Volume 3/Number 4 July 2011 www.ngnmag.com

TMC

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Next Generation Networks

Still Crazy After All These Years?

Veteran Researchers Combine Analysis, 'Imagination' in New Mobile Data Report

Also in This Issue:

- Open Wide for HTML5
- Managed Networks: Is the Fox Watching the Henhouse?
- Addressing the Mobile Boom

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Editor's Notes

More Crazy Talk

by Paula Bernier

I've been a telecommunications trade publication staffer for about 20 years. After working for a couple of years as a mainstream newspaper reporter, I got my first job in telecom publishing as a copy editor (and, later, a reporter and news director) for Telephony magazine. One of my most memorable recollections about my time there was our publication of a cover story about Victor Schnee, who was then an analyst with Probe Research.

Schnee made the cover for writing what many at the time considered a controversial study. And the managing editor Karen, who today is one of my closest friends, came up with the cover headline for the story: Is This Man Crazy?

Victor chuckled when I mentioned this during our recent interview. Karen, who left the telecom trade publishing world years ago, didn't really remember it.

This all happened many moons ago, of course, but I think it's worth noting, since it demonstrates how Schnee after all these years is still putting out research that goes beyond simply information gathering and actually brings analysis and intelligent forecasting to the table. In his latest effort on this front, Schnee and his colleague Al Boschulte debunk the mobile data traffic forecasts put forward this year by Cisco in its Visual Networking Index and discuss what the mobile data deluge means for wireless broadband service providers and the communications space at large.

The fact that they are challenging the Cisco VNI is noteworthy given the Visual Networking Index is so widely quoted not only by Cisco and many journalists, but also by major wireless network operators like Verizon Wireless, that it's become the de facto standard for Internet traffic forecasting.

I also want to state again here that while I am leading this piece, and led this month's cover story, with a conversation about Schnee, Al Boschulte is an equal contributor to the NPRG study discussed in these articles and is also a noted and veteran communications analyst.

Naturally, just as I was putting to bed my cover story about the NPRG report by Boschulte and Schnee, Cisco announced the findings from a new version of the Cisco VNI Forecast. As it turns out, the mobile data forecast in the new Cisco report is pretty much the same as it was in February's VNI, which was the one the NPRG study discusses. But since we're talking about this kind of thing, here are some of the key takeaways from the new Cisco VNI (which looks at all Internet traffic, not just mobile data).

Cisco says global mobile traffic in 2010 grew 159 percent. By 2015, a whopping 15 billion networked devices will populate our world, according to Cisco. That's more than twice the planet's population. The vendor goes on to project that global mobile Internet data traffic will increase 26 times from 2010 to 2015, to 6.3 exabytes per month (or 75 exabytes annually).

Internet traffic as a whole will reach 200 exabytes between 2014 and 2015 alone, which is more than all IP traffic last year and equivalent to 39 times the entire Internet in 2005, according to Cisco. TVs will contribute 15 percent-plus of the global consumer traffic by 2015, according to the VNI, while Internet video traffic will make up 28 percent of it, up from 7 percent last year. **NGN**

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Facebook's Zuckerberg, Closed App Stores and HTML5

by Rich Tehrani

Could you imagine being so famous that your declaration of killing all the food you eat yourself becomes mainstream news? And all this at age 27? In case you missed it, I am talking about Mark Zuckerberg, a man who in a few short years has become as popular it seems as Steve Jobs.

When you think about Apple and Facebook and the popularity of both, you wonder what sort of competitive conflicts the two companies will have in the future. For example, Apple's Ping is supposed to be its entry into the social networking realm. To date, though, I don't think Facebook has much to worry about.

But what is interesting about the two companies is in 2009, Facebook's iPhone developer Joe Hewitt gave up on the project because of what he called Apple tyranny.

These were his comments, according to TechCrunch:

"My decision to stop iPhone development has had everything to do with Apple's policies. I respect their right to manage their platform however they want, however I am philosophically opposed to the existence of their review process. I am very concerned that they are setting a horrible precedent for other software platforms, and soon gatekeepers will start infesting the lives of every software developer.

"The web is still unrestricted and free, and so I am returning to my roots as a web developer. In the long term, I would like to be able to say that I helped to make the web the best mobile platform available, rather than being part of the transition to a world where every developer must go through a middleman to get their software in the hands of users."

Seeing the open web become a closed ecosystem controlled by a handful of companies is a fear every person who uses technology should have. Imagine a world where the apps you use have to be policed for content by some entry-level kid in a cube somewhere. That isn't a world I want to live in, but Apple designs such amazing devices that many of us give up application freedom because Apple's products are just so great to use.

Luckily, HTML5 is supported by many devices including browsers on Apple devices and, as a result, there is hope for those of us craving open development environments where any developer is free to create any application he or she chooses – free from censorship or guidance from a big brother company.

This is one of the primary reasons the world has a vested interest in learning about and moving to HTML5 as soon as possible. The open computing environment is something to be cherished and protected, and the longer we let a handful of companies manage our apps for us, the more freedom we lose.

My passion on the topic has led TMC, the parent company of INTERNET TELEPHONY magazine and the organization of which I am CEO, to launch in conjunction with Crossfire Media a conference called DevCon5 focused on HTML5 development. It takes place this month in New York City. (We also recently launched an HTML5 Report news site and associated newsletter.)

It is no secret that more of the world is using mobile devices like tablets and smartphones, and many of these devices are not able to see much of the magnificent Adobe Flash development on the web. This means that if you don't have an HTML5 strategy, every day more of the content on your website will be invisible to the outside world.

To learn more about the show visit the DevCon5 website at html5.tmcnet.com/conference.

To date Mark Zuckerberg is not scheduled to attend the conference, but with some notice we can be sure there is a live goat, knife and a Weber grill available for him. **NGN**

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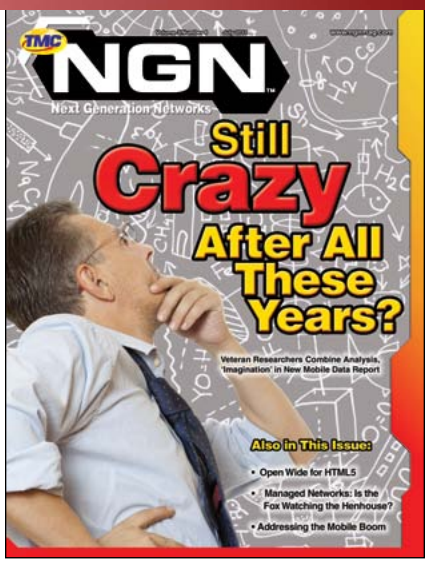

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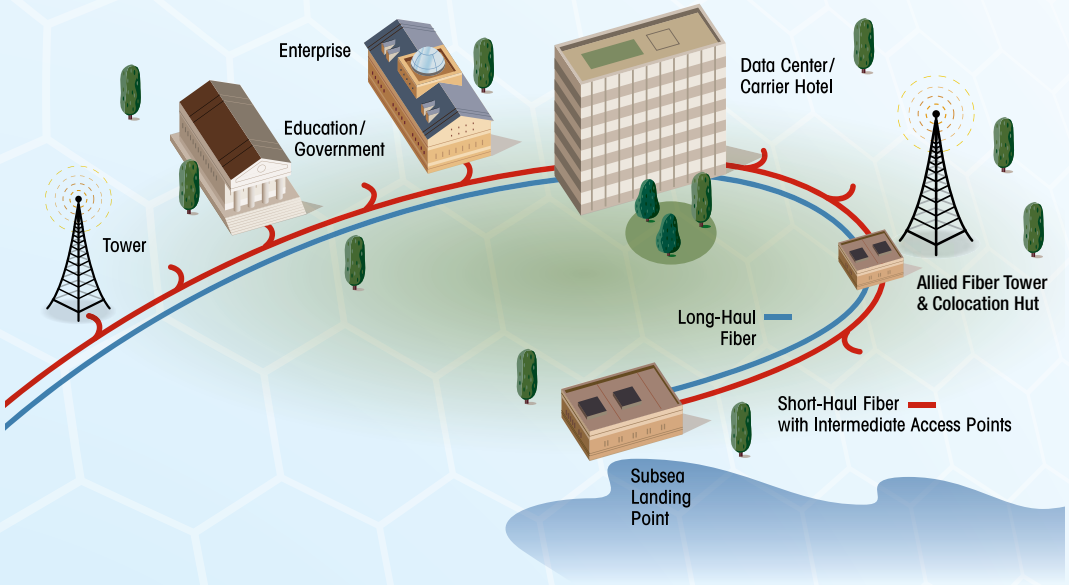

