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- GL's Vijay Kulkarni on the VoIP Train
- Nathan Franzmeier on Emergent's Vision

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Internet telephony is revolutionizing telecommunications through the convergence of voice, video, fax, and data, creating unprecedented opportunities for resellers, developers, and service providers alike. INTERNET TELEPHONY® focuses on providing readers with the information necessary to learn about and purchase the equipment, software, and services necessary to take advantage of this technology. INTERNET TELEPHONY® readers include resellers, developers, MIS/networking departments, telecom departments, datacom departments, telcos/LECs, wireless/PCS providers, ISPs, and cable companies.

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The VoIP Authority

By Greg Galitzine

'Round the Horn

As we reach the midpoint of 2006, I thought it would be prudent to take a quick look at a couple of companies — one in the service provider space and one in the enterprise space — and check in on their progress. I'll also toss in some developer related information as well.

Skype (news - alert) enjoys some of the best brand recognition in the world. With countless millions of downloads and a high-profile acquisition by eBay, Skype is considered by many to be a poster child for the VoIP industry. Never mind that Vonage just went public, when eBay acquired Skype, the industry's most creative minds started to speculate on how the former would integrate the latter. Consensus was that eBay would combine Skype functionality with eBay's product and service listings, enabling prospective buyers to contact sellers with questions related to their offerings.

Well, it's finally here.

eBay announced it would add a "Skype Me" button to certain categories of listings connecting buyers and sellers in 14 categories of products where eBay determined instant communication can better facilitate trade, such as automotive GPS devices, NBA basketball trading cards, diamond solitaire rings, real estate, and cars and trucks.

The news comes fresh on the heels of an agreement with Dell, (quote - news - alert) whereby Skype software will come preloaded on Dell's XPS mobile systems — the XPS M1210 and XPS M2010.

The company also recently announced that all U.S. and Canadian Skype customers can now make free SkypeOut calls to traditional landline and mobile phones in the U.S. and Canada. Free SkypeOut calls to the U.S. or Canada will be available until the end of the year, but I find it hard to imagine Skype will revert to a paid model, at least in these markets.

On the enterprise side of things, the good people at Inter-Tel told me that their forthcoming SIP communications solution, the Inter-Tel 7000, is still in trials awaiting imminent general availability.

A native SIP (define - news - alert)communications system that scales up to serve businesses with 2,500 users, the Inter-Tel 7000 provides customers with all the features and functionality users have come to expect from traditional PBXs. On top of that, the Inter-Tel 7000 is fully redundant and secure and supports Inter-Tel's complete portfolio of IP applications and devices, including its contact center, collaboration, and conferencing solutions.

The system features embedded presence management capabilities, as well as a number of advanced mobility features designed to facilitate seamless communications between the enterprise network and cellular devices. The Inter-Tel 7000 can be implemented either as a premises-based or tenanted solution.

I'll throw in some info from the developer space as well: TMC is hosting the third annual VoIP Developer Conference this August 8–10 at the Hyatt Regency in Santa Clara, CA. This year's event promises to be the largest developer conference to date, with over 1,000 attendees expected.

The conference program has been posted online at http://www.voipdeveloper.com. If you're interested in learning more about the hottest areas in communications application and product development, there is simply no better venue.

Well, there you have it, a quick look around the horn as we hit the midpoint of 2006. It's hard to believe we're half way to 2007.

Greg

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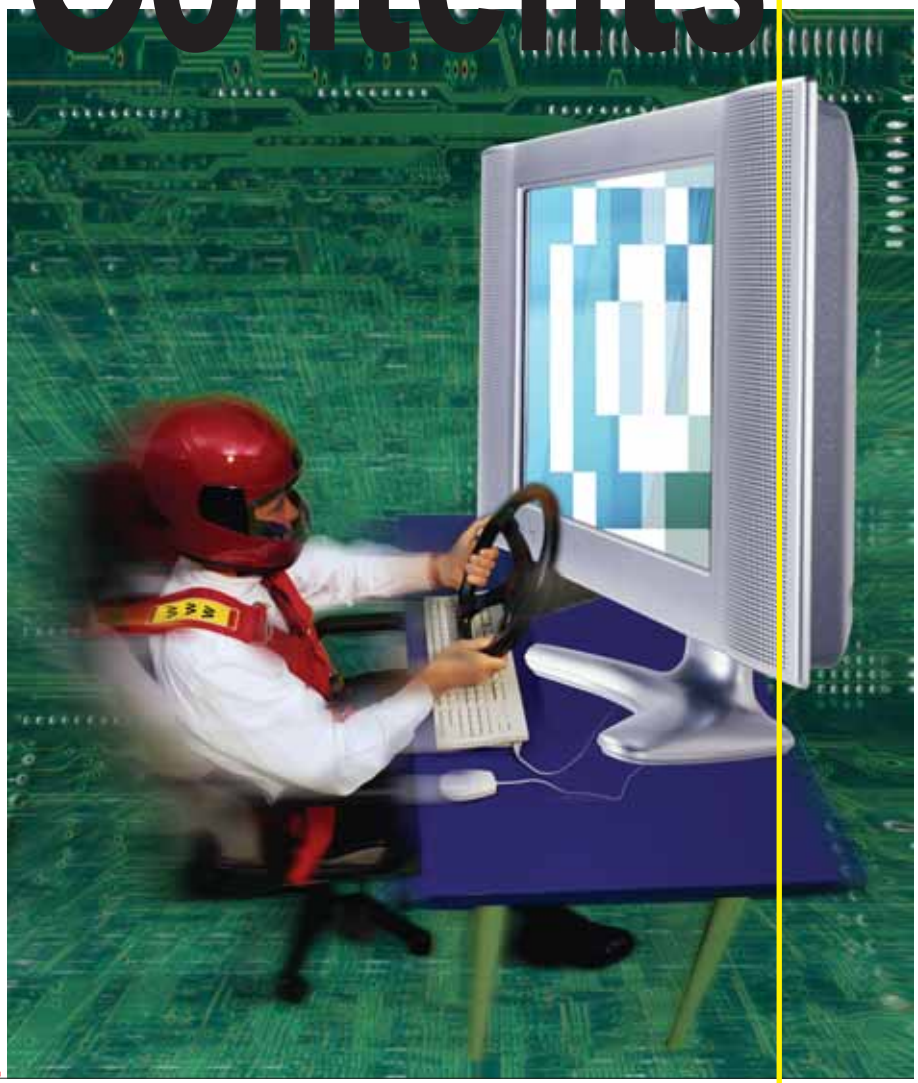

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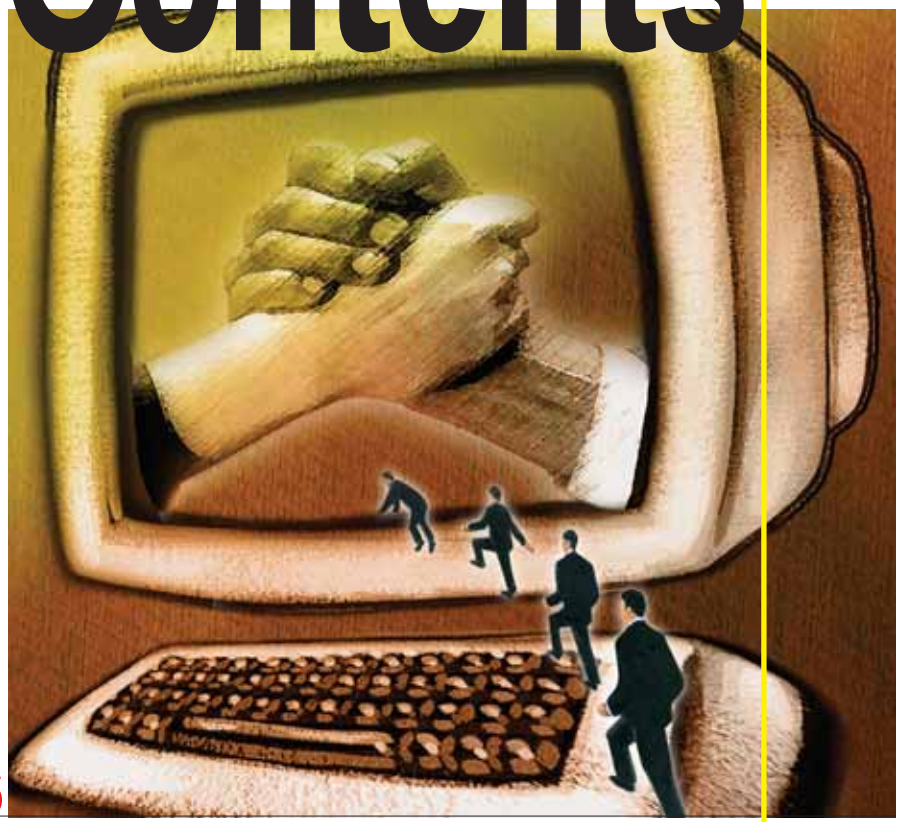

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QUOTE OF THE MONTH:

"The world has changed, however, and today, video should be considered a vital component of superior business communications. What's changed today? First, customers are much less forgiving. They know you can do better because they have experienced excellent service elsewhere; they also know where your competitors are. It's very easy for your customers to bolt — and they will — when you don't live up to their expectations. So, if you screw up customer service even one time, you run the risk of undoing all your previous good efforts, unless you do something different."

— Betsy Wood, page 90

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TMC's VoIP for SMB Community
The VoIP for SMB Community is the leading online resource for business-class broadband services that combine voice and data. This site is your primary destination for the most relevant news, education, and trends analysis. But that's not all. VoIP for SMB will help you navigate through the myriad of service providers and plans — Empowering you with the knowledge to make the right decision for your business. Come check it out at http://www.voipforsmb.tmcnet.com. Sponsored by Covad.

TMC's Triple Play Channel
The Triple Play Channel on TMCnet.com features the latest news, articles, and case studies in the booming Triple Play space. To visit TMCnet.com's voice channel just point your browser to: http://www.tmcnet.com/channels/triple-play/. Sponsored by Netcentrex.

WHAT'S ON TMCNET.COM RIGHT NOW

To stay current and to keep up-to-date with all that's happening in the fast-paced world of IP telephony, just point your browser to http://www.tmcnet.com for all the latest news and analysis. With more than 16 million page views per month, translating into more than 1,000,000 visitors, TMCnet.com is where you need to be if you want to know what's happening in the world of VoIP.

Here's a list of several articles currently on our site.

