices that represented a complex combination of voice, text, and data quotas to establish the base plan along with a list of individual feature options. This complexity was especially evident with family plans where line charges, group features and device types added another level of choices.

The new data-centric service plans offer mobile subscribers unlimited voice minutes and texts. Both individual and family plans drop the concept of a line charge in favor of the concept of sharing a pool or bucket of data (GB) up to a plan limit across multiple cellular devices including smartphones, tablets, and data modems. In addition, Wi-Fi hotspot-capable smartphones can provide access to the shared data pool without additional tethering charges.

This shift in service provider thinking clearly helps them to monetize the investments they are making in 4G LTE LTE networks. But does it represent value to their mobile subscribers? In general, data-centric plans represent higher costs for subscribers, although it makes what they are paying for clearer. Data-centric plans still put the burden of quota management on the subscriber, sometimes resulting in costly overage charges. Other subscribers will not be reaching their quota limits and not getting enough from their data service plans. All bytes do not have the same value to subscribers, especially with rich media content streaming becoming the norm. Personalized services represent a way for mobile operators to tie usage to applications and offer their subscribers value-based pricing.

Those mobile operators that embrace personalized services and actively transition to this model will build a competitive advantage. By augmenting tiered data usage plans with add-on personalized services, operators can introduce new services based on application-based volumes, application categories, application prioritization, subscriber location, day and time, or specific applications and websites. Given a subscriber's usage profile, these policies can be used to implement intelligent, deliberate charging, with varying rates that re-enforce personalized, value-based service pricing. This can be achieved by implementing a more granular policy creation and enforcement mechanism that can determine in real time the applications in use, the location of the subscriber, the day and time.

Mobile operators already have a significant investment in policy, charging, and billing systems needed to implement personalized mobile services. What is required for service innovation in the future is a close coordination between the management and the policy enforcement systems, including reporting on usage trends that indicate potential new service offerings.

This is accomplished by fast and efficient integration across these network elements with intelligent policy enforcement systems that leverage standards-based interfaces. 3GPP mobile network policy and charging control components – the policy and charging rules function, online charging system, and offline charging system – are already widely used in the world's most advanced 3G/4G LTE LTE network deployments, and are readily suited to play a role in defining policies used to implement intelligent service charging. Policy formulation is an IPE function that interacts with these network elements to identify and profile subscribers, associating mobile subscribers in real time with IP addresses. Service policy enforcement is accomplished by IPE platforms that are configured in-line with a mobile network's data traffic to perform traffic monitoring, analysis, and control as well as enable intelligent service charging.

A key aspect of implementing personalized services is recognizing the ever-changing behavior of mobile subscribers and then reacting quickly to create services to address these dynamic trends. The first step in creating new services is to understand where and when mobile subscribers use specific applications on their mobile devices. This informs the marketing teams about mobile usage characteristics to help determine exactly what personalized services to create. The next step is fast implementation of flexible charging models that support creation of personalized services – with service velocity – enabling mobile operators to respond to usage patterns as they happen and seize these new revenue opportunities. Mobile operators failing to deliver service velocity will fall behind and miss new revenue opportunities as a result. The rollover to data plans is a good first step for the mobile industry, but offering personalized services is the next step to mobile service innovation and monetization.

Ken Osowski is director of solutions marketing at Procera Networks (www.proceranetworks.com).

Fixing 'The Internet is Slow Today'

by Brough Turner

If you're the IT director for your household, you've probably heard a family member complain, "The Internet is slow today." This happens with Wi-Fi, 3G/4G LTE LTE and wired services. What's more, it usually reflects real problems that are present in many parts of the Internet today. The problem is bufferbloat, and it is interesting to see how solutions are being developed and applied in different environments like mobile networks, cable networks and consumer Wi-Fi devices.

Bufferbloat happens when overly large buffers fill up, introducing latency that, in turn, interacts with TCP/IP to dramatically reduce network throughput. Although the term bufferbloat is relatively new, the issue has been known for almost three decades yet never fully resolved. Indeed, every year there's a new crop of PhD thesis projects on queuing and buffer management in packet devices.

Ever lower cost memory combined with the mistaken idea that more is better has resulted in the widespread deployment of network devices with excessive buffers. In addition, wireless connections experience dynamically varying bandwidth and delay, making it hard to correctly size buffers in the first place. The result is Internet connections that slow to a crawl intermittently and unnecessarily, and then take minutes to recover.

I first saw this effect on AT&T's 3G wireless network in 2009. Everyone was talking about how iPhone data traffic was overloading AT&T's network but, in many cities, the real problem was excess buffering. During normal operation, latency was less than 200 ms, but as traffic increased, latency suddenly jumped to many seconds, causing all TCP sessions to grind to a halt. It would stay that way for tens of seconds to a minute or more. Jim Getty, who coined the term bufferbloat, has subsequently documented similar problems with residential cable modem services and on links through Wi-Fi routers.

This behavior is unnecessary. With proper buffers, TCP sessions slow down gracefully, providing very acceptable services for far more traffic. Luckily, major players have begun to notice and, although no one acknowledges problems in their specific networks, carriers are obviously working to remove excess buffering as private measurements on several commercial networks show substantial progress.

What's interesting is how open the process is and how quickly solutions are deployed. For 3G and 4G LTE LTE mobile networks, there is little or no visibility. If the topic has been discussed in 3GPP standards committees, it's not obvious to an outsider and, as yet, the term bufferbloat doesn't show up in any 3GPP standard, even though latency has been a major focus for evolving 3G and 4G LTE architectures for over 15 years. In 2009, AT&T Wireless specifically denied its network had any excess buffering, despite clear third-party measurements showing repeated instances of 5-8 second ping times. On the other hand, while denying any problems, AT&T appears to have cleaned up its worst buffering issues, based on anecdotal measurements in formerly failing areas. We have no way of knowing what it's done or how much of the problem the company has solved, but the company appears to have made substantial progress.

Comcast and CableLabs have been a lot more open. Cable industry PR departments never admitted to any problems, but CableLabs documents describe testing DOCSIS 3 modems and finding severe jitter and very slow web page downloads. They conclude, "We observed the best web page download performance by using the smallest tested upstream buffer sizes." Finally, CableLabs has amended some of its specifications to gain configuration control over previously preconfigured buffers. Obviously, it will take time for this equipment to be universally deployed, but already I know of specific Comcast customers in eastern Massachusetts who have seen their worst-case latency to MIT drop from over 1 second to less than 30 ms.