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http://tmcnet.com/58916.1

FCC Commish Joins Comcast

In what many considered a highly controversial move, former FCC Commissioner Meredith Attwell Baker has left the commission and accepted a job as senior vice president of governmental affairs with Comcast's NBC Universal. The job change was widely reported and discussed in light of the fact that Baker just months ago voted in favor of the Comcast-NBC Universal merger.

www.comcast.com

http://tmcnet.com/58917.1

MSO Tests IPTV at MIT

Comcast is running a trial of IPTV service on MIT's campus this fall. The company will expand testing to Comcast employees later this year. Sam Schwartz, president of Comcast Converged Products, in a recent blog gave some details of its Xcalibur initiative, which could revolutionize the way that Comcast customers browse, search and discover content. "We want to deliver video everywhere people want to watch it," Schwartz said in a recent interview. "We have to do a better job getting people to realize what they are paying us for."

www.comcast.com

http://tmcnet.com/58918.1

Customers Dig DIRECTV

DIRECTV has once again managed to retain its hold on the No. 1 spot in the American Customer Satisfaction Index. For the eleventh year the company beat other competitors such as DISH Network and AT&T U-Verse, both of whom have witnessed declines of four points in the ACSI this year. DIRECTV was the only company in the cable and satellite category that improved its ACSI position from last year, with an index score of 69. The company scored 10 points higher than Time Warner, Comcast and Charter Communications, which posted declines from last year's survey.

www.directv.com

http://tmcnet.com/58919.1

Satisfaction with Cablecos Drops

Video entertainment, wireless and fixed-line telecom service provider quality rankings are flat to negative, according to the latest American Customer Satisfaction Index, a national measure of customer evaluations of product quality. In fact, cable operators score at the bottom of the index across industries tracked. Satisfaction with all cable providers fell, with the exception of Cox Communications, which held steady at 67.

www.cox.com

http://tmcnet.com/58920.1

U-Verse DVR Goes Whole Home

AT&T has launched new AT&T U-verse TV Total Home DVR. Customers can now control, record and play back shows on non-DVR TVs and pause or rewind live TV shows from any room in their homes, even when the DVR is connected to a different TV, with latest U-verse Total Home DVR enhancements. The new features are currently available in Mobile, Ala., and Grand Rapids, Mich., and will roll out to additional markets over time. With U-verse Mobile and U-verse Online, meanwhile, customers can manage recordings on any connected TV in the home and across devices.

www.att.com

http://tmcnet.com/58921.1

Study Analyzes European IPTV

With the telecom and pay TV markets approaching maturity, participants in the IPTV markets in Central and Eastern Europe are finding it challenging to acquire new clients and retain the current customer base, according to new data out of Frost & Sullivan. As a result, the report indicates, it is imperative for both telecom and pay TV outfits in this region to implement bundled services. Currently, the highest number of IPTV subscribers as well as the highest penetration of the services in this geography is in the Czech Republic, where around 5 percent of the households use IPTV services, according to the firm. Bulgaria and Romania remain the least developed IPTV markets, characterized by very high penetration of pay TV and relatively low penetration of broadband.

www.frost.com

http://tmcnet.com/58922.1

TWC Repackages NYC Programming

Time Warner Cable customers in New York City now have access to more than 175 high-definition channels. The company has created several international packages designed to provide customers with significant savings (up to 65 percent) and access to many popular in-language channels from select countries. The offerings include Sahara Filmy, Sony Asia, TV Asia and Zee TV Hindi channels, targeted at Indian viewers. As the second-largest cable company in the U.S., Time Warner Cable delivers products and services to more than 14 million customers.

www.timewarnercable.com

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- HD Video
- Unified Comms in the Cloud, or Own your Own?
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For more information: www.ingate.com/Unified Communication_Austin_2011.php

www.ingate.com

http://tmcnet.com/58959.1

Don't Miss 4GWE

Now in its third year, 4GWE has moved beyond the theoretical discussions of 4G technology and implementation and onto the critical issues of how best to enable and exploit the mobile Internet and the mobile enterprise. 4GWE from Sept. 13-15 in Austin will continue to explore the issues of expanding the coverage of 4G solutions for the wireless consumer while also exploring issues related to the wireless migration for the empowered enterprise. These issues include cloud computing, device proliferation, supporting a nomadic workforce, security and more. As part of ITEXPO, 4GWE has become the industry's premier gathering place for mobile network operators, fixed carriers, handset manufacturers, mobile Internet device manufacturers, application providers, the enterprise, and venture capitalists.

http://4g-wirelessevolution.tmcnet.com/conference/west-11/

http://tmcnet.com/58910.1

UA Launches Asteroid Sample Effort

NASA is going to try to get a piece of an asteroid. The OSIRIS-REx mission will be led by the University of Arizona, with Lockheed Martin building the spacecraft and NASA Goddard Spaceflight center managing the mission for NASA. Total budget cost for OSIRIS-REx is set around $800 million before adding on a launch vehicle. OSIRIS-REx, short for the Origins-Spectral Interpretation-Resource Identification-Security-Regolith Explorer, will be launched in 2016 and arrive in 2020 at 1999 RQ36, a near Earth asteroid. Within three miles of the asteroid, the spacecraft will spend six months of comprehensive surface mapping so the University of Arizona science team can pick a location for a slow-and-steady approach to grab a sample with a robot arm.

http://spacegrant.arizona.edu/

http://tmcnet.com/58911.1

Two Satellites Face Challenges

The past six weeks have not been good to the satellite industry, TMCnet contributor Doug Mahoney wrote in a May posting. Intelsat New Dawn and Telesat 14 are both struggling with hardware deployment issues that could ultimately affect the bottom lines of their operators. New Dawn was successfully put into orbit, but Intelsat reported on May 3 that there was a "delay" in deploying the west antenna C-band reflector. Launched on May 23 on an ILS Proton rocket, Telstar 14R/Estrela do Sul 2 failed to deploy one of its solar arrays.

www.intelsat.com
www.telesat.com

http://tmcnet.com/58914.1

Astronaut Trio Criticizes Administration

On the 50th anniversary of John F. Kennedy's call to put men on the moon, a number of Apollo astronauts called out President Obama and NASA for botching up America's space policy. In a May 24 USA Today Op-Ed piece, the first man to set foot on the moon, Neil Armstrong, Apollo 13 mission commander Jim Lovell, and Apollo 17 mission commander Gene Cernan noted the 2005 Constellation program was effectively shut down in the proposed 2011 budget. They said Obama's advisors "ignored NASA's operational mandate" and "strayed widely" from Kennedy's vision and the will of the American people to be the leader in space exploration. States the piece: "After a half-century of remarkable progress, a coherent plan for maintaining America's leadership in space exploration is no longer apparent."

http://www.usatoday.com/news/opinion/forum/2011-05-24-Obama-grounding-JFK-space-legacy_n.htm

http://tmcnet.com/58912.1

Article Analyzes Space Flight Safety

With the 50th anniversary of President John F. Kennedy's call to put a man on the moon and "return him safely to the earth," there's a bitter irony that Apollo was one of the most unsafe spacecrafts put on the launch pad. It is important to examine Apollo's safety record as we look back on the space shuttle program and forward to future commercial manned spaceflight systems and the multi-purpose crew vehicle. Between 1967 and 1975, the Apollo Command Module/Service Module combination was prepared to fly manned missions a total of 15 times: Apollo 1, Apollo 7 through 17, Skylab missions 2 through 4, and the Apollo/Soyuz Test Project. In over eight years of operation, the Apollo command module killed three men and injured three others, while the Apollo service module nearly killed three more crew on the way to the moon.