IMS Service Mobility — Beyond Voice Call Continuity
The ability to seamlessly move an active voice session between the IMS domain and the circuit-switched cellular network is currently being defined by 3GPP as the Voice Call Continuity effort. It is generating interest because the ability to provide session continuity across heterogeneous access domains is seen as a critical step towards fixed-mobile convergence (FMC).
http://www.tmcnet.com/311.1

RIM CEO: Let's Talk About Wireless
Imagine a video camera in a helmet tied to your Blackberry handheld device that sends a video signal to the handheld so you can see where you're going as you walk along busy streets and through congested hallways with your head buried in the Blackberry.
http://www.tmcnet.com/312.1

Fixed-to-Mobile Substitution: UMA Now, IMS Later
UMA is the only fully developed technology available today for carriers who need to roll out fixed-mobile substitution solutions.
http://www.tmcnet.com/313.1

The Evolution of Telecom Standards Scale Down With MicroTCA
Standardizing hardware design behind PICMG's Advanced Telecom Computing Architecture specification is by no means a new concept. Open standards enabling the use of Commercial-Off-The-Shelf (COTS) components have certainly been around for the better part of a decade.
http://www.tmcnet.com/314.1

Hybrid Model is the Key to Contact Center Migrations from TDM to IP
Many companies are making the smart decision to transition their customer service infrastructures to IP-based contact centers to gain important business benefits that conventional time division multiplexed (TDM)-based infrastructures can't match. Chief among them are lower networking and maintenance costs, more flexibility through cost-effective deployment of distributed agents, and overall service quality improvements.
http://www.tmcnet.com/315.1

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By Rich Tehrani

50 years of TV Advancement Eclipsed in Five

I have to admit that I've had mixed emotions about how big a market the IPTV space will be. In terms of making money, I wasn't sure this space would make money for service providers or vendors. I thought a swarm of Internet competitors would come onto the scene, like Vonage (quote - news - alert) has done in the world of telephony. I figured it would be easy for consumers to watch Yahoo! (quote - news - alert) or Google (quote - news - alert) TV and there would be no need for traditional IPTV from the service provider out to the customer.

At least this was the long term view I had of the market.

Then, the whole network neutrality argument came on the scene and I started to realize that service providers will eventually find a way to build tiered levels of service quality. It just seems inevitable and, furthermore, I am pretty sure the quality of non-enhanced level of Internet service will deteriorate over time allowing only very basic video streaming — it won't be worthy of the larger screens that are filling a growing number of homes.

Once I realized this is likely, I changed my view on the market. Indeed, I think there is great potential for IPTV.

Still, I am a bit skeptical, as devices already allow Internet video to be watched on a TV screen and building in a nice GUI for the TV is trivial. In addition, a device could incorporate a DVR and record content ahead of time allowing TV to be watched for free. Google and Yahoo! will certainly make this reality going forward.

But, taking off my skeptic's hat for the moment, let's focus on the successful rollout of IPTV.

Many people don't realize that one of the early companies in this space was Microsoft. The company has been dabbling in the TV market for over a decade. When Greg Galitzine asked me if I would focus on IP TV for this issue, I figured it makes sense to touch base with Ed Graczyk, director of marketing and communications for Microsoft TV.

We will see TV change more in the next five years than the last fifty. "If you aren't in this space already, you are a bit behind the curve."

Ed started about by explaining that Microsoft's view of IPTV is high quality paid television over a next generation network using next generation technology. This network would not run over the open Internet; instead, it would be a managed network and would support hundreds of channels and thousands of on-demand channels. The services that Google might offer they consider to be Internet television. (Boy this reminds me a lot of the IP telephony versus Internet telephony debates of the nineties.)

Ed says the consumer experience will be much better than what they are used to with digital cable and satellite. This may not be such a staggering accomplishment, since cable companies are having a tough time delivering new HD channels over the limited bandwidth lines they have running to consumers' homes.

An excellent USA Today article (www.tmcnet.com/316.1) goes into the details of the challenges cable companies are facing. One of these challenges is that cable companies are still carrying analog channels, which take up lots of bandwidth and, as such, means they have limited room for HD channels. Analog channels, by the way, take up six times more bandwidth than their digital counterparts.

At one point, the USA Today article describes what cable companies are doing to deal with the problem. An easy fix is reducing the number of analog channels, but this has the

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"Emergent enabled our new company to hit the ground running with leading-edge software solutions at a tremendous value."

James Ballard Smith
Chief Operating Officer
InZon Corporation

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adverse effect of upsetting customers, who will now need to have set top boxes on all their TVs — even that small TV in the kitchen.

Another solution is to change the way cable companies send TV signals to something called switched digital, which sends channels on an on-demand basis to homes. Currently, cable technology is designed to send every channel to every subscriber residence.

The amazing thing about this new technology is that it is basically emulating how IPTV works. So, even though cable operators have a twenty year head start, HD programming has put them at a disadvantage.

I asked Ed what, precisely, is the bandwidth demand for HDTV. He responded that six Mbps is required for prerecorded content; live content takes 8–10 Mbps. He also mentioned that operators can throttle these numbers up and down, if they so choose.

IPTV is not a broadcast medium and Ed makes sure to emphasize this. This gets back to the discussion of not

Huw Rees, Packet8/8x8

I recently had a chance to catch up with Huw Rees, Vice President, Sales and Marketing at Packet8/8x8 on their recent patent award in hosted VoIP. This is what Huw had to say:

"We are very pleased to have been awarded this patent, which validates the pioneering work done by 8x8 on hosted PBX technology and our subsequent inventions. 8x8 has developed a significant patent portfolio in multimedia communications over the years, but this is our first patent to combine basic VoIP technology with the delivery of value added services to the business market. The inventions we have patented include the call control application to control the call routing itself, a device-control application that provides the signaling between the call control application and the endpoints (telephones), and the configuration manager, which provides information to the call control and device-control applications. We have a total of 44 separate claims in this patent related to these inventions. All of this functionality is critical to our hosted PBX system and, potentially, all hosted PBX systems." IT

Securing the Crown Jewels

The IPTV market is made up of a few different parts and, without access to content, you simply cannot make money in the IPTV space. But how do you get access to all the available content and, at the same time, ensure that your potential partners are happy to allow you to broadcast this content over IPTV. After all, when any sort of data goes on an IP network, it is usually possible to digitally copy it. Right?

Well, a company called Widevine Technologies is looking to counter conventional thinking by enabling service providers to keep content encrypted from end to end in a device-agnostic and open manner. Widevine's goal is to allow service providers to keep the content providers happy that their programming cannot and will not be stolen.

Widevine, as it turns out, competes with Microsoft in this area and feels its differentiator from the software giant is their ability to work with more manufacturers' technology, allowing best of breed solutions to be built. In addition, Widevine feels its solution is much more secure than Microsoft's.

Widevine has a series of products that can help service providers keep content safe. One of Widevine's innovations is a downloadable softcard that that can be reset and re-downloaded as needed. This, they tell me, reduces the risk of card attacks.

There is a suite of products for IPTV providers to choose from allowing encryption of video on demand as well as live streams. The company also has a product allowing IPTV providers to broadcast to consumer electronic devices and PCs. These devices are generally able to be hacked and, as such, sophisticated hackers can copy programming just after the program stream has been unencrypted — before it has been displayed.

To guard against this, Widevine has a product called Cypher Digital Copy Protection that monitors these devices for theft and responds accordingly. Some of the threats the company guards against are debuggers, in-circuit emulators, stream recorders, and screen scrapers.

In addition, the company has technology allowing digital watermarking of content, allowing service providers to provide additional protective mechanisms to their content providers. The theory goes that, if a pirated episode of 24 shows up somewhere, the service provider will be able to prove the programming did not come from the transgressing network.

Protecting content is not the first thing that comes to mind when you think about IPTV but, without proper safeguards in place, the IPTV market will certainly stall. You should certainly be exploring these sorts of technologies as you look to roll out your IPTV strategy. IT

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The Most Important IP Communications Events

We are about a month away from the biggest and most improtant IP Communications events of the summer. Be sure to mark your calendar and come to Santa Clara, CA August 8-10 for the VoIP Demo and VoIP Developer shows. Check out http://www.voipdeveloper.com and http://www.voip-demo.com for details. IT

Dividing Microsoft

Recently, Eric Lundquist wrote in eWeek that Tech Giants are stumbling. As an example, he offered Microsoft, (quote - news - alert) which is throwing its hat into every ring. He says that even the mightiest company will have its resources drained by trying to focus on search-based ad engines, video game consoles, and enterprise TVs.

I have to agree with Eric, but maybe not for the same reason he sees. Microsoft has a great strategy in doing virtually everything in tech because of the massive unification of technologies taking place. For example, it makes sense to make an OS for a smart phone, an OS for supercomputing, focus on virtualization, and so on. It makes sense to have a back office IPTV strategy if you also supply consumer devices.

The problem with Microsoft is that it is too large. It hasn't been able to easily articulate its message and core values for about half a decade.

The solution is very simple: Divide into a series of smaller companies that collaborate.

One immediate benefit of this strategy will be tripling of the amount of press the company's products receive. (News outlets can only report on so many Microsoft stories each day.) I would suggest dividing into consumer, enterprise and service provider divisions with different names and more autonomy.

What do you think? IT

being forced to send every channel to the customer. Instead, a single stream is sent, as required, to each device.

So, as long as you have the bandwidth, you can have as many channels as needed. This is why AT&T can deliver a service that supports up to four TVs per house, including HD over 20-25 Mbps per home.

I asked if phone companies will, then, need about 30 Mbps to the home to be able to provide TV, broadband, VoIP, other services. Ed's response was, perhaps, in the United States. In Europe, where HDTV is not as prevalent, less bandwidth will be needed, though he suspects that may change rather quickly with the World Cup — which is being contested as this issue goes to print.

He also mentioned that BT uses a hybrid solution, providing live channels over the air using digital terrestrial technology. There are millions of subscribers who buy a set top that plugs into an antenna to receive 32 channels for free. BT also allows broadband and other services over this same box. In this scenario, less bandwidth is needed than, say AT&T, as BT is delivering fewer channels over broadband.

I asked how his customers are doing; he said they have rollouts taking place in Switzerland, the United States, Germany, and France.

I also inquired about the challenges Microsoft is experiencing in rollouts, to which he responded that it took four tries for the cable company to get the TV in his house to work (maybe they knew what he does for a living). His point is that even mature technologies can have problems. The challenge, he says, is getting rollouts to scale. He likens IPTV rollouts to putting together puzzles where the pieces come from different companies. Furthermore, the puzzle is different from operator to operator.

I then asked about testing these services as they are rolled out. Ed thinks you need to test the resiliency of the network and the in-home consumer experience. You also need to focus on customer service representative (CSR) training and make the rollout very easy. Ed emphasized that it has to be easy for consumers.

I finished by asking where TV will be in five years and Ed conjectured that we will see TV change more in the next five years than the last fifty. "If you aren't in this space already, you are a bit behind the curve," he stated. You should be focusing on delivering and executing the basics, otherwise you have missed the boat. IT

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VoIP Head

Hot News From The IP Communications World

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Covad Enhances Service Model for Click Commerce While Targeting VoIP Resellers

Click Commerce, a provider of on-demand supply chain management solutions, has announced that Covad, a national supplier of integrated voice and data communications, has upgraded its demand chain management solution and will move to a 'Software as a Service' delivery model.

The upgrade to the Click Commerce hosted solution was a result of Covad's efforts to reduce software and hardware maintenance costs, improve delivery of enhancements, and ensure reliability and security for their partner communications.

Debbie Jo Severin, vice president of marketing for Covad, noted that the company is aggressively targeting VoIP resellers and plans to use the Click Commerce solution to drive successful growth in this market. By moving to an on-demand model, Covad can accomplish this goal, free up valuable IT resources for other projects and reduce the total cost of ownership.

Covad offers DSL, VoIP, T1, Web hosting, managed security, IP and dial-up, wireless broadband and bundle voice and data services directly through its network and through Internet Service Providers, value-added resellers, telecommunications carriers and affinity groups to small and medium-sized businesses and home users nationwide.