Consumer Wi-Fi is different. There are just as many problems, but they are spread over many product vendors and many applications. Luckily, specific segments demand solutions. The gaming community is in the forefront. Meanwhile bufferbloat.net has shown how QoS settings can be used to mitigate problems in cable and DSL networks. Thus the Wi-Fi market is fragmented but open and moving to solutions as rapidly as any centrally-controlled network.

Historically, Internet scaling problems are solved at the last possible moment. With bufferbloat, it's happening again.

Brough Turner is founder and CTO at netBlazr Inc. (www.netBlazr.com).

Car Connectivity Redefines the Road

by Mika Rytkonen

In an always-on world, smartphones take pole position. From texting, e-mailing and surfing the web to location-aware retail and social media services, when it comes to completing a given task, smartphones are usually the first, closest and fastest method to get us across the finish line.

But when the connected lifestyle meets an actual gas pedal, the racing metaphor comes to an ironic halt. All sorts of difficult questions emerge around safety, liability and functionality. As the various industry stakeholders scramble to provide answers, drivers are left with two bleak options: They can completely disconnect from the grid, or they can hijack native radio and entertainment systems by connecting their phones via obscure jacks, pirate radio adapters or other patchwork solutions. In the long run, none of this is feasible.

As history suggests, there's probably a better option. After all, a similar debate occurred when the first car radios were installed, and nowadays, if a car doesn't have a sound system it might as well not even roll.

What if there was a technology that not only made smartphone connectivity safer, but also enhanced the overall driving and infotainment experience? With full device and automobile integration, could we be headed toward a more realistic, forward-thinking version of connected mobility?

The fact is, the auto industry has approached the issue from a number of angles over the past several years. Manufacturers have supplied wired and unwired phone connection options for hands-free calling. They've Internet-enabled their infotainment systems for traffic-aware navigation and Internet radio. Eventually there came a flood of proprietary systems to offer more of an umbrella approach to the connected-driving experience. Ford, Toyota, GM, Fiat and others already offer some flavor of connectivity.

In the meantime, the Alliance of Automotive Manufacturers has served as the backbone for defining appropriate interaction for all driving tasks and has developed rigorous internal testing processes to ensure minimal distractions and driver workload. Why not apply the spirit of this practice to smartphone and car connectivity – and bind the new set of rules under a single technology standard?

By now, most automobile manufacturers, handset vendors, mobile application developers and consumer electronics companies agree that the best way to approach integration between cars and smartphones is via a common platform. By developing connected driving systems around one technology, stakeholders can benefit from a higher degree of equipment interoperability, in turn lowering the economic threshold to deployment and ubiquity.

Developed by the Car Connectivity Consortium, MirrorLink is a standard that offers seamless connectivity between a smartphone and a car's infotainment system. By mirroring the smartphone screen on the infotainment screen, automatically adapting apps to safe-driving mode and making those apps accessible via dashboard and steering wheel buttons, MirrorLink allows consumers to use all their favorite smartphone services while keeping their eyes on the road and hands on the wheel. Among the numerous benefits to developers, MirrorLink enables app programming within a single technology to support a range of vehicles, rather than creating a different version of an app for each brand of car. Best of all, MirrorLink is already on the market, having debuted with much excitement in production-model handsets and vehicles.

Smartphone connectivity standards like MirrorLink offer distinct benefits for all members of the car connectivity ecosystem. Auto manufacturers can win new customers by offering a simple method to bring key smartphone functionality right onto the dashboard. Handset manufacturers and OS vendors can extend brand presence to new real estate, literally adding hours of visibility with each subscriber. Along with a common technology platform, MirrorLink gives app programmers access to car sensor data, opening the door to new innovations around safety, emissions reduction and much more. Operators are no longer at odds with regulators when it comes to ethically monetizing users while they drive. Regulators can be assured connected driving does not automatically sacrifice safety. And consumers reap the phenomenal benefit of staying connected not just in their own cars, but in their spouses' or friends' cars – or rental or car-share pools – so long as those vehicles are MirrorLink-enabled.

Smartphones also could communicate seat and mirror settings between vehicles, or adaptive transmission and suspension histories.

The GSMA predicts that by 2020, the market for connected car applications will reach $600 billion. It stands to reason the most widely distributed technology will yield the largest chunk of this revenue. Consumers will ultimately reject the practice of driving in a communications vacuum. Standards will open windows and shift gears.

Mika Rytkonen is chairman and president of the Car Connectivity Consortium (http://www.carconnectivity.org/).

BUCKING THE TREND

by Paula Bernier

Proving the Theory?

"Fortune 500 brands are adopting mobile display and video at a considerably more rapid pace than they moved into online advertising," according to Scott Swanson, founder and CEO of Mobile Theory.

"And now they're catering the brand experience for the specific nuances of the mobile medium, looking for the best ways to reach and engage their target customer," Swanson says.

That has led to strong results at Mobile Theory, a subsidiary of Opera Software.

In the three months since becoming part of Opera Software in February, Mobile Theory saw triple-digit percentage monthly revenue growth and hit key milestones in campaign executions, new client additions and staff expansion.

Since the February acquisition, quarterly revenue increased by 250 percent; Mobile Theory's advertiser client roster grew by more than 75 percent, with marquee clients including Coca-Cola, Paramount Pictures and Chase Bank; and it added 15 new employees (and plans to double headcount by the end of 2012).

What's in Store

The writing is on the wall: Online sales are taking a significant bite out of bricks-and-mortar retail sales. So what can physical locations do to get customers to open their wallets, and not just their comparison shopping apps, while in stores? A company called iQmetrix was at CTIA this summer in New Orleans offering up one answer.

In a meeting with NGM at CTIA, Anne Weiler, iQmetrix's vice president of marketing, explained that the company's XQ Interactive Retail solution helps keep customers engaged with retailers and keeps them off of Amazon. XGIR does that by providing a touch-screen interface through which in-store customers can access interviews on products likes phones and other electronics, sporting goods or other products that may require explanation. The tool can also enable customers to compare pricing among similar products.

The system enables users to buy products, save the information they access or scan QR codes, and it allows brands and retailers to track every time a particular product or screen is touched.

"Shopping is changing, and that experience has changed because of technology," Weiler noted. "Retailers really need to think about how they bridge the mobile, e-commerce and in-store experiences."