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http://tmcnet.com/58903.1

Google: Chrome Sticking to Notebooks

Despite the explosion in tablets this year, Google Chrome will not be making its move over to the mobile devices. Instead, Google Chrome's OS will stay with notebooks for now. That's according to reported comments by Sundar Pichai, senior vice president for Chrome at Google. "Chrome OS is a computer model designed with various form factors in mind, but we are entirely focused on the notebook form factor for now," he was quoted by Reuters as saying. He adds that the number of Chrome users doubled over the last year to 160 million.

www.google.com

http://tmcnet.com/58901.1

Oak Hill to Acquire Intermedia

Private equity firm Oak Hill Capital Partners plans to buy Intermedia for an undisclosed sum. As a result of the purchase, Phil Koen, former CEO of Savvis Inc., will join Intermedia as CEO and chairman. Intermedia provides 320,000 Microsoft hosted Exchange mailboxes, serves 38,000 business customers and has 6,800 global channel partners. It says it is the largest third-party provider of hosted Exchange services to SMBs throughout the U.S.

www.intermedia.net
www.oakhillcapital.com

http://tmcnet.com/58904.1

Outage Hits Skype

If your attempts to use Skype on May 26 didn't work, you're not alone. As it turns out, many users reported similar issues. In the wake of that, Skype offered alternative sign-on instructions for Windows and Mac users to regain access. The outage came on the heels of the news that Microsoft is buying Skype for $8.5 billion.

www.skype.com

http://tmcnet.com/58905.1

LTE Network Goes Dark

Verizon Wireless is apparently still working to get the bugs out of its new 4G network. On April 27, Verizon confirmed the LTE network outage was affecting customers across the nation, and it announced that the company was working to repair the network on a market-by-market basis. This has been the first outage for Verizon since its 4G network launched and began rolling out in metro areas back in December. The outage is a bit of an embarrassment for the company, which is constantly boasting about its always-reliable network.

www.verizonwireless.com

http://tmcnet.com/58902.1

Struggles Continue for Nokia

Nokia Corp.'s second quarter and full year earnings will be worse than expected, the company recently announced. The network infrastructure and endpoint company attributes that to tough competition, particularly in the smartphone space. Of course, the company has been working to reverse its fortunes. One move on this front involves partnering with Microsoft, a relationship the two companies announced just before February's Mobile World Congress.

ww.nokia.com

Mobile Backhaul: End-to-end Solution

End-to-end Solution for Converged Mobile Backhaul Simplifies Operations

Mobile broadband services are driving a transformation to IP and Ethernet with the deployment of new technologies — Long-term Evolution (LTE), High Speed Packet Access (HSPA), Evolved Packet Core (EPC) and IP Multimedia Subsystems (IMS). The access network between Ethernet edge and IP core must keep pace or become a quality of service bottleneck, and the main component of a growing operational expenditure.

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by Grant Lenahan

Making Broadband Data Profitable and Subscriber-Friendly

Yield Management, Segmentation and Value

Once upon a time mobile telephones burst on the scene. At first they were a luxury good. We charged by minutes, a few people bought them, and things were good, I guess.

As technology progressed, device prices fell, and competition grew, operators became more innovative. We had bucket plans, night rates, weekend rates, friends and family plans, rollover minutes, per-second rating and myriad other innovations. The goals were simple: make plans that were attractive to consumers; differentiated from our competitors; and avoid giving away the value.

Then along came data. Data can be confusing to consumers, since they don't consume megabytes – they consume content. Furthermore, ISPs have trained many Western consumers that broadband IP service is unlimited. This quickly resulted in a proliferation of unlimited plans – or at best plans tied to devices (messaging devices, feature phones, smartphones).

This has led to a number of problems, which can be summarized as one-size-fits-none. One size prices large segments out of the market. One size leaves money on the table for real data hogs. One size creates a commodity good – driving price competition and goring margins. Worst of all, one size means that all data costs the same, high or low value, peak times or not, creating a mismatch between value and price.

Interestingly, emerging markets so far have done better. They have acted less as technologists selling capacity, and more as marketing merchants selling services and value. In some developing countries (and sometimes it seems they are developing right past the West), data is priced by the service you access – e.g. Twitter or music. In others prices vary dynamically, reflecting the relative supply and demand for capacity at any given cell at any given time.

As an industry we must recognize that our success depends on delivering services that are packaged so they are attractive, affordable and profitable. This seems simple, but it contradicts most recent pricing trends. We are also seeing disturbing trends, such as data consumption rising much faster than service revenues. Fortunately, there are also economies of scale in mobile networks; but still, this cannot continue forever. More importantly, it shouldn't.

I want to stress four fundamental principles of successful pricing:

Micro-segmentation

Develop a broad range of tiers or packages that match the needs, budgets and interests of many segments.

Consumer packaging

Price in ways that consumers understand.

Value pricing

Match price to value delivered.

Yield management

Recognize that your inventory changes temporally and geographically.

One concern I hear regularly is that "we need to keep things simple for consumers". True, it must be in terms they understand. But often, simplicity for the consumer means more complexity for the MNO. It's our job as an industry to manage this complexity. Flat-rate pricing is only one way to make things simple; others such as pricing by the service (video vs. VoIP vs. web vs...) are equally simple and allow both the consumer and the MNO to manage budgets, value and profits much more effectively. As science fiction author Sir Arthur C. Clark said "any sufficiently advanced technology is indistinguishable from magic." My job as a vendor apparently is to delivery that magic.

Apparently, magic is more accessible than previously thought. Tata Docomo (India) and tier 1s in CALA both charge by service. Some also charge voice by the second and text (SMS) by the character. Other tier 1 MNOs in developing regions introduce new packages by micro-segment; or to take advantage of major events (football matches, Carnival, etc.). Other creative players assign plans to devices – such as book readers. We routinely see offers created in days – offers that are unique, profitable, affordable – and also generate buzz, which translates to free publicity.

Technologically this is certainly much more complex than after-the-fact, flat-rate billing. But the above examples demonstrate that it's both feasible and affordable to do more – so affordable that real-time systems do all of this in places where ARPU is a tenth to a fourth that of North America or Western Europe. So, with the right vendor, architecture and attitude, neither technology nor costs are the issue.

I strongly urge the industry to think about segmentation along several axes – not merely disposable income. Consumers' needs differ by affordability, but also by willingness to spend, quality requirements, convenience, timeliness, and even image. Make no mistake, some advanced phones are both utilitarian and decorative. What shoes go with a blue X-phone?

I also urge the industry to go back to one of its oldest tricks – off-peak pricing. Compared to voice rates of yesteryear today's networks pose many more variables, and today's analytical technology allows for more complex solutions. In fact, most mobile networks have quite low average utilization, while they simultaneously experience well-publicized congestion. Taking advantage of this paradox, my employer, for instance, has also implemented dynamically varying pricing that takes into account congestion, supply/demand trends, price elasticity, and other factors. Interestingly, this is not simply a method for clearing unused inventory (although it certainly does that), but also a method of gently and positively altering consumer behavior – so that it better matches your real capacity costs. **NGN**

Grant F. Lenahan is vice president and strategist for service delivery solutions at Telcordia Technologies (www.telcordia.com).

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by Fredrik Lundberg

Service Provisioning Bottlenecks Challenge Telecom Industry Growth

New services are the engine of a telecom service provider's profitability and are critical to customer acquisition and retention. In the consumer market, service innovation centers on digital media, social networking, and gaming. Enterprise services are also rapidly expanding from voice and data to include managed and cloud-based services plus valued-added capabilities like traffic prioritization and scalable bandwidth delivery.

Unfortunately, the existing management systems responsible for provisioning and activating services are not designed to meet the current pace of change and the complexity of new service offerings. We are calling this the complexity barrier – the condition in which operational and development systems curtail the pace of service differentiation. The impact of the complexity barrier includes delays in new product introductions, increased operational costs, and inconsistent quality of service delivery.

To better understand this challenge, it will help to illustrate how services are currently provisioned. Take, for example, an enterprise that wants to connect a new regional office to its corporate network using carrier Ethernet services. As a first step, the customer must place an order with the service provider. Next the service provider must translate the order into a relevant service definition including parameters like identifying endpoints, assigning VLANs, setting up class of service parameters, etc. Finally, the service provider needs to implement these changes through detailed configuration changes on the switches, routers, firewalls, and any other affected networking equipment needed to deliver the service.

Ideally, highly automated and robust systems would handle this whole process, but in reality current systems fall well short of the ideal. The existing processes for translating service models into configuration changes are at the heart of the problem. Current approaches are overly dependent on manual intervention from experts with detailed knowledge of the network and, where automated systems are used, they often use unwieldy scripting code that is expensive to maintain and slow to adapt to requirements for new product offerings. In addition, there are limited mechanisms to ensure the consistency of multiple, interdependent configuration changes.