By focusing on reducing costs while improving deliverables, Covad is narrowing in on the variables that tend to take top priority in the world of the VoIP reseller. This area still offers tremendous opportunity that Covad is well positioned to exploit. Continuous updates will be one of the critical keys to market stability as the technology and its challenges continue to change. A proactive approach will ensure consistent growth.

Avaya Grows one-X Family; Launches New IP Phones

In a follow-on announcement to March's launch of the one-X family, Avaya unveiled its next generation of IP phones designed to deliver simplicity and faster access to advanced applications. The Avaya one-X Deskphone Edition is designed to enhance user experiences through more intelligent access to intelligent communications.

"With more businesses facing information overload, it's the clarity of voice communications that cuts through the clutter and gets things done," said Geoffrey Baird, vice president and general manager, Communications Appliances Division, Avaya.

The phones are the latest addition to the Avaya one-X family of products that give users access to the full range of IP applications with greater simplicity, consistency and control across Avaya devices and interfaces. The one-X family also includes the Avaya one-X Mobile Edition, Quick Edition, and Desktop Edition.

In redesigning and building its new IP phones for businesses, Avaya reached out to actual users. In a survey conducted by Avaya, 85 percent of people who used the phone said it could have a positive impact on productivity and save costs by reducing mistakes and dropped calls, while 90 percent said the phones could save time through easy access to mobility features, reducing phone tag. Ninety-six percent were won over by the phone's ability to quickly find contact information.

ZTE & Skytel: High-Quality Wireless VoIP

CDMA2000 1xEV-DO Rev. A is the first commercially-developed technology to enable high-quality wireless VoIP. Leveraging session initiation protocol (SIP), it is said to achieve VoIP calls which are potentially of the same quality as PSTN calls. It is actually an enhanced version of an earlier 1xEV-DO release, a broadband wireless technology which is already deployed on networks everywhere (including Skytel's current network).

Rev. A is said to improve data rates, Quality of Service (QoS) and network capacity. With it, service providers can deliver IP-based applications and services such as video messaging and large file upload. Rev. A is also a key enabler for delay-sensitive services, such as push-to-talk and Instant Multimedia Messaging (IMM), as well as integrated voice and data services, such as video telephony.

The deal is a significant achievement for ZTE because it marks the first successful deployment of CDMA2000 solutions with EV-DO Rev.A for commercial use globally. The upgraded network is expected to be complete by the end of Q3 this year.

IBM Extends Websphere Portfolio

IBM has announced new middleware and hardware systems to help telecommunications carriers more quickly, easily, and affordably create, deploy, and manage new, revenue-generating, converged services combining voice, video, and data over both fixed and mobile networks, leveraging a service oriented architecture (SOA).

IBM announced the IBM WebSphere IP Multimedia Subsystem (IMS) Connector, IBM WebSphere Presence Server, and IBM WebSphere Telecom Web Services Server.

IBM is extending its WebSphere software portfolio to help enable a flexible, IMS-compliant services plane solution supporting the delivery of IP-based services and leveraging a SOA approach. This approach can help telecommunications service providers evolve previously siloed network infrastructure into reusable services that can easily interoperate using industry standards. These products build upon the latest release of IBM's WebSphere Application Server, which has deeply integrated SIP technology to deliver a truly converged HTTP/SIP service execution platform for next generation services.

Siemens Survey: Mobility, Entertainment Top U.S. Mobile Consumer Wish List

Mobile subscribers in the United States are ready to catch up with their global peers — including closing the gap on the world's most advanced users in Korea and China — in the adoption of new cellular innovations that make mobile devices sing, play, and work harder than ever before, according to more than 5,000 global respondents of a new Siemens Communications survey.

According to the Siemens survey, U.S. and World Demand for Wireless Applications, topping the U.S. mobile applications wish list are:

- Mobile e-mail services, already used by many U.S. consumers today, to manage both office and private e-mails, calendars and contact lists — 69 percent said they are interested.
- Mobile music services for access to a radio station or to download songs and listen to them in their mobile devices — 56 percent.
- Mobile television services to allow the watching of existing television channels or to enable the downloading and playback of specific video content — 53 percent.

News Analysis By Robert Liu
TMCnet Wireless and Technology Columnist

Communications Breakdown:

A Case for Software-Defined Radios (SDRs)

SAN DIEGO — When fighter pilots of the U.S. Marine Corps VMFA-232 "Red Devil" Squadron recently returned from Iraq, one captain, in particular, shared an anecdote about his experience coordinating and communicating with U.S. and Coalition forces.

"Having just gotten back from Iraq, one of our primary jobs was to launch off the aircraft carrier and fly out over Baghdad" to support U.S. troops on the ground, he explained during a brief interview conducted here at the Miramar Marine Corps Air Station.

"A good portion of the task was over Baghdad, where we'd be working for the Army. Having brought an Army guy out to the ship — a HeLo [helicopter] pilot as well as one of their ground guys ... they had very little idea that we were even up there. One of the Army helicopter guys ... with 20 years of flying experience was like: 'I had no idea I had fixed-wing support 20,000 feet above me overhead.' They are not doing a good job of coordinating the efforts right now, I would say, to essentially let us talk to the Army guys on the ground," the captain said.

The communications breakdown described by this fighter pilot (who spoke on condition of anonymity) isn't isolated just to the Marines; but the U.S. Defense Department also isn't oblivious to problem. Just down Interstate 15, here in this perpetually sunny Southern California metropolis, is headquarters of the Joint Tactical Radio Systems (JTRS) — a joint U.S.-NATO program nicknamed "Jitters," which began in 1997 to develop and implement interoperable nodes within the access layer of field communications in the form of software-defined radio (SDR).

The concept of the SDR is by no means new. Before JTRS, there was another military initiative dubbed "SpeakEasy." Clearly, the work of government-sponsored programs could have easily translated to benefits that, ideally, can trickle into the public and commercial sectors. Imagine the possibilities if the New York Police Department can seamlessly communicate with the firefighters and EMS workers of the FDNY on a communication system that relies on software to reprogram a radio's modulation schema. But, analysts and industry experts argue that government SDR development has yet to produce ubiquitous commercial radio access networks (RAN) and currently don't go far enough in advancing interoperability even for the military.

F-18 Hornets at Miramar.

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Miramar ground crew

"Of course, the reality of the SDR is far from the ideal. The industry has been talking about the possibilities of such a system for two decades and it could still be years before we see commercial deployments," Deutsche Bank analyst Brian Modoff wrote in a recent report. "Nonetheless, we think the case for SDR has become more compelling of late."

While the notion of ubiquitous radio communications may conjure up imagery of science fiction [INSERT: Pop culture reference of choice here], the reality is SDRs are already being supported on a single chipset that is reprogrammable on-the-fly.

"That's being done already today," explained Lee Pucker, Chief Technology Officer at Spectrum Signal Processing, based in British Columbia, Canada. Pucker is also the Chairman of the Designs, Process and Tools Working Group of the SDR Forum. "It's a lot closer than you think, but there's still a lot of work that has to be done on it."

As open standards-based interoperability gains traction at the network's core, particularly as it relates to IP-based communications, carriers and telecom equipment manufacturers (TEMs) may be empowered to develop similar changes at the network's edge. "We could start to see changes in RAN that could happen in parallel to the advent of IMS," according to Modoff.

In order to control traffic modulated between 802.11g, CDMA, or GSM, Modoff believes a best practices method calls for SDR to reside in the infrastructure side of the access link rather than on the base station or the customer premises equipment (CPE). "SDR deployed on a fiber-optic based architecture would be very appealing, considering the types of traffic and radio resources likely to be encountered in high traffic areas — airports, malls, high rises," the DB analyst concluded.

However, while government-sponsored research have, thus far, done little to standardize the architecture, the biggest drawback with programs like JTRS is not taking into account a roadmap that would future-proof the technology, Pucker added. As the electrical engineering community begins to explore the commercial viability of SDR, Pucker believes it should also look toward the next logic step — "cognitive radio," a system that continually examines the operator's spectrum and then tailors the radio functions based on the current environment in which the radio is operating.

"The JTRS program is about having radios where the air interface standards, the wave forms, can be changed on-the-fly, but it's not doing it automatically based on the assessment in the environment," Pucker explained. "There's a difference between having SDRs and having cognitive-radio abilities. JTRS is all about SDR."

Representatives of the JTRS were unavailable for comment, but, in the Pentagon's defense, two DARPA projects — NeXt-Generation Communications (XG) and the Wireless Network after Next (WNaN) — are trying to develop technologies and systems concepts to enable intelligent adaptive wireless networks.

Even with all those kinks worked out, though, a complex set of issues completely unrelated to technology pose as challenges to commercial deployment of ubiquitous radio. For starters, the vast extent of North American jurisdictions creates a public policy conundrum. So, while groups, like the SDR Forum, are looking at what the requirements are for interoperability for first responders and the public safety sector, there are a number of other things that have to be done. "How do you prioritize communications? Do you need multiple, different levels of security?" Pucker asked rhetorically.

Another issue is money — not so much in the form of funding for research and trial deployment, but to determine which business models are viable and which aren't. For example, a key requirement in the defense space is to ensure wave forms modulate quickly enough to enable interoperable and, hence, effective communications. But, in the commercial sector, there may only be a handful of modulation schemas to support, so there's less of a need to switch dynamically between them and more of a need to ensure the scalability of new features to the platform over time, Pucker explained.

"When you look at the trade-offs, you look at different business drivers and there are different business models in which they operate," Pucker said.

While the heart of the telecom industry — Ericsson, Nokia, and others — has yet to join the SDR Forum and jump aboard the cognitive radio bandwagon, there are a growing number of other companies worth watching. Among them, DB's Modoff points to Aeroflex, a supplier of test gear to the JTRS program. Also worth watching are companies ranging in size from defense contractor L-3 Communications, on the high end, down to Bitwave Semiconductor, a fabless chip company that has already developed the single, universal chipset. IT

Robert Liu is Executive Editor at TMCnet. Previously, he was Executive Editor at Jupitermedia and has also written for CNN, A&E, Dow Jones and Bloomberg. For more articles, please visit Robert Liu's columnist page.