M2M a Hug(h)e(s) Deal

In yet another sign of just how keenly interested the big telcos are in machine-to-machine communications, Verizon Communications Inc. this summer laid out $612 million to buy Hughes Telematics Inc. The deal is expected to close this quarter.

"We expect M2M and telematics to drive significant growth for Verizon, and we're taking an important step forward to accelerate solutions that will unlock more opportunities for existing and new HTI and Verizon customers," says John Stratton, president of Verizon Enterprise Solutions. "Joining Hughes Telematics' robust service-delivery platform and suite of applications with our existing assets will create a premier set of capabilities. In powerful combination with Verizon's global IP network, cloud, mobility and security solutions, Hughes Telematics' flexible service-delivery platform has the potential to reach beyond the automotive and transportation realm to create new opportunities in mHealth, asset tracking and home automation."

Verizon earlier this year launched a new practice focused on developing telematics solutions that leverage the company's cloud and information technology, security, global IP network and communications, and mobility and M2M technology platforms.

Of course, Verizon is not the only big telco working the M2M opportunity. AT&T, Sprint and T-Mobile spinoff RACO Wireless are among the others catering to businesses that want to increase efficiency through this important technology.

That's no surprise, given the M2M device connections worldwide are expected to grow from 62 million in 2012 to a whopping 2.1 billion in 2020, according to Analysys Mason.

by Paula Bernier

Putting Carrier-Class Wi-Fi to the Test

The Wi-Fi Alliance Promotes Certification Effort

The move to make the Wi-Fi experience more carrier class continues with a move by The Wi-Fi Alliance to enable certified devices to discover and connect seamlessly with certified access points.

As of late June, the alliance was testing mobile devices and infrastructure as part of the effort, which falls under the umbrella of the group's Passpoint program. The first products to be certified, and which were undergoing testing this summer, include the BelAir 20E; Broadcom Dualband 11n WiFi and Dual Band 802.11n Access Point; Cisco CT2500 Series WLAN Controller and LAP1260 Series Access Point; Intel Centrino Advanced-N 6230; Marvell Plug – 88W8787 802.11 a/b/g/n Reference Design; MediaTek Hotspot 2.0 Client V1; Qualcomm Atheros Dual-Band XSPAN 3-Stream 802.11n Access Point and Dual-Band XSPAN 2-stream 802.11n WLAN Adapter; and Ruckus Wireless ZoneFlex 7363 and ZoneDirector 1100.

The goal is to offload mobile traffic from cellular networks as efficiently as possible by making it simpler for mobile users to connect to Passpoint-certified hotspots, which by the way offer what the alliance says is enterprise-grade WPA2 security.

"Wi-Fi CERTIFIED Passpoint certification is an important step toward expanding the role of Wi-Fi in operator networks," says Vish Nandlall, CTO and head of marketing and strategy for Ericsson North American operations. "We understand what it takes to make Wi-Fi work for carriers, and we support the efforts of the Wi-Fi Alliance to help the industry move in that direction."

As discussed in the May issue of NGM, there's been a move afoot in the industry for the past year or so to make Wi-Fi carrier quality. The aim is to enable cellular service providers to integrate 3G, 4G LTE LTE and Wi-Fi at the base station and have common control, security, management and optimization capabilities for all of the above.

In this scenario, Wi-Fi is just another connectivity mode in the heterogeneous network – or hetnet. And every vendor in the wireless access space, from the big guns like Alcatel Lucent and Ericsson, to smaller outfits, is talking about carrier-class Wi-Fi and the rise of the hetnet.

Fresh off of announcing plans to buy BelAir Networks, Ericsson at Mobile World Congress in February unveiled a new pico base station. Both the new product and the acquisition are Ericsson efforts to align cellular and Wi-Fi more closely, Mikael Back, Ericsson AB vice president, told NGM in Barcelona.

"Ericsson will lead the way in the growing converged Wi-Fi and cellular market where improved end user experience is the driving force. By integrating BelAir Networks' market-leading products and competence into Ericsson's existing radio portfolio, we will be able to do this more quickly. We welcome 120 highly skilled people into the company," said Hans Vestberg, CEO of Ericsson, in announcing the BelAir deal.

In addition to individual vendors and The Wi-Fi Alliance, other industry bodies are working the issue as well. For example, the GSMA and the Wireless Broadband Alliance have joined forces to simplify connectivity to Wi-Fi hotspots from mobile devices. To do that, the organizations plan to develop technical and commercial frameworks for Wi-Fi roaming.

"The combination of Wi-Fi and mobile technologies extends the power of broadband for consumers," says Shrikant Shenwai, CEO of the WBA. "The work by the WBA and the GSMA will expedite the availability of a new generation of Internet access for the benefit of consumers everywhere. Key to this is Wi-Fi being able to replicate the success of mobile technology and allow users to roam seamlessly between different networks."

A Closer Look

The Wi-Fi Alliance recently polled smartphone and tablet users in the United States, United Kingdom, France, Japan, China, and Korea to measure interest in easier to use mobile Wi-Fi. The alliance says the below results "reflect strong user readiness to embrace Passpoint service offerings from providers among subscribers in each country."

Wi-Fi drives usage

On average, 74 percent of respondents stated they would use "a little" or "a lot" more data if they had unlimited data usage via easy-to-use Wi-Fi hotspots.

Most would switch

On average, 77 percent of respondents also stated they would be likely to switch service providers, either immediately or at contract end, to access a Passpoint-like Wi-Fi offering, with 65 percent indicating a willingness to pay more per month for such an offering.

Passpoint drives loyalty

Conversely, an average of 87 percent of respondents said they would definitely/probably stay with their current provider if a Passpoint-like offering were included in their plan.