These problems are further exacerbated by new offerings like video transport, IPTV services, 4G backhaul, and enterprise carrier Ethernet services, because these services are much more complex to configure, require frequent changes, and because customers are intolerant of delays or disruptions. Provisioning carrier Ethernet services, for example, requires multiple configuration changes – both in terms of the number of boxes touched and parameters configured per box. The frequency of changes is also high, as services are often turned up and torn down and service attributes, like a temporary increase in bandwidth, are changed on the fly. Lastly, customers expect fast service and flawless quality as they migrate from legacy services like TDM-based links to Ethernet-based services.

To break through the complexity barrier, new approaches to management must be scalable, resilient, and fully automated, flowing from order fulfillment through service provisioning and on to configuration changes at the network element. The IETF developed NETCONF and YANG, two relatively new standards, specifically to address these requirements in the communication between the element management systems and the network elements.

Designed for automated configuration, the NETCONF protocol's transaction management capabilities ensure that complex configuration changes are only committed to live production if they can all be consistently executed for all parameters. Capabilities to validate changes, commit changes in transactions, and roll back to known working state are important components of NETCONF's transaction management mechanisms.

YANG is a data modeling language designed for use with NETCONF. Developed specifically for the challenges of configuration management, YANG is both a powerful and easy to use tool to describe both service and network configuration parameters. YANG for data modeling drastically reduces the cost and time spent on systems development and allows developers to dynamically provision new services in a fraction of the time previously needed.

Exciting new services continue to drive the growth of the telecommunications industry. Unless the appropriate steps are taken, however, the unnecessary complexity of existing service provisioning systems could become a barrier to the industry's success. New standards and technologies are available to address these issues, and now is the time to build the right infrastructure to propel us to the future. **NGN**

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Fredrik Lundberg is CEO for Tail-f Systems (www.tail-f.com).

by Harish Nalinakshan

Managed Networks: Is the Fox Watching the Henhouse?

The rise of managed networks and the managed services providers that support them marks a significant shift in the mobile industry. It is estimated that three-quarters of mobile network operators' infrastructure worldwide is under the management of just four companies: Nokia Siemens Networks, Ericsson, Alcatel-Lucent, and Huawei. These same companies also design and manufacture the network equipment that they now manage.

This puts MSPs in a tricky position. Not only do they now have to manage the equipment they manufacture in house – in some cases, they also have to manage equipment that has been manufactured by their competitors. As such, a number of interesting dilemmas present themselves:

Intellectual Property Protection

Intellectual property (IP) from one equipment vendor can now move freely to other vendors, thereby minimizing the companies' ability to differentiate equipment on the basis of capability. Along with freely-flowing IP, there is an increased possibility for pricing information to be compromised, eroding the ability of equipment vendors to compete on the basis of price and putting MNOs, as customers, in a disadvantaged position.

Scope Management

The ever-present "in-scope, out-of-scope" discussion between MNOs and MSPs brings to light the realities and tensions of outsourcing deals. Mobile networks are constantly evolving and, as such, no legal contract can realistically and fully codify the breadth of changes that may happen. The MSP's desire to manage to its scope and maintain or improve its margins competes with the MNO's desire to showcase increased profitability and improved network performance.

Balancing Resources with Cost

Many MSPs inherit a large number of the MNO's engineering and operations headcount as part of an outsourcing deal. The challenge faced by both parties is to balance the competing demands of improved profitability, enhanced network performance, and timely network upgrades. More often than not, the easiest cost optimization lever for MSPs to use is headcount reduction or off-shoring. In a stable network that has enjoyed good customer ratings, this may not seem like a drastic change. In a network with faltering performance, however, these solutions often wind up as the straw that broke the camel's back.

Solution Bias

Given that the MSPs are also equipment vendors, there is often a bias to offer the provider's own infrastructure products as the solution to network problems. With accountability for network performance issues often difficult to assign, it is tempting for MSPs to capitalize on opportunities to lay bare their competitors' weaknesses and capture a greater share of the network infrastructure dollars for themselves. MNOs need to recognize that while MSPs are partners in spirit, they are vendors first and foremost.

Several elements can help ensure a lasting relationship:

Contract Rigor

Tight contracts can minimize, though not eliminate, the scope discussion. Contracts need to be structured in a way that does not bind either party, allowing both to deliver on their promises.

Effective Performance Criteria

MSPs must be expected to provide guarantees for network quality – quality that should not be compromised through headcount reduction or misguided finger pointing. Tight service level agreements that cover not only macro-level, but also local and site-level performance expectations, are key to ensuring that the resolution of performance issues remains a key focus.

Sourcing Decision Isolation

MNOs need to ensure that commercial decisions for new equipment happen independently of their MSPs, relying on them only for technical and operational input. New infrastructure purchases should include the MSPs' equipment in potential opportunities, but should not be limited to them.

It is estimated that three-quarters of mobile network operators' infrastructure worldwide is under the management of just four companies.

The concept and application of managed network services is here to stay. How the MSPs and MNOs interact with one another is a story that is still evolving. **NGN**

Harish Nalinakshan is principal for PRTM (www.prtm.com), which has a tech and telecom practice serving more than half of the top 20 global communications service providers, more than two thirds of the major semiconductor manufacturers, and 80 percent of global 500 electronics and network equipment companies.

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by Ken Osowski

Real-Time Vs. In-Time Services

The promotion of high-speed mobile broadband services is in full swing as evidenced by a flurry of new television commercials from U.S. mobile service providers. A recent ad shows how a sports event video is interrupted as a critical play is about to be viewed by a sports fan on his mobile device. The commercial shows the ubiquitous animated pinwheel displayed as the video stream is interrupted. All of us have seen this on either our fixed or mobile broadband connections when streaming high-quality audio or video content. Consumers of these services on mobile devices are being told by service providers that going with the fastest mobile network will directly translate to a better user experience. But is this the case?

Mobile video first became popular by enabling access to news/sports portals and to user-generated content via websites such as YouTube. This usage is in fact is characterized by a one-way streaming delivery of this video content. The other case for mobile video usage that has recently become popular is when a mobile subscriber connects to another person for a video call. This case is characterized by establishing a two-way video communication between the video call participants. Both of these video usage scenarios started out as free services, but this is changing as mobile service providers look to monetize video services. IP protocols have been the foundation of the Internet and have made these freemium services possible, but they are not inherently deterministic and cannot eliminate the buffering pinwheel or gaps in audio/video communications. This has resulted in a large number of freemium services where users just learn to cope with interruptions in these services.

In the one-way media content delivery case, the push for monetization has been to offer premium media streaming services that provide higher quality audio and video content. This, in most cases, is licensed material such as the music offered by Pandora or the movies available from Netflix and Vudu. This has created a new class of streaming media users who sign up for various subscription models offering licensed music and movies. To capitalize on this, over-the-top service providers have taken advantage of technology called content distribution networks. As an IP network overlay, CDNs strive to minimize the buffering issue and enforce usage constraints on licensed media content. The key functional elements of CDNs that help minimize media buffering include a network design with careful physical distribution or caching of content at the edge of the network closer to users, media redundancy schemes, along with adaptive delivery speed techniques that can mask interruptions in the media flow.

In the two-way video communication case it is not enough to just eliminate network latency since the video has to be kept synchronized between communicating parties in real-time. This is in contrast to the just-in-time nature of one-way video, where caching and endpoint buffering can be applied. Two-way video communications require that a real-time session is established between the videoconferencing participants at the start. This can be done using the session initiation protocol to set up the video sessions. The introduction of session management for two-way video communications is an overlay to IP transport networks just as content distribution mechanisms are for one-way media streaming.

SDNs are focused on keeping end-to-end two-way communications whole, whereas CDNs are focused on bringing the media closer to the endpoint in hopes of getting there without interruption.

This has given rise to the term session delivery networks. SDNs are focused on delivery of real-time, high-quality, two-way communications over IP networks. When real-time session management is integrated with application service logic, service providers can offer their users high-value, rich media services that service providers can monetize. SDNs are focused on keeping end-to-end two-way communications whole, whereas CDNs are focused on bringing the media closer to the endpoint in hopes of getting there without interruption. Also, in addition to addressing quality of service, SDNs are focused on quality of experience factors that encompass session security, interoperability, and regulatory compliance.

In combination with core IMS network elements, the SDN is able to establish that the network capacity is available make a video call in the first place. SDNs will continue to play a prominent role as 4G mobile networks evolve to support end-to-end IP communications and network speeds reaching well over 100mbps. **NGN**

Ken Osowski is director of service provider product marketing at Acme Packet (www.acmepacket.com).