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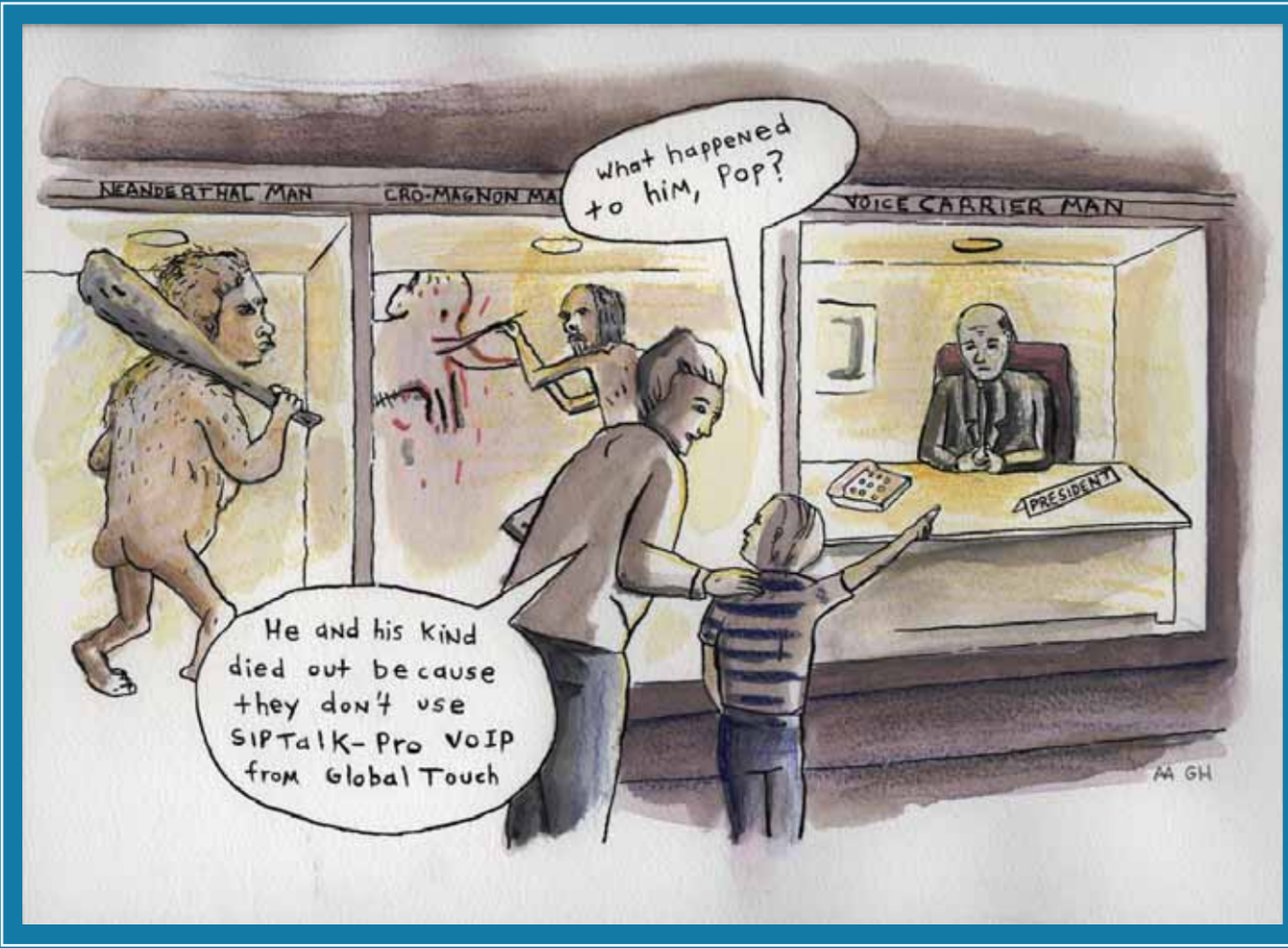

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TI Powers Grandstream's Enterprise IP Phone

By Johanne Torres

Texas Instruments (quote - news - alert) announced that its TMS320C5501 digital signal processor (DSP) was chosen by Grandstream Networks (news - alert) to power GXP-2000, Grandstream's enterprise SIP phone.

TI's TMS320C5501 DSP will allow Grandstream to offer better voice clarity, enhanced security protection for device provisioning and private communications. It will also provide standard PBX phone features on its GXP-2000 enterprise IP phone product, including transfer, forward, do not disturb, hold, mute, three-way conference, intercom/paging, shared line presence, call park/pick up, speed dial, and full duplex hands-free speakerphone.

"We are very excited about working with TI and using their industry leading DSP that powers our innovative VoIP products. By leveraging the powerful processing capabilities, extended features and relatively low cost of TI's DSP, Grandstream is able to design and deliver advanced IP voice and video products with high quality, rich functions at unrivaled price points," said Grandstream's CEO David Li.

The GXP-2000 features dual 10/100M Ethernet ports that can be configured in switch or router mode, headset jack, adjustable large 130x64 graphic LCD (with support for multiple languages), four line indicators, and seven programmable speed dial keys with further expandability to support up to 112 additional programmable keys via add-on key expansion modules. The device has a MSRP of $119.

http://www.ti.com
http://www.grandstream.com

Avaya one-X IP Phones Transform Enterprise Communications

Avaya (quote - news - alert) has unveiled its next generation of IP phones that deliver unparalleled simplicity and faster access to a vast array of advanced applications. The new Avaya one-X Deskphone Edition is designed to enhance user experiences through more intelligent access to intelligent communications.

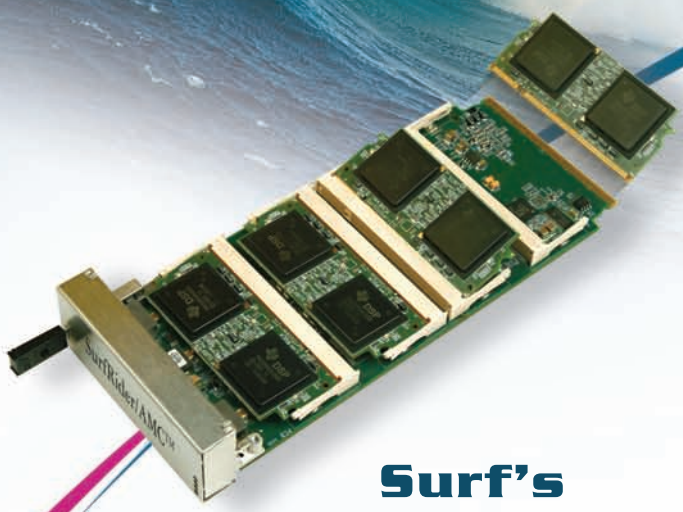
These advanced business phones are more functional and flexible, and as easy to navigate as a cell phone, providing a better way for enterprise users to communicate, get information and be more productive in their work.

The phones are the latest addition to the Avaya one-X family, which includes the Avaya one-X Mobile Edition, Quick Edition, and Desktop Edition.

Enhanced capabilities, such as multi-party conferencing and mobility options, change what is possible with a desktop phone. On a multi-party conference, for instance, the user can now see all of their teleconference participants on the screen, and scroll through them to add, drop or mute individual people. Mobility applications let a user bridge their IP phone with their cell phone with one touch, providing constant connectivity and one- number access for those on the go.

The phone is simplified further by providing users with step-by-step directions for accessing many features, helping to make phone operation easier and reducing errors and dropped calls. This includes guides for conferencing, transferring, and handling multiple calls simultaneously.

http://www.avaya.com



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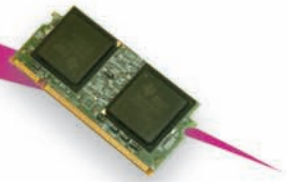

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New Mitel IP Phones Bring Enhanced Features to the Enterprise

Mitel (news - alert) has announced it newest series of IP phones, the 5300 series. Based on Texas Instruments' (quote - news - alert) TNETV1050 VoIP technology. The 5300 series delivers real-time access to applications and services, including Web browsing, contact lists, call history logs, and many other advanced, customized user settings.

Mitel's new 5330 and 5340 IP Phones are full-featured enterprise-class telephones that provide voice communications over an IP network. The feature-rich telephones feature a large 160 x 320 graphics display with 24 or 48 self-labeling, multifunction, programmable keys and are full-duplex, hands-free speakerphone systems with support of Wideband Audio Handsets that makes the telephones acoustically superior to many IP phones available today.

The phones are enabled through TI's single-chip TNETV1050 solution that combines the key processor, communication and peripheral functions necessary to build an advanced IP phone. Developed specifically for enterprise desktop speakerphones, the TNETV1050 leverages TI's long-term investment in developing communications processors for voice and broadband applications. It offers access to a comprehensive feature set, and exceptional processing performance to support current and evolving IP phone standards.

The TNETV1050 is extremely flexible, and also offers IP phone and PC connectivity to the Ethernet LAN, and a USB interface. This allows for a wide variety of devices to connect to the phone, increasing user efficiency across the enterprise. Examples include card readers, fingerprint recognition, PDA synchronization, video conferencing and more.

http://www.ti.com/voip, http://www.mitel.com

Samsung Intros VoIP and Digital Keysets for SMBs

By Johanne Torres

The Dallas-based Business Communication Systems division of Samsung (quote - news - alert) introduced a new line of VoIP and digital keysets designed for SMBs. Specifically, the company introduced the ITP-5100 series of VoIP keysets, which will offer SMBs a set of options from entry-level setups to large color displays; and the DS-5000 digital keysets.

The OfficeServ ITP-5107S, ITP-5121D and ITP-5112L use standard IP protocols and are compatible with all of Samsung's converged and IP-enabled OfficeServ systems. The ITP-5107S offers a seven-button, entry-level option; the ITP-5121D offers a 21-button keyset with a navigation key for easier feature use; and the ITP-5112L offers a large, color TFT-LCD display, built-in phone book, calculator and text messaging.

The VoIP keysets are designed for business offices and remote office applications, such as a home office, remote agents, part-time employees, as well as satellite offices. They enable users to have the same access and functions at any location as they do at the main office. Administrators are also able to add more of the keysets to a new or existing LAN in a snap.

The DS-5000 series provides options on what phone size is better suited for each individual user. All of the keysets are equipped with a number of programmable function buttons, three soft keys with a scroll button to guide users to variable call status options, a built-in speakerphone, message waiting lamp, and caller ID display.

http://www.samsung.com

Envox Worldwide Ships Envox 6.3

Envox Worldwide (news - alert) has introduced Envox 6.3, the latest version of its communications development platform. Envox 6.3, which has been certified by the VoiceXML Forum, significantly reduces the time, cost and, complexity of developing and deploying a wide range of open, standards-based voice solutions including interactive voice response (IVR) and enhanced self-service, call center, alerts and notification, voice portal, carrier service and enterprise communications.

Key capabilities of the Envox Communications Development Platform include:

- A graphical programming environment that reduces development time by 50% or more.
- A proven solution for VoIP deployments, plus the flexibility to implement voice solutions in IP, TDM, and mixed networks.
- An embedded VoiceXML browser for seamless execution of VoiceXML scripts and applications.
- Support for Web services, which streamlines integration with enterprise applications and data warehouses.
- Compatibility with Envox CT Connect, the company's computer telephony integration (CTI) software, which provides skills-based routing and agent screen pops for contact centers, enabling them to personalize customer interactions and shorten calls.
- Numerous integrations for leading telephony and speech products, including the natural language speech recognition technology from Nuance.
- A reliable runtime environment that has processed billions of calls since its inception and supports up to 240 ports per server.
- Powerful management tools for easily configuring, monitoring and managing large-scale deployments.

http://www.envox.com

Lucent Technologies Enhances VPN/Firewall Network Security Solution With Platform for Small and Medium Enterprises

Lucent Technologies (quote - news - alert) announced the latest member of its firewall and virtual private network (VPN) security appliances portfolio — the VPN Firewall Brick 50 IP services platform.

Designed by Lucent's R&D arm, Bell Labs, this new network security device was specifically developed for the SME market and delivers the performance, flexibility, capabilities, and price point required to protect corporate networks and ensure seamless and secure remote access by satellite offices, telecommuters and business travelers.

In a compact chassis, Lucent's Brick 50 delivers integrated high-speed firewall functionality, quality of service bandwidth optimization, site-to-site and remote access VPN services, VLAN and virtual firewall capabilities, and a powerful IPSec software client for remote users. The solution also features robust protection against distributed denial of service (DDoS) attacks through SYN flood protection, intelligent cache management, and strict TCP and IP packet validation.