Source: The Wi-Fi Alliance

The Mobile Data Mirage

In a recent BGR posting titled "The mobile data mirage", Tero Kuittinen talks about "the tantalizing curve that represents the mobile data explosion" and the fact that, since Motorola and Nortel are no longer players in the next-generation mobile infrastructure market, that Alcatel Lucent, Ericsson, Huawei and ZTE would appear to be sitting pretty. But, he goes on to write, this thinking is a "trap many investors have walked into over the past two years – and what a murderous meat grinder the network sector has turned out to be." He notes that ALU's share price has in the space of a year plummeted from $5.27 to $1.11; that Ericsson's has gone from $14.47 to $8.27; and that ZTE expects to see a 80 percent decline in profits in the first half of 2012. "It is no secret why the infrastructure market is so difficult right now. Giant European operators are among the biggest spenders in the world, and each of them is saddled with tens of billions in debt," writes Kuittinen, who has done equity research at such firms as Alliance Capital and Opstock and now serves as an analyst and vice president of North American sales at mobile diagnostics and expense management Alekstra. "The entire telecom industry is watching the ongoing sovereign debt crisis in Europe and holding its breath…. The operators must prepare for that scenario – and so they have been cutting down on 2G and 3G network upgrade and maintenance spending. 4G LTE expansion has been held back as well. Carriers that used to lean heavily on Ericsson and Alcatel have started sneaking in dirt-cheap Chinese contracts to lower capex spending."

Many Happy Returns

Mobile Experts predicts the number of base station transceivers will grow to more than 17 million per year by 2017. Increasing bandwidth requirements, MIMO, and carrier aggregation will drive growth in key semiconductor components, according to the firm's new report, "Semiconductors for Macro Transceivers and RRH." Joe Madden, principal analyst at Mobile Experts, comments: "Despite extremely strong mobile data demand, the market for base station radios has been dropping for the past 18 months. The market will begin to grow again in the second half of 2012, with LTE leading the way to new and richer architectures." The firm forecasts growth in the RF semiconductor market approaching $3 billion in 2017.

Sprint Lightens Up

Sprint will use Alcatel-Lucent's lightRadio solution in select areas of its 4G LTE LTE mobile network, the companies recently announced. This is the first customer to announce its intent to use the lightRadio products. The lightRadio is a 2G/3G/LTE solution that's about the size of a child's block and can support up to 48 users. Alcatel-Lucent lightRadio technology uses beam forming that makes amplifiers on the radio towers more energy efficient, allows for an extremely small footprint, and lowers the cost per bit for carriers. The lightRadio Metro Cells initially will be deployed in Sprint's network to deliver extra capacity and better quality connections for indoor locations such as stadiums and campuses. However, metro cells can be used in outdoor applications, and can be mounted on lamp posts or street signs, as well.

Touching Base

Cloud-Based Mobile Offload

ADTRAN has introduced what it's calling the world's first cloud-based Mobile Data Offload solution for carriers. This solution, which is based on the soon-to-be-ratified Wi-Fi Alliance's Hotspot 2.0 standard, leverages a virtualized approach that eliminates the need for hardware-based controllers in the network. ADTRAN says that significantly reduces the cost, complexity and management overhead associated with traditional approaches to scaling network access. "We are excited about our prospects in the mobile data offload market and have already seen great traction in current Proof-of-Concepts with major carriers around the globe," says Mads Lillelund, general manager for ADTRAN's Bluesocket Business Group. "The true value of ADTRAN's solution is that providers can seamlessly deploy a genuine carrier-class mobile data offload solution that complements their existing cellular networks and addresses key business issues while lowering overall expenditures."

Big in India

Mobile data traffic in India grew 54 percent between December 2011 and June 2012, according to the MBit Index from Nokia Siemens Networks, which looks at all the 2G (GSM and EDGE) and 3G multivendor networks managed by Nokia Siemens Networks for operators in India. "The company currently provides 30 percent of the total 2G and 3G networks in India which provide services to about 300 million subscribers," according to NSN. "This large sample size, amounting to a third of India's 2G and 3G mobile networks, offers an excellent insight into data traffic across all networks in the country." NSN reports that data traffic generated by 3G services on the networks it powers in India has increased 78 percent; 2G traffic has increased by 47 percent, meanwhile. "Our report highlights India's enormous appetite for consuming data services on the go and hence the need to provide high quality mobile broadband services to satisfy users," says Sandeep Girotra, head of India region at Nokia Siemens Networks. "2G has been relatively successful in driving mobile broadband use in India, but we are now witnessing 3G pushing the mobile broadband use to unprecedented levels."

Managing the Little Ones

A new solution from ip.access addresses management for the small cell layer of mobile operator networks. Part of the company's Network Orchestration System, this includes a full suite of tools aimed at helping operators quickly deploy small cells and introduce new services. As ip.access founder and CTO Nick Johnson notes: "Small cells are rapidly evolving. They are no longer simply standalone islands of coverage but are becoming an integral part of the operator's coverage and capacity solutions. That demands more management, more performance monitoring, and more interaction with network's operating and business systems." The ip.access next generation NOS includes four key operator management tools: Network Register, which enables operators to quickly roll out private consumer small cell services by bridging the gap between the small cells and the operator's business systems; SON Support, which ensures different network layers work together, switching calls from one layer to the other with no drop-off in service or radio interference with surrounding cells; App Manager, which makes it possible for operators to compete with over-the-top players and introduce location-based services that are not reliant on the use of battery hungry GPS data; and OysterCatcher, which captures performance statistics from individual access points and can aggregate data right across the small cell layer.

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APPerture

Search and Retrieve

Apple was tweaking its App Store this summer, TechCrunch reported in late June. According to the piece "searches for apps were suddenly ranking results higher by user ratings and app descriptions, rather than the names of the apps themselves." The changes were reportedly brought to light by Tomasz Kolinko, a developer and one of the founders for App Store analysts Appcode.es, and confirmed by Xyologic co-founder Matthaus Krzykowski.

The piece says Krzykowski "believes that we may see more of these small changes as Apple continues to tinker with the concept of search and discovery in a store that is now teetering at more than 850,000 approved apps, with over 600,000 active (Appsfire's founder Ouriel Ohayon notes it's actually more like 650,000)."

London Calling

The developer community jumped at the chance to create apps tied into this summer's Olympic games in London.

Among the apps were Tagwhat, which offers travelers rich, location-based data on attractions around London. For example, it can inform mobile users they're passing by the side street on which the cover of David Bowie's "Ziggy Stardust" album was photographed, or the location of Lady Diana's former bachelorette pad.

Another app, called HipGeo, enables users to create sharable virtual albums, including details of their whereabouts, or travels while still on the move.

Meanwhile, London Olympics Ultimate was created to allow fans to follow their favorite countries on their mobile devices. It offered win and lose updates, allowed users to predict turnouts, listed schedules and medal counts, and provided other Olympic news.

To help Olympic visitors take care of the day-to-day matters that traveling can entail, London Tube Deluxe offers help navigating the London underground and XE Currency App provides current currency rates, charts and more.