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by Brough Turner

Bandwidth Management – Sell Speed, Not Caps

Internet access providers face real economic issues, but solutions thus far have been less than stellar.

The first mistake was throttling or blocking specific applications, like peer-to-peer file sharing. This violates a key Internet advantage – its option value. The Internet is an open, flexible platform supporting almost any communications application including those that haven't been invented, yet. The justifiable response to application-specific throttling was a call for network neutrality.

A second mistake was the introduction of caps with overage charges to a service that had been flat rate and unlimited. People prefer certainty and will pay extra for a flat rate service and it's true the cellular industry successfully offers tiered plans (for minutes) with caps and overage charges, but the cellular industry started with high per minute prices and came down, repeatedly. The Internet access market started with speed tiers and is now trying to add data caps. That's difficult to swallow, plus data caps are completely alien. What is 10 GBytes, and how long does it last?

ISPs can do better, but it requires some understanding of network economics and human nature. Networks have excess capacity most of the time. They are built for a peak capacity that only occurs an hour or two per day. The rest of the time the network is underutilized. During off times (the majority of the time), the cost of handling incremental traffic is effectively zero, and it remains zero until traffic levels approach congestion. That's why cellular companies offer free nights and weekends – their incremental cost is literally zero and free sounds great!

So how does an access ISP proceed? First, sell what people understand. Sell tiered speed bundles, but complicate the bundle just a little. Each bundle should include two speeds – one for interactive traffic (web browsing, gaming and VoIP) and non-interactive (everything else, including video streaming). The interactive speed is large, for marketing purposes and to make speed tests look good. The non-interactive speed can be tiered to support one video stream, or two, etc., with a surprisingly small impact on network utilization (Netflix SD movies require less than 700kbps). With this approach, no application is being blocked or throttled, and the technology that formerly throttled specific applications can be used to accelerate the interactive applications, although the needed prioritization can frequently be done in existing routers without specialized bandwidth management appliances.

Finally, take advantage of off-peak capacity to offer free speedups for non-interactive applications (like backup, file sharing and bulk transfers) during non-peak times.

The secret is to sell what people understand (speed), offer bandwidth management as a benefit, and market unused bandwidth as a freebee. **NGN**

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

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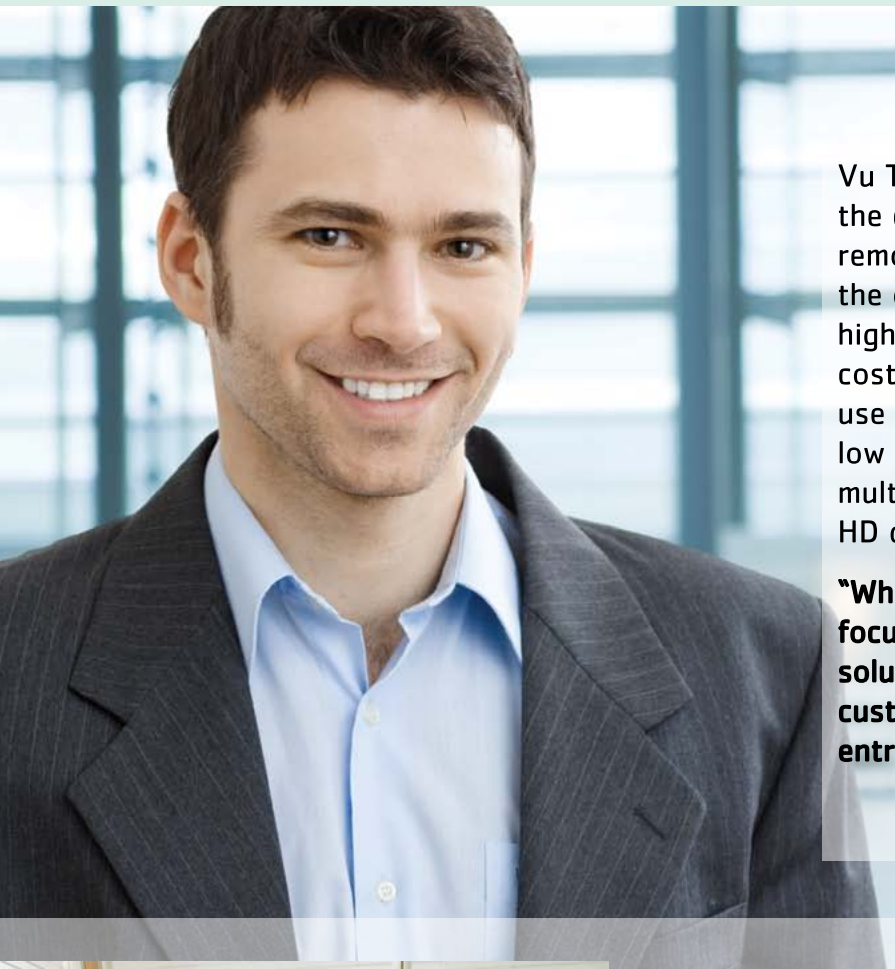

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by Jim Machi

The Future of Mobile Value-Added Services

From a pure business perspective, a mobile value-added service is an additional service for which subscribers pay extra. In other words, the service offers some kind of value, and the subscribers are willing to pay for it. Today, the two most popular services worldwide are short message service and voicemail, but there are literally hundreds of them, differing around the world and ranging from CRBT to specialized portals to daily jokes or horoscopes. With the advent of 3G and even 4G services worldwide, and the additional bandwidth these networks offer, several new trends are emerging.

We can categorize the services into four major mobile VAS categories: advanced network services, messaging, entertainment and mobile commerce. And each of them continues their migration forward.

Advanced Network Services

While ultimately HD voice (wideband audio) will become the typical codec used in mobile networks, right now HD voice, for both a conversation and for any kind of mobile value-added service, can be viewed as an advanced service.

Another key network service is conferencing and videoconferencing – on all modes of devices, including laptops, mobile phones and tablets – on all networks, including mobile networks.

Additionally, location-based services are becoming increasingly attractive as security and safety concerns mount. Parents can keep track of their children or even find a lost phone. Marketing departments are also looking at location-based advertising that offers information about local attractions or shops based on a person's location in a café or restaurant.

Messaging

Trillions of SMSs are already sent each year, and due to social network sites such as Twitter and Facebook, with an increase in M2M, and with businesses using SMS to proactively reach customers to keep in touch with them, it seems SMS growth is almost boundless. SMS, though, will evolve and become more of a "rich" medium. In pre-paid markets where there is no voicemail, both voice SMS and video SMS are growing.

Entertainment

The MVAS category that creates the most excitement is entertainment. The options are many, and some services are localized while others have universal appeal.

The earliest entertainment-related services were audience polling to decide the winners on reality-based TV shows, music selections played in lieu of a dial tone, and dating services with chat rooms that use conferencing technology. Some entertainment services have worldwide appeal, but need to be tailored to regional tastes. These include subscriptions to joke of the day and horoscope readings. Voice blogging is also popular, as are network-based multi-player games, and of course, gambling.

Perhaps the most popular entertainment service is viewing videos that are streamed to the handset from YouTube or other sources, as well as sports highlights and newscasts. Many of these over-the-top services utilize the broadband wireless network, but are not offered directly by the network operator.

As interest in video entertainment grows, so will the desire for high quality of experience, or QoE, especially if a viewer is paying a premium for it or it is accompanied by advertising, since the advertiser wants to make the best impression possible. In addition, the ability to provide quality video on a wide range of end user devices and to be context-aware will become increasingly important, whether the device is a large-screen HDTV, a laptop, a tablet, or a mobile phone. Software that evaluates and tracks QoE will become increasingly important.

Mobile Commerce

As banking over the Internet on a laptop or a desktop grows in popularity, the next natural step is banking from your mobile device. Video-enhanced IVR systems make mobile bank transactions easy regardless of location, and speech recognition can provide security by recognizing the speech patterns of customers and making PIN code keystrokes unnecessary. Mobile stock transactions might also benefit from this technology.

Another category beyond mobile banking is mobile money and mobile payment. In developing countries, mobile money for the "unbanked" is a growing mobile service. Operators already have a billing mechanism in place, allowing the mobile phone to potentially replace credit and debit cards. Mobile health care services are also enriching traditional service access.

Finally, mobile advertising is a steadily growing multi-billion dollar industry. The Internet appears free-of-charge to users, yet they are constantly bombarded with ads and offers. The mobile industry seems to be following the same model with subscribers often choosing to view a commercial rather than pay for a service. Print advertising is beginning to contain an alphanumeric code or QR icon that can provides access to a short video or product picture on a mobile phone.