The VPN Firewall Brick 50 features 195 Mbps of firewall performance, 75 Mbps of 3DES (Data Encryption Standard), VPN performance, and 60 Mbps of AES (Advanced Encryption Standard) performance due to a new hardware assisted encryption engine. The platform also features three 10/100 Ethernet ports and concurrently supports up to 1,000 simultaneous VPN tunnels, 4,094 VLANs and 50 virtual firewalls.

http://www.lucent.com

Crossbeam Launches Two New Unified Threat Management Platforms for Medium-Sized Businesses and the Extended Enterprise

Crossbeam Systems (news - alert) announced an expansion of its C-Series line of UTM platforms. The C12 and C25, optimized for best-of-breed security applications, deliver enterprise-class UTM security to medium-sized businesses and extended large enterprise deployments.

The C12 and C25 UTM platforms for medium-sized businesses are optimized to meet the demands of best-of-breed UTM security applications, such as anti-virus, IDS/IPS, XML security, and URL filtering from security innovators.

C-Series platforms are purpose-built for security and performance demands in UTM perimeter and LAN infrastructures that require the combined operation of firewall, intrusion protection, and content filtering. The platforms provide high performance and security at both large and small packet sizes making it ideal for any combination of services, whether VoIP services or XML-based services.

By enabling deployment of multiple applications on a single platform, the C12 and C25 radically simplify the management and architecture of security infrastructure. This improves overall security posture while also generating cost savings in hardware and personnel when compared to traditional "multiple independent point solutions" deployments.

http://www.crossbeamsystems.com

Empirix Rolls Out Hammer XMS Active Monitoring Solution for VoIP Services

By Laura Stotler

Empirix (news - alert) has introduced Hammer XMS Active, an active monitoring solution for enhanced VoIP services. The new solution is part of the company's carrier-class monitoring and analysis portfolio and complements the Hammer XMS passive monitoring solution.

Hammer XMS Active gives service providers complete, multidimensional insight into customers' quality of experience. It drives active test calls through a VoIP network, enabling service providers to measure their network and application performance in reaction to controlled stimuli. It also enables feature testing for advanced services, which allows service providers to verify call connectivity and advanced features like three-way calling, call forwarding and call blocking.

The solution can emulate calls from TDM and IP endpoint, which enables service providers to represent real customer transactions. It also provides voice quality measurements using PESQ algorithms, which gives service providers a standard set of information regardless of the type of endpoint that is being simulated. The Hammer XMS Active may be easily integrated with Hammer's XMS passive monitoring solution so that service providers can have one comprehensive view of voice quality. This speeds up the diagnosis of application and infrastructure problems and reduces VoIP service maintenance costs.

http://www.empirix.com

GlobalTouch Telecom to Deliver Plug-and-Play Video-over-VoIP

By Patrick Barnard

GlobalTouch Telecom (news - alert) is hoping to capitalize on the potential of video communications opportunity with the launch of its new video applications for VoIP. The platform will deliver simple-to-use "one-click" video over VoIP via a PC softphone or desktop model IP video phone.

The new VoIP platform supports the Leadtek desktop video telephone. The standalone videophone, which is designed for video over IP, has a built-in 5 inch TFT LCD screen and a CCD camera that can be rotated and tilted.

Callers also can use the GTT video softphone, which includes integration with Microsoft Outlook. By clicking on an Outlook contact, a user can instantly initiate a video call with another similarly outfitted user, or any user who has a desktop video telephone. If a user on either end of the call does not have a multimedia device, the call reverts to a normal voice only call by default.

Gregory O. Welch, CEO of GTT, said "The demands of globalization, cost reduction and productivity acceleration are exerting increasing pressure on enterprises large and small. For our customers, video over VoIP means a very attractive new feature and revenue streams."

Cliff Rees, COO of GTT, added that "Video over VoIP is not just a cool feature, but a window into VoIP's future, where VoIP communications offers remote interactive communications from any location on any device. By designing our VoIP platform with open standards to support a broader range of devices, we [enable] our ASP customers to offer their subscribers lots of value added, plug and play options like video telephony."

http://www.globaltouchtelecom.com

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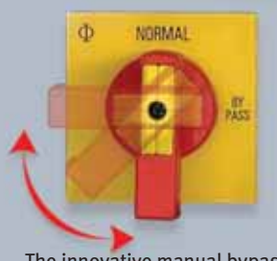

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NDS Announces Synamedia Metro IPTV Middleware Solution

NDS (news - alert) announced Synamedia Metro, a complete IPTV middleware solution for telecommunications companies (telcos) and broadband operators. The new full-feature product brings the world's leading television technologies to the telecommunications industry, enabling telcos to offer the power of IPTV to their subscribers.

Synamedia Metro IPTV middleware allows IPTV operators to offer attractive Electronic Program Guides (EPG), interactive TV applications (iTV), Video on Demand (VOD), digital video recorder (DVR) or network DVR capabilities, and interactive games, in either standard (SD) or high definition (HD), all of which are built using the NDS MediaHighway middleware application development tools. Synamedia Metro also protects premium content and revenue streams through NDS VideoGuard, a robust and secure encryption technology for content protection, revenue protection, and rights management.

By integrating these technologies into a single solution, the NDS Synamedia Metro architecture enables the telco operator to deploy a single integrated IPTV system, saving time in the critical startup phase of any new service. The solution is also standards-based, allowing telcos to choose their system components according to their current infrastructure needs.

Nigel Smith, vice president NDS Broadband Internet Group said, "We believe that only an open solution will meet the requirements for providing new and exciting IPTV services — and with Synamedia Metro being fully standards-based and having open interfaces, the operator can choose to mix and match components and not be locked into a single supplier."

http://www.nds.com

EarthLink Selects Solegy Managed VoIP Platform For Its MindSpring PC-to-Phone Service

Solegy's (news - alert) ServicePDQ managed VoIP platform was chosen by EarthLink (quote - news - alert) as the basis for the PC-to-phone component of MindSpring, EarthLink's softphone client that combines Internet voice and instant messaging on a consumer's PC. ServicePDQ allows MindSpring users to make calls directly from their PC to any traditional phone, while enjoying an unparalleled array of innovative user features.

The ServicePDQ platform, managed for EarthLink by Solegy, gives MindSpring users access to a Web portal offering convenient, single-click self-provisioning as well as customer self service. ServicePDQ's SIP softswitch architecture also supports real-time billing for MindSpring-originated calls to traditional PSTN (Public Switched Telephone Network) phone lines.

"Solegy's fully-managed business model helped us launch a feature-rich, prepaid PC-to-Phone service while meeting an aggressive rollout schedule for our other Internet voice products," said Tom Hsieh, EarthLink's director of voice products and engineering. "Solegy offered the features, flexibility and professional support services that we wanted."

http://www.earthlink.net
http://www.solegysystems.com

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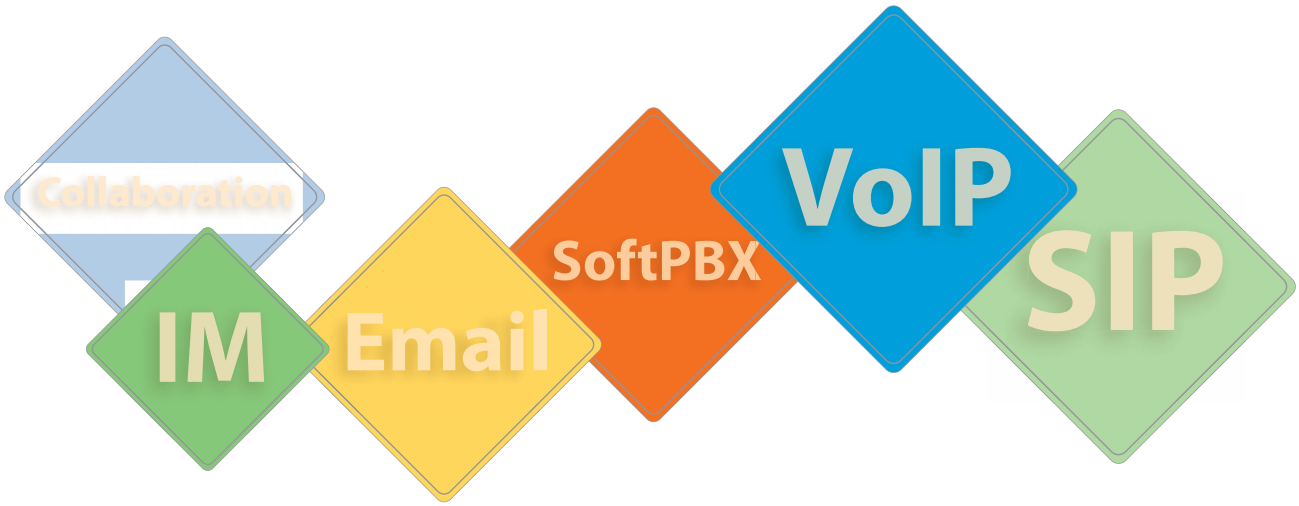
www.communigate.com

CommuniGate SYSTEMS

Trade In your
legacy mail systems

Trade Up to

Next Generation IP Communications



CommuniGate Systems is offering a Trade-In / Trade-Up program for legacy email systems. Stop paying outlandish fees for outdated technology. Trade up your systems to our world record holding, carrier-class technology and five nines uptime with CommuniGate Pro Dynamic Cluster architecture. To learn more about the program call 800.262.4722 or visit:

http://www.communigate.com/ads/tradeInTradeUp.html

Download Free Trial at:
https://www.communigate.com/referral/leadform.html

2005 INTERNET TELEPHONY PRODUCT OF THE YEAR

Veraz Launches "Plug-n-Play" IMS Solution

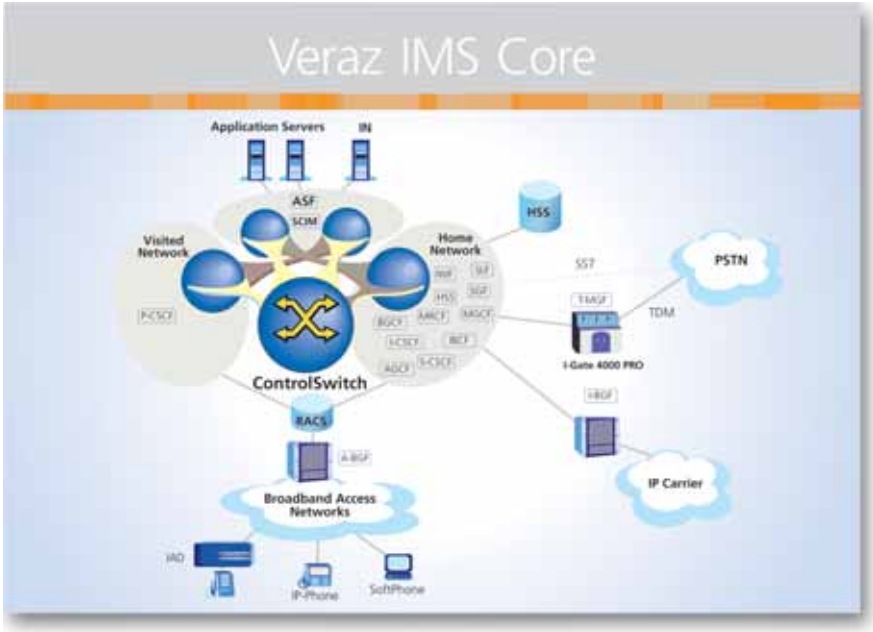
Veraz Networks (news - alert) announced a highly-scalable, IMS-compliant solution with an integrated prepaid-capable application server to speed the deployment of new services to the mass-market.