Fore You

A new application/device brought to you by AT&T and Swingbyte can help improve your golf swing.

The solution includes a key-fob-size device, which weighs less than an ounce, that attaches to the shaft of any golf club. Install this just below the grip on your club, and you can leverage your smartphone or tablet (which connects to Swingbyte via Bluetooth) to review every aspect of your golf swing, from the club head speed to swing path.

"Swingbyte will tell golfers more about their swing in five minutes than many would know after five years of practice," says Brian Payne, a former PGA Professional who is vice president of business development for Chicago-based Swingbyte. "It's the most objective, convenient and affordable way golfers can learn about their swing and improve their game."

Selling for an introductory price of $149, Swingbyte is available in select AT&T stores and online.

Trash Talk

Zhi Zhen Internet Technology has filed a claim that the voice command capability Siri in Apple's iPhone infringe on a patent used for the Xiao i Robot voice system on phones and the web, according to an Endgadget report.

"We suspect [Apple will] be more than a little eager to fight back in court: in addition to the lawsuit presenting a very conspicuous roadblock to bringing Siri to China with iOS 6, it comes from a company that hasn't been shy about plastering the Siri icon all over its home page," notes the Endgadget story.

by Robert Oscar

The Doctor in Your Pocket

One of the strongest trends in today's health care environment is the significant rise in the number of mobile communication devices for accessing health services and information – also known as mHealth.

A recent study found that nearly 17 million consumers were accessing health information on mobile devices in 2011, representing a 125 percent increase from 2010. What's more, 56 percent of physicians used smartphones and 25 percent used tablets for clinical work last year. These statistics leave experts predicting that health care and medical app downloads will reach 44 million this year, and 142 million by 2016.

In terms of investment growth, $500 million flowed into mobile health companies last year, compared to $233 million in 2010. In the next few years, efficacy studies will no doubt lead to greater awareness and increased investment in mHealth strategies.

A Cure for an Ailing Health Care System

Health-related smartphone apps streamline the flow of information between health plans, physicians, and patients, facilitating one-on-one exchanges that close gaps in care, create quicker care response, and improve the overall health care environment. In fact, a number of mobile website capabilities include access to:

- physician directories, including directions to physicians' offices;
- claims history;
- eligibility and cost-sharing requirements for a doctor visit;
- drug prices of nearby pharmacies, including generic and therapeutic alternatives;
- self-diagnosis tools, including symptom and disease lookup;
- daily wellness self-management tools, including trackers for achieving health-related goals;
- information regarding a specific health-related condition;
- reminders and alerts regarding prescription drug compliance; and
- options for in-home monitoring and in-home care.

Nearly 90 percent of surveyed physicians would like their patients to use mobile devices to monitor or track certain health indicators at home, according to a report from Float Mobile Learning, a mobile technology consulting firm. Other key findings of surveyed physicians include the fact that 56 percent use mobile devices to help them make faster clinical decisions. And 40 percent said mobile devices help them reduce the amount of time they spend on administrative work.

As Baby Boomers reach retirement age, and as health care costs continue to rise, mHealth represents a high-tech revolution that has the potential to relieve the cost burden of health care and the growing demand for higher quality, patient-centric medical treatment.

A Critical Tool for Specialty Drugs

The growing adoption of mHealth dovetails with another significant trend in health care: the rise of specialty pharmaceuticals, which are expected to comprise eight of the top 10 drugs in 2014. In general, specialty medications are administered by a physician in an outpatient setting – an expense often embedded within a claim – so it's difficult to determine the price and accuracy of a medical pharmacy claims cost. Mobile technology can give patients the ability to identify the potential cost to them for services and medications delivered in various care settings, which will help reduce the costs of care because more patients have increased liability for payments with high deductible plans.

Health plans and pharmacy benefit managers will need to begin leveraging their formulary and benefit plan systems to allow mobile access by their members/patients and alert them of potentially higher costs.

Service providers with expertise in mobile technology strategies will be able to provide web-based platforms – not just apps – that automate the labor-intensive processes of gathering, integrating, and accessing drug claim histories and formulary data. In turn, these platforms will drive personal notifications regarding drugs that require prior authorization, tailored messaging to increase the effectiveness of consumer engagement communications, and web-based reporting apps that measure changes in pharmacy utilization and prescription drug adherence for chronically ill patient populations. Automated personal mobile app services will most certainly increase patient satisfaction, and save time and money across the health care delivery system.

Thinking Ahead

Savvy health care professionals, facility administrators, health plans, and employers are getting the mobile message and are exploring ways to leverage this technology. It's critical that they find and implement mobile technology solutions that not only access integrated information systems, but do so by allowing all smartphone devices – Android, iPhone, RIM, Microsoft – to have a consistent and secure user experience.Mobile devices are becoming more pervasive in medical settings as tools for accessing medical information in a way that can be integrated with other clinical systems. Mobile connectivity should enable health care professionals to review a patient's medical history, update patient information, check for drug interactions, schedule a follow-up and lab tests, enter billing codes and prescribe medication, all within minutes – and from the bedside, exam room, or front office – wherever and whenever needed. The benefits of connecting the physician to the patient via mobile applications will be apparent in significantly increased patient satisfaction, better compliance and adherence, and lower care delivery costs.

Robert Oscar, R.Ph., is the founder of RxEOB (www.rxeob.com), which develops and configures private-label software applications for health plans and pharmacy benefit management companies to support their member engagement strategies

by David Swift

Small Cells Create Big Business

As you look around the office, are there clusters of people huddled by windows talking on or trying to access info from their mobile devices? Are you one of those battling to make themselves heard above everyone else in a small corner of mobile coverage in the building? Or do you simply go outside to access your data and make your calls?

Room for Improvement

The proliferation of mobile devices available on the market today has driven a dramatic increase in demand for mobile broadband. With it now possible to stream video and access high-bandwidth data applications on the move, consumers and business subscribers alike are expecting more from their mobile providers outside and inside the office – wanting higher speeds and higher quality connections. The consumption of huge amounts of bandwidth is stretching operators' cellular networks to capacity, affecting call quality and the customer experience.

In the office there is an added constraint. With mobile signals unable to penetrate deep into the buildings through the walls, the reason so many people are huddled by windows is because these are the only areas in which they can receive mobile coverage. The further inside buildings you go, into meeting rooms and stairwells, the less coverage you can get – and often it's the operator, not the building that is blamed by subscribers.