Mobile value-added services have always added an innovative element to our industry. With increased network capability and increased user capability, the service innovation will likely accelerate. It will be exciting. **NGN**

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

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by William E. Steele

Live Streaming Coverage with 3G & 4G Networks

There are a lot of queries on the Internet about using 3G and 4G networks to provide live streaming coverage from an event all the way to the viewer's laptop or smartphone – without using wires – like the big TV networks do.

The big players use electronic news gathering, or ENG, vehicles with radio, microwave, satellite, multiple cameras and on-site switching among these cameras to send you all those multi-angle perspectives from the event. It's called portable live production.

Can an independent online producer use the new technology and IP networks to achieve some of the same polish? It's possible. It is still expensive, but not nearly as expensive as electronic news gathering vehicles, which cost hundreds of thousands of dollars and cost more to operate.

Building a portable production studio will allow you to go wireless with multiple cameras at the event; link the multiple cameras to a local video switcher by Wi-Fi-capable video converters, like a Microseven M7-DVS1PWS (wired connection works too); and direct the broadcast with the video switcher – all enable switching cameras, and some enable instant replay, ad playout from playlists, virtual sets, streaming statistics/text, and more.

To secure a video delivery service on the Internet cloud, set up your laptop for transmission to a video delivery service on the cloud like KenCast's Vazzt (www.vazzt.com). You can download the VazztCaster software (that is all you need from this service) and install it on your computer at no cost.

Subscribe to one or more 3G/4G data services – AT&T's and T-Mobile's UMTS, Sprint's EvDO and/or WiMAX, and Verizon's EvDO and/or LTE. One wireless connection will work, but having more than one provides more bandwidth, which enables video streaming with better quality.

Then connect the video switcher to the laptop.

Now you're ready to launch the delivery service on your laptop. If you use VazztCaster, it will automatically detect 3G/4G networks at the event and accelerate on them; bond these 3G/4G networks together to get maximum bandwidth; and put forward error correction on the 3G/4G networks to clean them up, which is especially valuable in noisy urban environments.

You can broadcast from the portable production studio into the laptop for transmission to the video delivery service on the Internet cloud on the bonded networks. The service on the cloud lets your viewers access your content by clicking on your own website. The service will then deliver your video stream to your viewers anywhere on the Internet worldwide.

And you can invite all those viewers running around with smartphones and laptops to your website. The video delivery services on the cloud now enable you to charge for your broadcasts.

Camera Connection

The camera connection also works without a video switcher – just connect a single camera to your laptop and transmit. With an HDV camera or a DV camera you can connect directly to your laptop with a firewire cable. For a better camera, it is now possible to use USB 3.0 input on your laptop. Black Magic's Intensity Shuttle enables camera output of HDMI, S-Video, Component or Composite, and USB 3.0 into your laptop.

The Need for Acceleration, Bonding, and Error Correction

The 3G/4G IP networks from carriers provide much less bandwidth for upstream into their network (from the event to their network) than they do downstream (from their network to the viewers). Software like VazztCaster uses acceleration on the carriers' IP networks and bonds multiple networks to get enough bandwidth for video capture on the upstream. Two networks, each from a different carrier, yield more bandwidth than two from the same carrier.

Can an independent online producer use the new technology and IP networks to achieve some of the same polish? It's possible.

The acceleration and bonding realizes more bandwidth, but the 3G/4G networks, particularly in urban areas, are noisy. This results in lost packets and poor quality video, even on bonded networks that provide higher bandwidth. The Vazzt products from KenCast embed forward error correction on the IPTV stream from the event to the central hub. In most cases this is sufficient to produce a near flawless stream.

Charging for Your Live Video Broadcasts

Vazzt Video Delivery Service provides e-commerce support for pay per view and paid subscription services. You can charge you viewers by the event or by a subscription to a series of events, and they can pay you by credit card. Vazzt charges $0.25 per Gbytes delivered to your viewers. For example, a live video broadcast to a viewer at 320x240 resolution, 30 fps, for a three-hour event will require about 1.0 Gbytes and cost the producer $0.25 to deliver. **NGN**

William E. Steele is chairman and CEO of KenCast (www.kencast.com).

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by Paula Bernier

Still 'Crazy' After All These Years?

NPRG Analysts Say Mobile Traffic Will Surpass Most Estimates, May Lead OTT Players to Buy Broadband Operators

Years ago Telephony magazine ran a story for which Victor Schnee graced the cover, along with the headline "Is This Man Crazy?"

The article discussed a 1990 Probe Research study Schnee had just written about what would happen in the wake of divestiture, how demand would explode, and why the telcos' wireline business model was going to implode.

Fast forward 21 years and these predictions don't seem so crazy after all. But, despite his track record, Schnee's latest musings are once again likely to rattle some cages.

The analyst now contends that Cisco's Visual Networking Index greatly understates future mobile data growth. And this bigger-than-expected mobile boom, he says, could lead to the acquisition of a major wireless provider by an over-the-top company like Apple, Facebook or Google.

Schnee lays out the details behind this thinking in the study "The Mobile Traffic Deluge & Its Implications for the Communications Industry," which he co-authored with Al Boschulte. Both Boschulte and Schnee are telecom veterans and senior directors with New Paradigm Resources Group, a Chicago-based research and consulting outfit.

The Problem with Cisco's VNI

The Cisco VNI estimates that data traffic growth will increase 100 percent year over year. But Cisco could be off by whole number multiples, Boschulte says. That's because Cisco based its assumptions heavily on what was happening in the past, failing to look at a variety of factors that are currently in play, according to Boschulte and Schnee.

NPRG in its report is referring here to the mobile data information provided in the Cisco VNI issued in February. But the firm says that information on mobile in Cisco's new report, released last month, uses the same forecast as the February report. Table 2 of the newly released Cisco VNI has the same 92 percent growth rate forecast in the earlier report for mobile and 6.2 exabytes per month of worldwide mobile traffic, notes NPRG, which believes this is off by a factor of 10.

Especially troubling to NPRG is the fact that the Cisco VNI bases its assumptions on the time frame from 1997 to 2001, when the Internet was growing up, and said the next several years will be like that, Schnee says. But things are very different now on a number of fronts, he notes.

Back then the PC was the main endpoint, but today new connected devices are emerging all the time – and the prices of such devices are expected to decline rapidly over time, says Schnee. And the new phones are much more powerful and have multiple cores, says Boschulte. He adds that initially forecasts indicated 50 percent of phones would be smartphones by 2015; now, 100 percent are expected to be smartphones because there will be no price difference between smartphones and dumb phones.

"All these phones will be emulating the iPhone, and I think most of the world is not grasping that fact," Boschulte says.

Additionally, a decade ago there were few personal applications, but now apps are multiplying like crazy. And many of these applications are mashups, which drive even more activity on the network. Schnee adds that smartphones now also allow multitasking, and that's only going to grow as some new devices come with multiple screens.

Also, during the late-1990s/early 2000s time frame, Schnee continues, there was little video. "Now video is the rage, and [it's] growing incredibly rapidly," he notes.

Analysis and Imagination

To get their numbers, the NPRG analysts looked at where data growth is coming from and where it is most likely to show up going forward. They adopted a bottom-up methodology to forecast where cell sites would grow and where devices would grow. They

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also tried to model which percentage of users would be using which applications. As Schnee notes, this required some imagination, but then that's in large part what forecasting is all about, he says.

They also considered video-centric apps, data-centric apps, and they looked at three factors underlying growth and demand for such applications. One of the factors is base load demand, which is the demand on the network even when the user is doing nothing. Another is user-initiated demand, which considers the user numbers and profiles of a cell site at busy hour and the load they would create both upstream and downstream. The third factor is the interdependence of applications, which considers the extent of traffic that can be generated by automatic triggers that happen if a user takes a particular action. For example, if a user changes locations this could trigger the phone to update the user's social network status.

So NPRG looked at all that and estimated the number of users likely to be on a given cell site at a peak time of day, what they were likely to be doing, and the resulting megabit load on the cell site. And then the analysts modeled the distribution of cell sites to get an estimate as to the total traffic on networks.

This modeling leads NPRG to its conclusion that Cisco's VNI is way off.

"100% growth year over year looks very low," says Boschulte, adding that the Cisco numbers would probably be more applicable to forecasts for rural areas.

"Cisco's numbers are likely to happen at 10x or more," adds Schnee.