Service providers can now use the ControlSwitch softswitch for IMS-compliant deployments of new services including enhanced messaging services and VoBB for not only monthly subscription accounts, but also for prepaid user accounts.

The new Veraz IMS-compliant solution including the ControlSwitch with integrated pre-paid charging, user portal and soft client allows service providers to launch highly scalable VoBB services as part of an overall open standard IMS service-based architecture. Additionally, during the migration to an all IMS network, the Veraz ControlSwitch supports hybrid voice and multimedia networks. This hybrid network support is possible because the programmable ControlSwitch integrates with both the traditional narrowband voice-centric access networks and new IMS-compliant infrastructure.

"IMS is the rising tide of the telecommunications industry today and service providers are formulating strategies on how to implement IMS into their networks," said Doug Sabella, CEO of Veraz. "The ControlSwitch focuses on that strategy with a plug-n-play solution. The progress of our IMS initiatives gives Service Providers a powerful platform on which to offer new services and integrate IMS into their networks now."

http://www.veraznetworks.com



Shenick Taps Telchemy for IPTV and Triple-Play Testing

By Johanne Torres

VoIP performance tester Telchemy (news - alert) has been tapped by Shenick Network Systems, (news - alert) an IP communications test systems provider, to license Telchemy's VQmon/SA-VM IPTV and VQmon/SA VoIP performance analysis software for use in its diversifEye Triple Play communications test system.

The deal will enable Shenick to provide its customers with the ability to test performance and quality issues for IPTV, VoIP, triple play, and broadband services within a single system. This way, service providers will be able to offer higher quality, reliable IPTV services.

The VQmon software agent monitors IP-based voice and video streams in real-time, measures the time distribution of lost and discarded packets using a multi-state statistical model, examines the type of codec, bit rate and other factors using a perceptual model to calculate transmission quality and perceptual quality metrics.

DiversifEye determines the quality and performance limitations with the convergence of voice, video, and enhanced broadband data services. The VQmon/SA/VM-diversifEye combo will allow Shenick to support real-time, passive IPTV video quality analysis on a per IPTV channel basis.

http://www.telchemy.com
http://www.shenick.com

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T.G.I. Friday's Provides Servers with a Sixth Sense Through ESP

By Susan J. Campbell

Servers in 12 T.G.I. Friday's restaurants in the Northeast are soon to have a sixth sense — the ability to know exactly what a customer needs before the server even arrives at the table. This clairvoyant ability will provided by none other than ESP Systems. ESP (news - alert) is designed to allow restaurant employees to customize the service experience to each guest, reduce wait times, prevent costly service gaps, and increase the productivity of employees.

In partnership with Microsoft, ESP links everyone in the restaurant with a wireless network. Each guest is provided access via a small, table-set device, called an "ESP Hub," which enables them to instantly communicate with their servers. In addition, all front-of-house employees wear an "ESP Watch," which receives the real-time messages from their guests, as well as from the kitchen, bar, hosts, and other staff. Managers are provided with real-time performance data on their best and under-performing servers, revealing who can handle more tables.

Test deployments revealed that 85 percent of guests felt that ESP enhanced their dining experience, 55 percent indicated that ESP would influence their future dining decisions, and 88 percent said that ESP prevented specific deficiencies that have previously led them to never return to restaurants. The tests also increase table turnover by 10 percent and 93 percent of servers said they would prefer to work at a restaurant with ESP.

ESP can be installed overnight and server training takes less than ten minutes, thus enabling restaurants to realize immediate profits resulting from higher revenues and lower costs.

http://www.espsystems.net

CableMatrix, VCom, AudioCodes, and Emergent Unveil VoIP Over WiMAX

CableMatrix Technologies, (news - alert) a provider of QoS policy management solutions; VCom, (news - alert) a designer and manufacturer of WiMAX-compatible base stations and customer premise equipment; AudioCodes, (news - alert) a provider of converged VoIP media gateways and media servers; and Emergent Networks, (news - alert) a provider of advanced telecommunications software for the emerging communications networks, have demonstrated an IP voice over WiMAX call. The combined elements enable high quality IP voice over the IEEE 802.16 air interface standard by incorporating dynamic QoS on behalf of authorized IP voice sessions.

The result is a completely deployable SIP-based voice solution for broadband wireless service providers. QoS is triggered and admitted in real-time by Emergent's SBC and CableMatrix's Policy Decision Function (PDF) when a call is initiated by the AudioCodes' Analog Terminal Adapter (ATA). VCom's VistaMAX base station allocates the necessary QoS based upon characteristics of the admitted IP voice call. Calls are then terminated off-network by the AudioCodes' core media gateway. Service quality is maintained throughout the duration of the call, even when competing against bandwidth intensive video sessions.

Focusing on standards-based technology, the solution demonstrates the viability of differentiated services in an IP network. Components used in the demo are compatible with the emerging WiMAX standard for interoperability and with the IMS framework used for next-generation converged IP services.

http://www.cablematrix.com
http://www.vcom.com
http://www.audiocodes.com
http://www.emergent-netsolutions.com

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convergence, meet the new guy.

With the new OfficeServ™ 7400 platform from Samsung, the converged work environment just got bigger, better and faster. In the tradition of the OfficeServ™ 7200, the new OfficeServ 7400 provides wireless functionality along with wireline, analog voice, VoIP and data capabilities. Unlike its predecessor, however, this new platform offers more ports, a gigabit Ethernet backbone and 64-channel IP cards. It also boasts a more robust infrastructure for more powerful applications for more users. All deployed simply in a standard office environment or data center. And all thanks to the new guy.

For more information visit **www.samsungbcs.com/OS7400**

SAMSUNG

Leave Your Laptop Behind for Presentations

By Erik Linask

Live presentations are a part of everyday business and, with them, come presentation materials. Often, however, it would be considerably easier to leave the laptop in a hotel room or at the office rather than having to lug it along for the presentation.

T-Mobile (quote - news - alert) now makes that possible for its subscribers by making available to them Impatica ShowMate, the presentation solution that allows users to project PowerPoint presentations directly from their BlackBerry (quote -news - alert) wireless devices. ShowMate is a pocket-sized hardware device weighing less than nine ounces and supports all PowerPoint presentation features including rich text, images, charts, graphs, animations and slide transition effects.

ShowMate's simplicity of use makes it an optimal solution for mobile workers with a need for presentation materials. To get the show started, users open a PowerPoint e-mail attachment or select a presentation they previously saved to the device then connect the ShowMate to both the handheld and to a projector. The presentation is now ready to begin.

Presentation slides are displayed simultaneously on the BlackBerry and on the projector screen with text, graphics, charts, graphs, and even advanced animations and transition effects shown in full fidelity. The BlackBerry also becomes an easy-to-use remote, allowing the user to navigate through the presentation while being able to see the screen navigation on the device.

To make connecting the ShowMate device even easier, it now ships with a Bluetooth USB adapter so that it can be used wirelessly with Bluetooth-enabled BlackBerry handheld devices.

http://www.t-mobile.com
http://www.blackberry.com

Huawei Helps PCCW Achieve Real-time 3G TV Broadcast

PCCW (news - alert) launched its 3G mobile TV service, based on the innovative Cell Multimedia Broadcast (CMB) technology provided by Huawei Technologies, (news - alert) a provider of next generation telecommunications network solutions for operators around the world. PCCW has thus become the world's first provider of real-time TV broadcast over a 3G network, using CMB technology.

PCCW operates the world's largest IPTV service through its now TV and contents from now TV have just become available on PCCW mobile. Huawei's CMB technology realizes channel sharing and allows network capacity supporting large numbers of concurrent users with minimal impact on network loading, allowing for cost-effective delivery.

In the first phase, contents offered over the PCCW mobile network will include now TV's Business News Channel, with additional contects coming soon, including sports programming from ESPN and Sportev.

PCCW Executive Director, Mr. Alex Arena said, "This is a significant innovation by PCCW, allowing us to leverage our extensive content line-up to more people, across more of our platforms, fixed and mobile. We are excited to bring this groundbreaking 3G technology to our customers — another world-first for us."

http://www.pccwmobile.com
http://www.huawei.com

Tzero's Wireless Broadcast-Quality Video

Tzero Technologies (news - alert) has introduced its solution for delivering broadcast-quality video over wireless networks. The new Tzero TZ 7000 chipset meets the link reliability and packet error rate requirements defined by Panasonic, Philips, Samsung, Sharp, and Sony. Using the Tzero UWB solution, these consumer electronics manufacturers will be able to provide a completely wireless network for connecting home entertainment systems, computers, and other electronic devices within a home or office.

"With the popularity of wireless computer networks, consumers and business users are asking how they can link all of their electronic devices wirelessly whether it's their TVs, iPods, DVRs, or game boxes," said Ben Bajarin, Creative Strategies.

The Tzero TZ 7000 chipset solution has NLOS operation, which enables devices to communicate wirelessly through walls to extend across multiple rooms. It also features performance up to 10 million times greater than other wireless networks and transmission speeds of up to 480 Mbps to support even the highest demands of broadcast-quality video. Able to carry three or more HD video streams across a 20-meter range while running at 100Mbits per second, Tzero supports a completely wireless network that can easily connect multiple devices throughout the home or office at the same time.

The Tzero TZ 7000 UWB offering is a complete chipset solution, offering networked connectivity through a ubiquitous IP network. Supporting the WiMedia Alliance UWB standard, the Tzero solution provides the performance required for real-time video delivery. It also avoids interference from other devices, both in-band and out-of-band, which has affected other forms of wireless networks.

http://www.tzerotech.com

Creating an AirTight Wireless Network

By Erik Linask

AirTight Networks, (news - alert) a provider of wireless perimeter security solutions — just the technology wireless-enabled enterprises need to ensure optimal operating conditions —provides enterprises and service providers with 'round-the-clock wireless monitoring and automatic intrusion prevention, while managing wireless LAN performance for maximum performance, capacity and uptime. Importantly, AirTight's solutions can work for anyone, being scalable from as little as a single laptop to networks with literally millions of wireless devices.

AirTight has announced four new releases that, together, comprise the company's four-tiered network architecture for securing and managing networks. AirTight provides a robust, scalable, and manageable wireless intrusion prevention system (WIPS) capability, as well as a WLAN troubleshooting and management capability that can see, protect, and manage millions of WLAN devices simultaneously.

AirTight Networks' Wireless Intrusion Prevention and Performance Management (WIPPM) architecture is comprised of four tiers: the wireless devices or clients, wireless sensors that see and protect the clients, the WIPPM server that manages the sensors, and a Management Console that provides visibility, intrusion prevention, and management capabilities across multiple WIPPM servers and millions of wireless devices. AirTight's WIPPM architecture delivers lower capital and operations costs for a wireless network infrastructure, as well as higher performance, higher reliability, and higher security on that wireless infrastructure.

http://www.airtightnetworks.net

NexTone Launches "NexTone Compatible" Partner Program and Interoperability Lab

NexTone Communications (news - alert) announced it has launched the NexTone Compatible partner program and commissioned a supporting interoperability facility in Gaithersburg, Maryland. The "NexTone Compatible" partner program will use the state-of-the-art "NexTone Lab" for certifications. The purpose of this initiative is to help service providers accelerate their deployment of VoIP and IMS services by ensuring seamless interoperability between the NexTone IntelliConnectTM System and other service platforms.