Key in Carrier Selection

A recent survey of IT executives from businesses of all sizes in the U.K., Italy, Spain, Brazil, Russia, Singapore and Australia, commissioned by Alcatel-Lucent, showed that at the right price and with guaranteed performance, many employees prefer to use their mobile devices in the office. However there is little loyalty to service providers when faced with poor mobile broadband coverage inside the office.

Many of the companies surveyed said they had contracts with more than one mobile service provider. But with voice and data performance in the office as important as in the field, more than 87 percent said they would switch service providers to receive improved cellular coverage and performance.

Small Cells Bring the Customer Closer

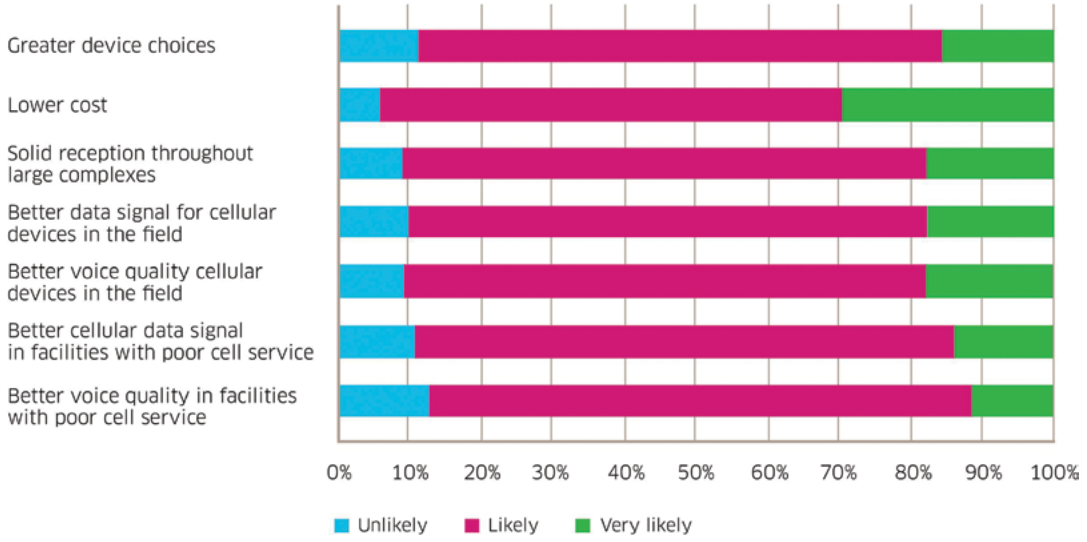
Small cells provide operators with an effective solution to the problem. A small cell is a mini base station, no larger than a standard Wi-Fi router, that can be set up within an office or home environment as well as a highly populated or remote area, to extend a service provider's cellular network and improve performance and quality for subscribers.

A small cell for enterprise or business use delivers crystal clear voice and high-speed, business-grade mobile broadband services to employees' mobile devices deep within the office building to improve the customer experience. Employees and their devices are brought closer to the base station, so less power is used and less time is spent charging the devices. With no gaps in coverage, subscribers experience smooth streaming of videoconferences, without drops to voice calls or delays in providing customers with that all important data they need right now.

Being plug-and-play, an enterprise small cell doesn't require any specialist knowledge, and a business or individual can install it themselves. This, combined with their small size, means that businesses can install them anywhere in the office without being faced with additional set-up charges. Once set up, the cell is ready to provide high-quality, high-speed broadband to nearby mobile devices.

Creating a Mini Private Network

To avoid no-go areas in a larger office space, or to support a large number of employees, multiple cells may be required. To allow employees to move across the office without dropping a



call, each cell needs to recognize another to create a small network.

This challenge can be addressed with self-organizing network algorithms – a Bell Labs innovation that ensures that as each cell is installed it automatically recognizes another to form a small optimized network. With no need for specialized engineer knowledge, this helps keep network deployment costs low and makes sure there are no dropped calls anywhere.

The small cell will recognize all subscribers of its associated service provider in its vicinity if access is left open. A company can take extra measures to ensure that only employees, not visitors, can use the cell. Access can be made private, by registering mobile devices to the cell, left open, allowing anyone within range to benefit – or a mixture of private and open access can be defined, allowing registered devices priority with remaining capacity open to all.

In addition to improved coverage, an enterprise small cell makes it possible for a mobile service provider to offer new services, based on information within the cell itself as it recognizes a mobile device. Businesses could set up automatic text notifications with the latest team information or even the restaurant's dish of the day. As employees enter the office and the vicinity of a cell, they will receive the news via text. Defining access permissions means visitors don't have access to the news too.

Relieving Strain from the Cellular Network

As small cells act as dedicated base stations, mobile traffic is taken off an operator's cellular network. Therefore, as coverage and quality are improved for those subscribers using the small cell, the reduction in traffic over the cellular network relieves demand and means an improved quality of service for all other subscribers too.

Meeting Demand with Improved Coverage and Quality

Demand for greater coverage in the office is clear. The survey conducted by Alcatel-Lucent showed that 72 percent of respondents would be interested in small cells, with 43 percent being highly interested. An enterprise cell provides the answer to this demand, delivering a low-cost solution for both operators and businesses to improve mobile broadband coverage and quality in the office. Easily installed by anyone, without any engineering or optimization experience, small cells reduce the costs traditionally associated with deployment. As traffic is removed from the main cellular network, the mobile broadband is improved for all subscribers.

In the office environment, small cells allow employees to move away from the windows and walk around the buildings, into meeting rooms, down stairs and into the restaurants making sure a conference call is no barrier to buying lunch. Crystal clear quality and higher speed data connections lead to an improved mobile broadband experience for all in the office and, as shown from the recent survey, leads to even greater customer loyalty.

David Swift is director of marketing at Alcatel-Lucent (www.alcatel-lucent.com).

by Alex Bratton

Five Secrets to Successful Enterprise Business Apps

Successful apps redefine workflows, even in non-tech industries, and vastly improve employee productivity. Over the years, I've found the most successful enterprise apps, at a minimum, should be capable of delivering a return on app, or ROA, investment of at least $5,000 per user through increased efficiency, added revenues or both, in addition to a cumulative value of at least $5 million.

How can you recognize an app that will produce this level of ROA?