The Value of Connections

But, wait, you might be thinking. What about the fact that some network owners like AT&T are now implementing data caps and other packaging and pricing that could potentially put a lid on bandwidth usage?

Schnee says there's no way that's going to stop, or even significantly slow, the mobile data deluge. And he called a recent Wall Street Journal article suggesting that could happen "a howler."

"The carrier model has always been based on trying to administer demand growth, and it's been breaking apart in different ways for the last 20 years," he says.

The traditional telcos frequently have tried to put the brakes on progress in communications. Schnee says service providers resisted getting into the data world as long as they could, and that texting happened despite the wishes of the cellular service providers.

But network operators' efforts to tamp down demand is not going to work this time, he says, because over-the-top companies like Apple, Facebook and Google aren't going to stand aside and let that happen. Ample network capacity is necessary for such companies to continue on their paths of success, and these OTT companies will do whatever they must do to ensure the bandwidth their businesses and customers need remains available and affordable, Schnee contends. He goes on to say that OTT types see the network as just a cog in the application-delivery machine. (At another point in the conversation he and Boschulte compared the network to a door on an automotive assembly line.)

Clearly, an intermediary step would be for an Apple or a Google to pursue an MVNO relationship with a wireless operator or operators, says Boschulte. The MVNO world got a bit of a black eye a few years ago when efforts by Disney, among others, to sell branded cell phone services flopped. But the OTT companies are better positioned to be MVNOs, he says, since they have both the brands, and the products and services, to drive usage on mobile networks.

Of course, it's not out of the realm of possibility that over-the-top players would try to acquire wireless service providers. (In fact, as Schnee notes, Google has been circling around the edges of network ownership for some time. Remember Google's involvement in the citywide Wi-Fi drive; its alleged interest in the recent spectrum auction; and its current plans to build a fiber-to-the-home network in Kansas City?)

At their current valuations, the OTT A-listers certainly have the resources to pursue such deals.

As the NPRG analysts note, a company with a valuation in the hundreds of billions doesn't have to think much about buying a company with a $15 billion valuation that will enable it to continue to make things work. And if telcos don't continue investing in next-generation networks at a pace that will enable customers to continue enjoying existing applications and have a good experience with new ones, that's just what some of these OTT types might try to do, they say.

Pointing out a recent report indicating that Apple could soon have a $2 trillion valuation (and, according to at least one Wall Street expert, may already be there), Schnee says: "When you're on a path like that, you just can't let anything stand in your way." **NGN**

by Paula Bernier

Alcatel-Lucent Ventures, Ericsson Ready Cloud-Based Solutions to Help Wireless Carriers Address Mobile Boom

There were 600 million mobile broadband subscribers last year. By 2016 that should reach 5 billion. At the same time, as this month's NGN cover story notes, mobile devices and applications are becoming faster, more intelligent and, thus, more bandwidth intensive.

To help wireless service providers contend with the onslaught of mobile data as a result of all this, and to help them insert themselves into the content chain in a more meaningful way, two major telecommunications equipment manufacturers – Alcatel-Lucent and Ericsson – are providing broadband network operators with analytics and CDN-related tools and services.

Alcatel-Lucent Ventures last month unveiled a managed service called AppGlide Video Analytics that gathers, correlates and analyzes information on the network so service providers can improve the user experience; collect hard data in an effort to appeal to advertisers and content companies to put their content on these service provider networks; and understand the performance that their own CDN partners are delivering.

The four pillars of AppGlide are:

- Quality of experience: This looks at all aspects of network performance – such as buffering, buffering counts, round trip time delays, etc. – and how all that impacts the online experiences of individual end users.
- CDN performance: This looks at traffic volumes, traffic rates, etc.
- Content usage and viewer engagement: This provides data on things like content popularity, so service providers can approach content companies and offer to host on their networks the same or similar content their subscribers enjoy.
- Cross-correlation analytics: This analyzes how quality of experience affects viewer engagement. For example, it could provide data on the relationship between the quality of video delivery and how long a user watches video.

The quality of experience aspect of the solution is aimed at helping service providers deliver a higher level of service in an effort to help them reduce churn. To measure QoE, Alcatel-Lucent Ventures has a software-based player plug in, which looks at everything back to the last mile. The company also has a solution in the network that downloads video so it can gather metrics related to it.

AppGlide Video Analytics also can help service providers monetize their networks by identifying popular content and bringing it into their networks for better performance, says Mark "Buck" Peterson, general manager of Alcatel-Lucent Ventures, a technology company and business incubator under Bell Labs. Service providers could use this on-net CDN internally to improve the user experience related to their own content, or they could offer it as a service to advertisers (13 percent of videos watched online are advertisements, according to Peterson), other content companies, or over-the-top content aggregators.

Putting popular content on the network closer to the customer not only improves the customer experience, it also can save the content provider money, Peterson says. He explains that the HBOs and Disneys of the world can spend a lot of time and money formatting content for better encoding rates, but if the network is not delivering at that quality, these efforts can be a waste of money. The data that AppGlide Video Analytics delivers can let content owners know what quality network they're getting. "That's analytics that the content aggregator just does not have today," Peterson says.

The on-net CDN solution is in the network and gathers Netflow data from routers to learn what content is the most popular. It also leverages Alcatel-Lucent Ventures' cloud-based data warehouse. This positions service providers like the telcos and cablecos to compete with traditional CDN providers like Akamai and Level 3, Peterson acknowledges, and the telcos and cablecos are well positioned to do that because they can manage every part of the network from the core to the local loop.

AppGlide Video Analytics, which runs on Amazon's Elastic Compute Cloud, is available for trial now. The company declined to provide pricing, but said that it will charge service providers for AppGlide Video Analytics on a per subscriber basis.

The unveiling of AppGlide Video Analytics follows by about three months the news that Akamai and Ericsson have joined forces. In February at Mobile World Congress the companies announced they are developing software that will enable Ericsson gear to interface with a policy control solution that ties into the Akamai CDN.

Ericsson declined to specify which of its products will support the Akamai-related software, saying the software might run on existing or new Ericsson "nodes" in the network, or even on networks not based on Ericsson infrastructure. (Vestberg at one point mentioned the word "appliance".)

Ericsson declined NGN magazine's late May/early June requests to provide an update on this effort. However, that could have something to do with the fact that Ericsson in mid-June announced plans to buy Telcordia, which could bring something new to the table in this realm. **NGN**

by Christopher Cullan

Repeatable Processes Drive Automation

Recently I came across the following definition of operational excellence: "It is the result of applying the scientific method to achieve the goal of a business." That sounds simple enough, but what does it really mean in the context of discussing differentiation?

For communications service providers, this discussion is fundamentally about the transition from providing dumb pipes to the creation and delivery of high-margin services. High-margin services are another way of saying they are valued. There are many observable trends in the market for providing high-margin services, including application-aware networking, carrier Ethernet-based services like EPL and EPLAN, managed services of various flavors, and of course the cloud.

Ultimately, CSPs must find a way to deliver value to their customers in a manner that keeps them profitable. Although best practices for differentiation often focus on new lines of business and higher margin services, these represent the end state of the solution.

The other, perhaps less attractive component is the journey to get to that end state, driven by the engine of the CSP – operations and IT. Here, operational excellence is required to support the survivable and profitable delivery of high-margin services. For example, if the CSP's current operation is suffering from high costs of integration and customization (as many do) it becomes incredibly difficult to launch new services in a reasonable time frame. Additionally, the resulting cost of those services drives the pricing higher than what the market is willing to bear.

The term operational excellence has its roots in the manufacturing sector but has far broader consequence; the TM Forum has done a good job at breaking down this concept into three aspects – tangible cost reduction, operational agility, and efficiency improvement – all concepts that help the CSP to differentiate. Cost reduction helps with the margin squeeze and enables some flexibility on pricing; operational agility enables the CSP to take advantage of market opportunities and rapidly adapt to the environment; and lastly, efficiency improvement helps the CSP do everything better and faster.

Perhaps because of the shared legacy of the telecommunications industry, there is a disparate share of proprietary processes and technologies within a CSP's operation. These require costly customization and integration just to keep things up and running. Not only are there silos within the CSP, but they exist between service providers and their partners/vendors, making common strategies (such as outsourcing and partnering) a challenge with a commensurately large capital expenditure.