The NexTone Compatible partner program provides multiple levels of certification ranging from product interoperability to turnkey solutions. The NexTone Lab houses partner equipment for certifications and is connected to other interoperability labs around the world. The NexTone Lab has already supported over 100 interoperability events with equipment from vendors such as Broadsoft, Cantata, Cisco, Nortel, and Sylantro.

"The openness and flexibility of IMS and VoIP technologies are creating new deployment complexities for service providers, with interoperability being their chief worry," said Satyanarayana Parimi, director of interoperability and quality assurance at NexTone. "Normally, service providers must spend months in their system integration labs to ensure that products purchased from separate vendors will work as a cohesive system. Our partner program and lab certifications assure service providers that NexTone's IntelliConnect System works seamlessly with other vendor products and solutions. Service providers can now jumpstart their revenue from new services and have access to a steady stream of new and exciting applications and services."

http://www.nextone.com

Juniper and Microsoft Enhance IPTV Security

By Cindy Waxer

In a move that should further the adoption of the IPTV, Juniper Networks (quote - news - alert) has agreed to provide security services for Microsoft Corp.'s (quote - news - alert) IPTV software. Juniper, a computer network equipment maker, and Microsoft are collaborating to provide end-to-end security to address the current and emerging needs of their service provider customers. With this agreement, Juniper can offer IPTV network security solutions to customers of Microsoft TV IPTV Edition.

The Juniper Firewall and Firewall IDP (Intrusion Detection and Prevention) product platforms complement the Microsoft TV IPTV Edition content security mechanisms to help protect the infrastructure from malicious traffic and attacks such as worms, trojans, spyware and application layer threats. In addition, Juniper will offer various security consulting services that assist operators to assess service infrastructure vulnerabilities and design network security solutions.

The Juniper security products offer cost-effective scale and performance, enabling operators to protect large numbers of video serving platforms. The security products include: Juniper Networks NetScreen-5200 and NetScreen-5400 Integrated Firewall/IPSec Virtual Private Network (VPN) appliances; Juniper Networks Integrated Security Gateway (ISG) 1000 and 2000 with Intrusion Detection and Prevention (IDP) appliances; Juniper Networks NetScreen-Security Manager.

http://www.juniper.net
http://www.microsoft.com

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Ciena Adds Dynamic Wavelength Routing to CN 4200 FlexSelect Platform

Ciena Corporation (news - alert) announced the addition of Dynamic Wavelength Routing capabilities to its CN 4200 FlexSelect Advanced Services Platform, creating a solution that uses a hybrid electrical and optical ROADM design to combine whole and sub-wavelength switching in one platform. Through efficient electrical grooming of services onto each wavelength, the CN 4200 ROADM uses up to 78 percent fewer wavelengths and, for the first time, brings the benefits of reconfigurable optical technology to any service rate down to 155 Mbps.

Combined with the CN 4200's software-defined FlexiPort technology and Optical Transport Network (OTN) support, the CN 4200 delivers the most flexible ROADM solution for grooming and switching the most amount of traffic on the fewest wavelengths. The platform also cost-effectively scales capacity and degrees of switching based on customer demand and offers service level management across the entire network.

"Due to rapid growth, quality of service sensitivity, and dynamic bandwidth demands, IPTV, VOD, VoIP, Ethernet, storage extension, and other advanced services are forcing service providers to increase their metro bandwidth flexibility for responding to unpredictable traffic patterns," said Jason Marcheck, Principal Optical Infrastructure Analyst at Current Analysis. "Designed to eliminate stranded bandwidth and offer full and sub-wavelength switching support down to 155 Mbps granularity, Ciena's hybrid approach to ROADM provides a flexible way to help carriers reduce the costs to plan, groom, switch and reconfigure optical transport."

Ciena's CN 4200 is the flagship product of its FlexSelect Architecture, a standards-based, service-oriented approach to building next-generation network infrastructures. The CN 4200 family of multiservice transport and aggregation platforms is capable of on-demand support for any transport protocol — including SONET/SDH, Ethernet, storage (Fibre Channel, FICON, ESCON) or video—at any speed on any available port using the industry's first universal line card with individual user-programmable ports.

http://www.ciena.com

GL Enhances VoIP Network Testing Tools

By Erik Linask

GL Communications (news - alert) provides PC-based test, analysis, and simulation products and services to the global telecommunications industry. Expanding its already robust product offering, GL has announced the availability of two enhanced packet test tools for VoIP networks.

PacketScan is GL's real-time VoIP analyzer that runs on a standard PC with a NIC card and is an invaluable tool for testing IP phones, gateways, routers, and switches, and proxies. Hundreds of calls can be monitored in real-time and detailed call statistics and data can be viewed simultaneously. QOS statistics are also gathered such as packet loss, gap, jitter, and delay.

The RTP Toolbox application is used to create, monitor, analyze, and terminate multiple RTP traffic streams. Received voice traffic can be analyzed by graphical and tabular methods such as oscilloscope and spectral displays, tone and speech levels, and voice can be recorded to file. Tones, dual tones, noise, and voice files can also be transmitted.

http://www.gl.com

ECI Telecom Unveils Powerful Feature Set for Its Flagship Optical Platform

ECI Telecom (news - alert) announced an extensive set of new features that enhances its end-to-end XDM optical solution, making it one of the most powerful metro/regional WDM/ROADM platforms on the market today for triple play delivery, wireless backhaul, business data connectivity, and carrier's carrier networks in North America, as well as the global market.

The latest XDM release significantly enhances both WDM/ROADM and SONET/SDH functionality, enabling service providers to build end-to-end optical transport networks (OTN), from access to core/regional, based on a single platform and with significantly simplified operations.

ECI's ROADM solution enables service providers to build agile, scalable and future-proof networks and to deploy new revenue generating services more quickly and easily, without re-engineering the network.

The compact XDM-40 extends DWDM and OTN networks to the access and customer premise. New high-end reach extension technologies, such as enhanced coding for 10G wavelength, LiNbO3 transceivers, and a wide range of optical fiber amplifiers and Raman amplifiers, enable XDM networks to cover more than 1500 km as well as to cross undersea and remote areas of over 300 km without in-line amplifiers or regenerators. All of the XDMs share a unique universal base card, upon which all 2.5G and 10G transponders and combiners are configured. Together with compact 10G and 2.5G widely tunable lasers, this approach enables carriers to keep spare parts costs to the absolute minimum and simplifies the network planning, installation, and maintenance processes.

http://www.ecitele.com

Kontron Bows High Density Xeon-based ATCA Processor Board

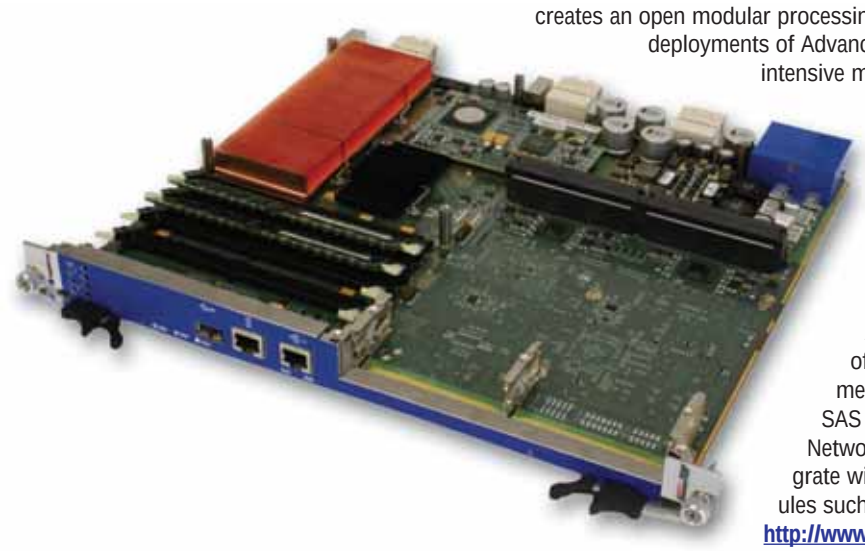
By Robert Liu

Kontron (news - alert) of Canada introduced the Kontron AT8020 AdvancedTCA processor board, which features two Dual-Core Intel Xeon processors LV 2.0 GHz and support for two AdvancedMC modules.

The company believes the double Sossaman-chip design, which is paired with Intel's Lindenhurst MCH E7520 server chipset with 667 MHz FSB and support for PCI Express, creates an open modular processing platform that will increase the number of deployments of AdvancedTCA solutions at the heart of every computer-intensive mobile-IMS network element from the transcoding of live multimedia mobile content on a Multimedia Resource Function Processor (MRFP) to concurrent processing of subscriber data on Home Subscriber Locator (HLR) systems.

The Kontron AT8020's Xeon processors feature 2MB 2nd level cache. Also unique to this board design is its two mid-size AdvancedMC sites for customization, up to 16 GB of DDR 400 Registered ECC SDRAM, and a flexible mezzanine switch fabric featuring a CrossSwitch for SAS and Ethernet. The AT8020 is designed with a Network Timing Subsystem for clocking support to integrate with a wide assortment of telecom I/O AMC modules such as T1/E1, OC-3 and others.

http://www.kontron.com



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AVIVA Networks Unveils 10 Gbps ATCA/MicroTCA Packet Processor Blade with DPI

AVIVA Networks (news - alert) announced its 10 Gbps packet processing engine featuring deep packet inspection for use in Advanced Telecom Computing Architecture (AdvancedTCA) and MicroTCA applications. Designed to improve network efficiency and performance, the new AMC10G IP Acceleration card allows telecom operators and enterprises to capitalize on a new generation of network applications and services, thereby reducing costs and increasing profits.

AVIVA's AMC10G design is based on EZchip Technologies' NP-2/10 network processing chip, one of the most advanced multi-core processors on the market. The chip's flexibility enables building platforms that deliver a wide variety of applications for Layer 2-4 switching and routing and Layer 5-7 stateful session processing and packet payload manipulation. The NP2/10 supports 10Gbit/sec full-duplex throughput (20Gbit/sec total). Embedded search engines allow routing and deep packet inspection also to be performed at wire speed.

AVIVA Networks' AMC10G IP Acceleration card prioritizes and manages IP traffic to optimize application performance, balance network loads and ensure the timely delivery of packets. It can deliver a wide range of functionality, with support for VLAN stacking, MPLS/VPLS, and IPv4/IPv6 routing coupled with advanced QoS, including DiffServ and IntServ. While the AMC10G can be employed as a mezzanine card within an ATCA environment, it also embraces the MicroTCA standard and can be deployed directly in a MicroTCA chassis.

In addition to traffic flow management, dynamic firewall policies can be applied at all network layers based on ICSA-certified implementations. The AMC10G provides a security policy management interface for dynamic policy implementation and statistics collection.
http://www.avivanetworks.com

Quintum Intros Tenor VoIP Call Routing Server II

By Michelle Pasquerello

Quintum Technologies (news - alert) has redesigned its Tenor Call Routing Server with cost and smaller applications in mind. The company has announced the Tenor Call Routing Server II (CRSII), which gives CLECs, ISPs, and next-generation service providers intelligent and scalable management capabilities to administer their routing of calls across their VoIP networks.