Understand the Mobile App Landscape

Before you begin developing any mobile app, you must have a thorough knowledge of the marketplace and how current apps are, or falling short of, streamlining complex tasks through mobile. With a solid understanding of what's out there, you also gain better insight into what's coming. It would be disappointing, to say the least, to waste valuable time and resources developing an app internally to find out later it already exists.

Look Outside Your Industry

An analysis of cross-industry apps can be just as important as the evaluation of enterprise apps that have been developed by your competitors. By incorporating other industry experiences, organizations can dramatically improve the functional capabilities and overall success of mobile apps. For example, using real-time video can deliver mountains of valuable data across multiple industries. In the agriculture industry, drivers use an app with video capabilities to transfer grain from silos to truck, reducing labor requirements by 50 percent. This central idea can be applied in a number of other scenarios in completely different industries.

Have a Plan

In general, the more the organization invests in upfront planning and strategy, the more successful the app will be when it is deployed to mobile users.

Before jumping into an app, start out by laying out the details and direction of your strategy. Process is everything in enterprise app development. Identify inefficiencies and gaps in business processes that need improvement.

Also, developers must understand the data around existing workflows and back-end systems at your particular organization in order to design the app to communicate with existing technical infrastructure.

Identify Opportunities

Identifying unique business processes that will benefit from mobile apps can be quite a challenge on its own because many are often overlooked. Watch for signs of clogged up paperwork or inundated processes. Any workflows that depend on clipboards, binders, paper forms or specialized hardware (e.g. warehouse inventory or PoS systems) are excellent candidates to be replaced by mobile.

Likewise, workflows that present opportunities for the delivery of more complete information, shareable data, and remote VPN access are all strong candidates for apps provided the apps can deliver improved efficiency and business outcomes.

Qualify Candidate Applications

Once you identify the areas of your organization that mobile apps could enhance, qualify potential app candidates and determine the business strategy the app will address, narrow down the target audience, and develop a marketing plan to promote the app. In addition, establish minimum security levels required to sustain and protect the information contained within the app and measurement tools that will assess the app's success.

Every organization is unique, and the case for the creation of a new app in one enterprise might not hold true in others, even for companies in the enterprise's direct competitive set. But by strategically analyzing the intended purpose of the app and applying a handful of best practices, enterprises can maximize the ROA they achieve from their mobile applications.

Alex Bratton is CEO and founder of Lextech Global Services (www.lextech.com), a mobile application strategy and development firm with a special focus on the mobile workforce.

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Fun & Games

by Paula Bernier

The Agony of Defeat

Sony is one of the brands most prominently associated with games and TV – but the company, and its shareholders, have not seen much in the way of fun in the past few years.

After taking the stage at the Consumer Electronics Show in January 2009, Howard Stringer commented: "I wish I could tell you I'm recession-proof. Nevertheless, Gary [Shapiro, the president and CEO of CEA] thought I could offer something uplifting."

The charming Stringer certainly did, inviting onto the stage actor Tom Hanks, Disney/Pixar executive/director John Lasseter, Oprah pal Dr. Mehmet Oz, baseball great Reggie Jackson, DreamWorks Animation exec Jeffrey Katzenberg, and singer Usher, who performed.

What Stringer failed to lift, however, were Sony's financial results. And Stringer's replacement as president and CEO, Kazuo Hirai, isn't having much better luck.

"Sony's latest strategy sees it settling to live in the shadow of Samsung and Apple," said Andrew Ladbrook, senior analyst at Informa Telecoms & Media this summer. "In the past week Sony announced that it was likely to post record losses of 6.4 billion.Today new CEO Kazuo Hirai announced the latest strategy to try and turn the company around. Much of the talk focused on the idea of 'One Sony' but many have tried and failed to make Sony at least as valuable as the sum of its parts."

Ladbrook added that although the games division at Sony remains strong, the company has lost ground as the wildly successful PS2 game console was updated to the new generation PS3. "And despite Sony's boasts of its strength in games, the company has managed to miss the boat for both mobile gaming and social gaming," he continued. "Both sectors can offer substantial returns for only a low investment. And both appeal to much larger audiences [than] console gaming."

Sony also has failed to make the most of its position on the TV front, according to Ladbrook.

"Despite being the third largest flat screen TV manufacturer behind Samsung and LG with expected shipments of 20 million TVs, Sony has made a loss from its TV division for 8 years in a row," he said.

Sony has seen four years of losses, its share price sliced in half, the planned elimination of 10,000 jobs, and 9,000 unhappy shareholders at its late June shareholder meeting.

Track the Field

Machine-to-machine technology is making its mark in the sports arena as well.

For example, a company called flaik supplies tracking systems for various resorts and sports applications. A ski resort could use the technology to track skiers on a mountain to ensure they do not go missing.

Recently flaik expanded its reach to international markets via an agreement with Orange Business Services, which offers M2M wireless connectivity to support flaik's tracking systems anywhere in the world. Orange and its international M2M Center located in Brussels provide flaik with a single source for managing its global M2M connectivity requirements, along with local implementation of the SIM cards and local contract negotiation support.

Today the two companies are delivering solutions in Australia, Austria, France, Germany, Italy, Spain, Switzerland and Turkey. They plan to roll out the solution in short order to additional countries throughout Eastern Europe and Asia Pacific.

Says flaik CEO Steve Kenny: "Only Orange offered the global M2M connectivity with the scale, scope and security that we require. We can now expand beyond our North American roots and offer our services globally. With help from Orange, we are now rapidly expanding on one million plus skiers that we've tracked since our launch at Steamboat Resort and Copper Mountain in 2009."

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DEVICES

Fly on the Wall

A plastic smartphone attachment called FlyGrip, brought to you by a company of the same name, allows individuals to use their phones securely with one hand.

FlyGrip, which works with any phone or device, is designed to fit comfortably around the fingers and to be used with touchscreen smartphones. The sensitivity of touch screens causes accidental misclicks, which can be frustrating, notes FlyGrip. But the company says its solution allows a phone to be secured on a user's fingertips, as opposed to the palm of the hand, which allows for a much greater range of motion for the thumb.

The attachment also doubles as a kickstand in both portrait and landscape viewing angles, and its low profile takes up almost no room at all.

When closed, FlyGrip takes up about a quarter inch of space. FlyGrip is installed by using glue that adheres to the back of either a phone or case.

As a result, FlyGrip says, users are able to read e-mails while conducting various other tasks, such as holding a bag, jogging, reading, shopping, eating or walking.