When looking at what works and what doesn't, success always comes down to a common OSS/BSS architecture that enables repeatable processes that then drive automation. This automation results in both tangible cost reductions as well as efficiency improvements. Another key ingredient to this concept of a common architecture is that the CSP as a whole can make decisions based on the same information. Engineering, operations, product management, customer care, etc., all leverage a shared source of data for their needs so that decisions are more effective with faster implementation. The last ingredient is to empower the decision makers across the various organizational functions.

Last year I spoke about network service performance assurance with a senior level director of a mobile network operator who related the challenge of realizing a common, automated and collaborative model – namely, end-user adoption. The mechanism to accelerate adoption is to empower the users, the engineers, the operators, the service desk, etc. The toolset should be common, but it is equally important that it is heavily adopted and used by the CSP's functional organizations. Therefore, it is essential to empower those organizations to be more efficient and effective; that is, not only doing things well but doing the right things.

During large transformation projects, or even the smaller project-focused implementations, end user empowerment is at the heart of operational excellence, meaning people actually use the tools and processes. As simple as that sounds, it's the foundation for success. For example, if a NOC engineer creates a fantastic set of dashboards for real-time availability monitoring on an entire service chain with custom KPI-based thresholds, the engineer should be able to instantly share it with his or her colleague or boss. They should be able to access it remotely with a smartphone during off-hours. This empowerment can extend right to the CSP's customers so that they, too, can understand, analyze, and troubleshoot their applications and infrastructure including those aspects provided by the CSP. This capability frees up the CSP's service desk, provides greater provider-customer "stickiness," and drives a partnership-based service model.

A solid CSP engine running a common, adaptable, automated OSS/BSS infrastructure that empowers the CSP's stakeholders, both internal and external, will inherently accelerate the delivery of high-margin, high-value services and ensure the goals of the business are met. **NGN**

Christopher Cullan is product marketing manager of business services solutions for InfoVista (www.infovista.com).

by Bill Diotte

Out of the Comfort Zone
Making the Leap to Policy 2.0

It's just shy of a year since AT&T gave up on the flat-rate, unlimited plan and industry observers marked the end to the mobile broadband buffet. In March of this year, Ralph de la Vega, president and CEO of AT&T Mobility and Consumer Markets, remarked how over the past four years the company's data traffic increased by 8000 percent.

Mobile networks are under siege, and demand is outstripping revenue growth sevenfold. Operators have been using policy control technology to make sure the vast majority of customers receive their fair share of bandwidth. But bandwidth management and all-you-can-eat plans can go only so far toward delivering superior mobile customer experiences. The new yardstick for competition is metered rates and paying for value. For operators to find new ways to monetize their networks, it is now time to shift out of the policy management comfort zone of bandwidth management, tiers and capping to deliver real differentiation based on policy-enabled apps and services powered by next-gen policy management.

Policy management vendor selection has never been as critical a decision as it is today. By maintaining a traditional policy and PCRF approach operator policy infrastructure is at risk of being overwhelmed by the sheer volume of transactions and sabotaged by the long lead times required to develop and deliver competitive, new services. Policy 2.0 technology must address today's most critical operator challenges and build a future-proof platform for tomorrow's dynamic and expansive networks.

Operators are demanding agility, massive scalability and cost certainty as they look to solve their capacity crunch, deliver new subscriber services, and increase ARPU simultaneously. Policy management platforms that can provide these capabilities will greatly enhance the ability of an operator to make the necessary shift and succeed. Let's take a look at each of these capabilities to understand why they matter – especially at this turning point in the industry.

Agility

There is much to be learned from operators in hyper-competitive markets, where new service deployment is already a critical factor in competing successfully. These innovative providers are offering services that are highly tailored to their markets – such as a Saudi Arabian service that blocks intrusive communications that occur during daily Muslim prayer times.

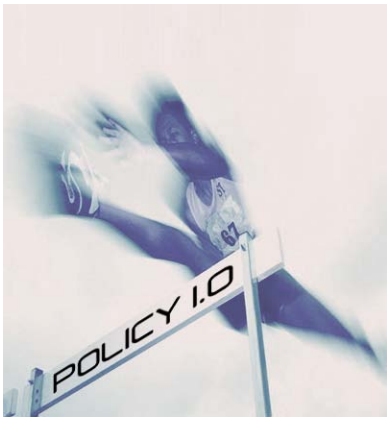
And when it comes to agility, it's no longer acceptable or feasible for operators to rely on scarce policy vendor developer resources for new features and policy-driven services. This Policy 1.0 model does not scale and interjects lead times that severely limit first-to-market upside opportunities. When selecting a policy management platform to handle today's and tomorrow's challenges, operators need to make sure that they can develop their own services – so that when marketing looks to deploy policies that will give them a competitive edge, they can build these services with resources and timeframes that they control in a matter of days rather than months.

In short, agility means leveraging a policy platform that can deliver rich apps and services without requiring changes to the core code.

Scalability and Performance

3G network operators and those moving to 4G need to ensure that their policy platforms have the kind of scalability and flexibility to handle far more policies, making it easier to deliver complex and highly differentiated, personalized services that are well integrated with real-time charging and subscriber profile intelligence systems.

Policy performance is already being strained, and this is before the rapid proliferation of over-the-top voice and video services that are poised to occur over mobile networks within the next one to three years. With an advanced, virtualized policy management platform, such a highly demanding transaction environment can be realized by distributing and load balancing across any number of servers, substantially reducing hardware costs and allowing scale to be readily added as required.



Equally important as transactional performance and scale is the ability to make the transition from bandwidth management only policies to a richer set of service-enabling policies. Because richer services require multiple policies to be applied in unison, it is important to know that your policy solution can efficiently process many more rules even while managing far more active subscriber sessions.

Cost Certainty

Capital and operational efficiency will continue to be key goals for service providers. So, even as new, personalized services contribute more to operator topline growth, operators will need to continue to drive down their costs. By using open and rapid development methods and by delivering the high performance associated with massive data center virtualization, Policy 2.0 technologies are designed to provide high value at a fraction of the cost associated with service creation of the past. Service development and buildouts will become more predictable as operator IT groups capitalize on policy-driven service creation and fully leverage massively scalable policy. NGN

Bill Diotte is CEO of BroadHop Inc. (www.broadhop.com).

by Michael Khalilian

Smart Grid Forum Launches

The NGN Forum recently announced the technical working groups that will comprise the Smart Grid Forum. These new groups will cover smart grid topics such as M2M, NGN information technology, security, infrastructure and network management, green energy, applications development and business intelligence, and Advanced Metering Infrastructure. A full list of working groups with descriptions can be found at www.SmartGridForum.org

With the rapid advancement of the smart grid and smart meter deployment across the U.S and globally, utilities will benefit from the know-how of the telecommunications industry. Utilities can utilize this knowledge of applications development, infrastructure and network management, and OSS/BSS/security to help them manage their new interactive customer relationships. The NGN Forum working groups will help to bring the experience and expertise of the telecommunications industry to the utility industry through the Smart Grid Forum.

The NGN Forum working groups will help to bring the experience and expertise of the telecommunications industry to the utility industry through the Smart Grid Forum.

The Smart Grid Forum is designed to bring together communications service providers and suppliers with utilities to discuss the building, monitoring and securing of utility networks as they pertain to smart grid. The Smart Grid Forum aims to create best practices for collaboration between the industries through the following working groups:

- Security

The security group will develop best practices and standards for the security of customer information and the networks that manage that information, as well as the secure transmission and distribution of energy globally.

- Infrastructure/Network Management

The infrastructure/network management group will enable NEMs to collectively meet and discuss best practices around the roll out of utility networks.

- Green Energy

The green energy group will focus on innovation in the delivery of energy efficiency management solutions and best practices.

- Applications Development

The application development group will develop applications to further smart grid technologies. Topics may vary from energy efficiency, to electric vehicle, to time of use pricing and management.

- Business Intelligence/Advanced Metering Infrastructure

The business intelligence/AMI group will concentrate on effective reading of AMI data and work with utilities on how to leverage that data intelligence for improved operational efficiency and customer experience.

- Utilities and Integrators Advisory Board

The board will develop directions for technical, business and plugfest/interoperability working groups.

These groups meet monthly to discuss activities that will further the charter of these organizations and to develop best practices, standards and excellence in these areas.

If you are interested in becoming a member of the Smart Grid Forum or in participating in any of the technical working groups listed, contact info@smartgridforum.org **NGN**

Michael Khalilian is president of NGN, IMS and Smart Grid Forum (www.NGNforum.org).

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