Rugged Terrain

Psion's new Omnii RT15 is a rugged handheld device that combines modularity, performance and durability for mobile workers in the field. It is included in Psion's Omnii Advantage program, which means Omnii RT15 customers can upgrade one of the main modules after one full year of ownership.

"The Omnii RT15, combined with the Omnii Advantage and the Windows Embedded Handheld platform represents a breakthrough in the enterprise device market designed to drive down the total cost of ownership," says David Wurster, senior product manager for Windows Embedded at Microsoft. "Windows Embedded platforms are engineered to deliver reliability, security and efficiency to connected devices and intelligent systems across industries, making it the operating system of choice for the Omnii RT15 that shares similar core values."

The product features a range of imaging and laser scanners from multiple vendors; expanded wireless capabilities, including 3.8G HSPA+, 2G EDGE, Bluetooth and 802.11a/b/g/n; and a modular QWERTY numeric keyboard. It also offers a high capacity battery and continuous run time of 20 hours (including scanning and wireless usage). Its clipboard-inspired stylus and flexible vehicle cradle were designed for installation in transport trucks and delivery vans. And it's certified for IP65 with a drop rating of 1.8 meters.

The Psion Omnii RT15 is available in major U.S. and European territories. List prices start at $1,899.

New Sensation

A company called Senseg has a cool new solution that adds tactile effects to touch interfaces. It says the haptic solution turns touch screens into feel screens.

The company's patented technology produces tactile sensations with no mechanical vibration. This technology will be integrated into a new generation of touch interface devices including tablet computers, according to Senseg.

"Senseg provides a complete suite of patented technologies for hardware and software developers to provide immediate tactile responses, delivering a new dimension to any touch interface. We can enhance the visual content on a display with touch feedback that creates the sensation of moving a vinyl record on a DJ music app, feeling sand when accessing images of the Gobi Desert, or feeling the corner of a page when reading an e-book on a tablet," explains Ville Mäkinen, the founder and CTO of Senseg. "We have created highly efficient solutions that provide the precise tactile sensations right at the location of the user's finger without shaking the whole device and yet consume very little power on mobile devices."

The haptic solution turns touch screens into feel screens.

Founded in 2006, Senseg is headquartered in Helsinki, Finland, and maintains offices in the U.S., Japan, and Taiwan. Senseg is backed by Ambient Sound Investments, Vera Venture, and Veturi Venture Accelerator.

The global touchscreen market will reach $9 billion by 2015, according to DisplaySearch, which lists 12 major technology areas for this market.

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Do the math.

Carpe Connectivity

Mobile connectivity is improving quality of life for the growing throngs of urban dwellers, according to a new study by Ericsson's ConsumerLab research team.

"Urbanization is a global mega-trend," notes Michael Björn, head of research at Ericsson ConsumerLab. "City populations grow by 7,500 people per hour, and people are clearly feeling some stress from overcrowding. But we also see how people in cities use ICT as a means to alleviate such feelings and to better experience city life."

The report indicates around 40 percent of people in cities use smartphones to access information to solve day-to-day issues and that mobile information can help ease the stress of commuting, which is noted in the survey as the biggest source of frustration.

A separate report, this one from Infonetics Research, notes that China Mobile, Vodafone, and América Móvil are the world's top mobile operators by number of subscribers.

"The number of mobile broadband subscribers jumped nearly 50 percent in 2011 to 846 million, and we expect that number to reach 2.6 billion by 2016, driven by Brazil, Russia, India, China and others in the developing world," notes Stéphane Téral, Infonetics Research's principal analyst for mobile infrastructure and carrier economics. "We anticipate Asia Pacific to account for over half of the world's mobile broadband subscribers by 2016, while Latin America will see the fastest growth."

That should come as no surprise. Since the mid-1980s, the pace of the population shift from the United States and Europe toward Asia and the resulting growth in key urban areas in the world have been increasing dramatically, notes McKinsey Global Institute, which says this trend is expected to continue.

"Cities have long been the world's economic dynamos, but today the speed and scale of their expansion are unprecedented," according to a new report from the McKinsey Global Institute called Urban world: Cities and the rise of the consuming class. "Through a combination of consumption and investment in physical capital, growing cities could inject up to $30 trillion a year into the world economy by 2025. Understanding cities and their shifting demographics is critical to reaching urban consumers and to preparing for the challenges that will arise from increasing demand for natural resources (such as water and energy) and for capital to invest in new housing, office buildings, and port capacity."

That's not to mention communications infrastructure.

Rising Tide

The number of smartphone owners in the U.S. rose 5 percent between February and May. Google Android is the top smartphone platform. And Apple, which between February and May continued to grow its share, now commands nearly a third of the U.S. smartphone subscribers.

That's the word from comScore Inc., which in July issued its latest MobiLens report. ComScore as part of the effort surveyed more than 30,000 U.S. mobile subscribers. The entire U.S. mobile subscriber base included almost 110 million people as of the end of May.

Google Android in the U.S. owns 50.9 percent market share as of May. That's up 0.8 percentage points from February. Apple's share of the smartphone market was 31.9 percent as of May, according to comScore, which says that's up 1.7 percentage points in the same time period. RIM is third with 11.4 percent, and Microsoft and Symbian are a distant fourth and fifth, with 4 percent and 1.1 percent shares, respectively.

However, it's Samsung that is the top handset manufacturer in the U.S.

The most widely used smartphone feature by this group is text messaging, with 74.8 percent uptake, according to comScore.

High Five

The iPhone this summer marked its five-year anniversary.

In a June 29 comScore blog, Sarah Radwanick writes: "Today marks the 5 year anniversary of the first iPhone release, an important milestone not only for Apple but for the entire mobile industry. This revolutionary device set the stage for explosive growth in the smartphone market, drastically changing the complexion of the mobile industry and, consequently, the entire digital landscape in just a few short years. In July 2007, barely 9 million Americans owned a smartphone – representing just 4 percent of the entire mobile market. Today nearly 110 million Americans own a smartphone and by the end of the year smartphone owners will become the new mobile majority in the U.S."

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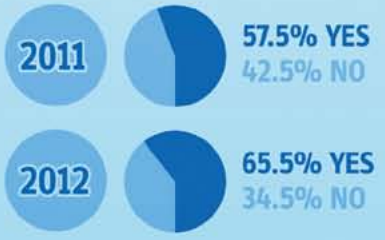

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