The CRSII offers the ability to route calls in real time built on QoS-based routing that automatically routes calls around any portions of the network that are not supporting acceptable QoS characteristics, source-based routing, route quality, best pattern match, circuit routing, domain priority, and load balancing. The CRSII also controls access to the voice network by disallowing endpoints, providing control over unauthorized access to your network resources.

Quintum officials noted that the CRSII is a valuable tool for service providers looking to improve real time call management control. "Quintum's new Call Routing Server II provides these same benefits to smaller applications at a very attractive price point," said Charles Rutledge, VP of marketing at Quintum.
http://www.quintum.com

Bulletproof VoIP Security for SIP Softphone Users

By Erik Linask

In order to provide customers with a "bulletproof" VoIP security solution, Covergence — (news - alert) which provides solutions to ensure scalability, security, and control of VoIP and other SIP-based services — has tested the ability to communicate between the CounterPath (news - alert) eyeBeam 1.5 Video SIP softphone and its own Eclipse SIP Session Manager using the IETF standards Transport Layer Security (TLS) for signaling information and its counterpart the Secure Real-time Transport Protocol (SRTP) for voice and video traffic.

Typically, any advance in security functionality results in some erosion of network performance. Because Eclipse has been specifically engineered from the ground up — it is not a retrofitted version of a previous solution — for SIP communications, any downturn in network efficiency is minimized so as not to interfere with service delivery in any user-noticeable way.

The end result of the testing is Covergence's announcement that it has certified CounterPath Solutions' eyeBeam 1.5 softphone application for use with Covergence's Eclipse solution. The duo is now set to offer the growing VoIP market a customers VoIP security solution that prevents any unauthorized access to the user's call while also protecting the provider. By using Eclipse, service providers give their customers the security and reliability they expect; when they combine that with the eyeBeam softphone, providers are providing their subscribers with the rich multi-modal communications experience required by today's complex user base.

http://www.covergence.com
http://www.counterpath.com

Pangean Technologies Enhances IP-based PA Systems

By Stefania Viscusi

Pangean Technologies, (news - alert) provider of SIP-based VoIP software applications for internal and campus-wide communications for the enterprise, is making voice broadcasted communications easier with the release of v2.0 of their insta-RELAY! IP-based Public Address (PA) system.

With the new release, communications over PA systems are made possible via SIP. This allows employees and other users to quickly tune into audio broadcasts on the corporate network over their PC — no matter where they are located, eliminating the need for hardware. The new version also integrates with traditional PA systems so broadcasts from these traditional systems to an employee or user PC are still possible.

In emergencies, the solution provides an IP-based emergency broadcast system.

The new version of insta-RELAY supports MYSQL as well as Pangean's Multicast Reflector, a solution that allows unicast-only networks to receive multicast communications, which enables multicast packets to go across corporate WAN links, even if multicast is not enabled.

http://www.pangeantech.com

Brekeke Speeds Development of Java-based SIP Apps

By Erik Linask

Brekeke Software, (news - alert) developer of voice and data communications technology, has released its Brekeke JTAPI SDK 1.0. Designed for Java software developers, Brekeke's JTAPI (Java Telephony Application Programming Interface) SDK is an implementation of Sun Microsystem's JTAPI 1.4.

The software development kit merges components of Brekeke's already popular OnDO SIP Server (a SIP Proxy and SIP Registrar) and OnDO PBX (an IP PBX). Both products have enjoyed success among VoIP implementations globally.

"Brekeke's JTAPI SDK does not require extensive knowledge of SIP technology, which makes it easier to learn and use compared to other development tools, such as JAIN or SIP Servlet framework," commented Shin Yamade, Brekeke CEO.

By combining features, Java software developers can easily create their own IVR, call service application, or conference server. Additionally, developers can convert existing non-SIP applications to SIP, re-use existing JTAPI applications, and integrate SIP-based telephony systems with other applications such as CRM or groupware.

Supporting such features as making calls, receiving calls, call transfer, call recording, call conference, playing sound files and DTMF recognition, the JTAPI SDK is available for a limited time through a trial program and is being offered at an introductory price exclusively through Brekeke Software.

Notably, this version of Brekeke's JTAPI SDK is not capable of creating a SIP phone; it lacks a feature that would associate the microphone and speaker. This feature may be added in a future release.

http://www.counterpath.com

Multi-Tech Announces New SIP-Focused VoIP Gateways

Multi-Tech Systems (news - alert) has introduced its new MultiVOIP voice and fax over IP gateways targeted towards businesses implementing SIP telephony. The new VoIP gateways are available in two-, four-, and eight-port models, and include features selected specifically for implementing SIP telephony. They are cost-effectively priced, while still offering business-class quality and performance.

The MultiVOIP FX gateways connect to analog ports using two, four, or eight FXS or FXO interfaces. They connect to an IP network using a 10/100BaseT interface, include an RS232 command port, can be controlled through a Web browser, and are flash upgradeable. These new models support SIP for sending and receiving voice over an IP network, T.38 real-time fax relaying for VoIP equipment interoperability, Voice Activity Detection for silence compression, Comfort Noise Generation for a more natural speaking experience, and they utilize 5.3K bps voice compression for maximizing bandwidth.

The SIP standard, primarily developed by the IETF SIP working group, allows for the interoperability of a large number of devices from various vendors with those devices being easily configured and automatically updated as necessary. The new MultiVOIP FX gateways enable the integration of existing telephony equipment into SIP networks.

SIP-based telephony networks offer stable interoperability with a wide range of features and flexibility. The new Multi-Tech Systems MultiVOIP FX products fit well into such networks by being able to adapt existing telephony equipment to evolving user requirements.

http://www.multitech.com

Yak Joins Forces with Intel

By Cindy Waxer

Yak Communications (news - alert) has teamed up with Intel (quote - news - alert) to market its VoIP services. The provider of legacy and VoIP telephony services to residential and business customers announced that it has signed a software license and distribution agreement with Intel. Yak will offer its WorldCity VoIP product suite in conjunction with the roll out of the Intel 600SM PCI Phone Adapter.

Aimed at simplicity and ease of use, the new Intel 600SM PCI Phone Adapter features an integrated Analog Telephone Adapter (ATA) that works seamlessly with Yak's VoIP premium telecommunication services: yakToAnyone and yakUnlimited services.

"Yak is thrilled to deliver a turnkey, easy to use VoIP solution in conjunction with the Intel 600SM PCI Phone Adapter, which makes it easier for our VoIP customers to access and enjoy our premium VoIP services," said Charles Zwebner, Chairman and CEO of Yak Communications Inc. "This relationship serves to both optimize our products for compatibility with phone ready PCs and provide a distribution model that will help us accelerate our execution plans on our VoIP business strategy."

http://www.yak.com, http://www.intel.com

Microsoft to Gain from Ubiquity Software Alliance

By Robert Liu

Microsoft (quote - news - alert) and Ubiquity Software (news - alert) will develop and market converged communications solutions to telecommunications to service providers worldwide. Under the terms of a new alliance, Microsoft and Ubiquity said they will help operators address critical issues such as the integration of service delivery platform (SDP) deployments with next-generation network implementations based on the IP Multimedia Subsystem (IMS) standard. The combined solutions will help operators extend the capabilities of IMS to create applications that integrate multiple Web services with real-time communications features.

From the deal, Microsoft gains from Ubiquity's Session Initiation Protocol (SIP) expertise. On the other side of the table, Microsoft's newest U.K. partner gains another distribution channel through the Microsoft Connected Services Framework, which, unlike the software giant's penetration on the client side, is facing considerably more challenges breaking into the vertical market for operators and carriers.

"Working with Ubiquity, we can provide operators with an integrated platform that leverages their investment in IMS infrastructure and introduces the innovation found in the Web world, enabling them to deliver rich, converged communications services to their users," said Maria Martinez, corporate vice president of the Communications Sector at Microsoft.

Since its introduction, Ubiquity's SIP application server (A/S) is that has won the support from major hardware vendors and telecom equipment manufacturers. For example, Intel has validated the open, standards-based service creation platform at its MSP Laboratories as a component of the Modular Communications Platform framework. SIP A/S has already been selected by many carriers to enable the rapid development and deployment of a broad range of advanced communications services.

http://www.ubiquitysoftware.com
http://www.microsoft.com

Sonus and Atreus Launch VoIP and IMS Offerings

By Johanne Torres

VoIP technology providers Sonus Networks (quote - news - alert) and Atreus Systems (news - alert) announced that they have joined forces to launch a self-care access portal as part of the Sonus Certified Voice over Broadband (VoBB) system.

The deal will make Atreus a member of the Sonus' Open Service Partner Alliance (OSPA). The partnership with Sonus will enable the company to deliver an integrated portal for service providers to automate the configuration and management of VoIP features.

The portal will also deliver a Web-based self-care service for consumer VoIP; a user-driven voice feature configuration; detailed logs of incoming, outgoing and missed calls; voicemail download and playback, and an entry-level system for an easier migration to the full self-provisioning system for Business VoIP, Wholesale VoIP and IMS-based offerings.

"Together, Atreus and Sonus are helping service providers of all sizes unlock VoIP's potential with entry-level self-care portals and facilitating their migration to fully-featured user self-provisioning solutions," said Len Castelli, vice president of business development, Atreus Systems. "This partnership will help service providers to differentiate themselves by automating the processes to quickly turn up VoIP and rich IMS-based multimedia offerings."

http://www.sonusnet.com, http://www.atreus-systems.com

WildBlue Signs Wholesale Distribution Agreements with DIRECTV and EchoStar

WildBlue Communications, (news - alert) a provider of broadband access to consumers and small offices, primarily in rural areas and small cities, has signed five-year wholesale distribution agreements with each of DIRECTV and EchoStar Communications. As part of these agreements, WildBlue is the only satellite-based Internet solution that each of DIRECTV and EchoStar will offer to their respective customers for the next five years.

DIRECTV and EchoStar currently offer digital television entertainment via satellite to a combined total of more than 27 million customers nationwide. WildBlue provides broadband Internet access via satellite to homes and small businesses in communities that are not currently served, or are underserved, by other broadband providers.

DIRECTV and EchoStar intend to begin offering WildBlue high-speed Internet service in the coming months across the contiguous United States, with further details on availability and pricing of their respective offerings forthcoming. The offerings will be provided separately under the DIRECTV and EchoStar brand names and sub-branded as "powered by WildBlue." The WildBlue broadband offering will be focused on small town America and rural markets.

http://www.wildblue.com

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Magic Software Enterprises sells CRM activity to eContact

Magic Software Enterprises, (news - alert) a provider of state-of-the-art business integration and development technology, announced that it has sold its CRM activity in Israel and abroad to eContact Software. The CRM system developed and marketed by Magic in recent years is a complex and unique system for managing customer relations and call centers, and is installed at hundreds of clients throughout the world.

eContact plans to make extensive modifications in the acquired product lines, including conversion to an Internet system incorporating Voice over IP. The transaction also includes incorporating Magic Software Enterprise's eService system, which specializes in providing service via the Internet. The eService system is designed for integration as the primary support component in eContact's future CRM system and, in particular, for pre/post-paid billing systems for WiFi and WiMAX systems.

According to Dory Asher, major shareholder in eContact: "The great technological flexibility and new product line capabilities of Magic Software enable the realization of eContact's business model, offering ground breaking CRM systems uniquely targeted at the SMB and SME niches based on Linux, Windows, and i5 (AS400). These systems will provide an integrative and organization-wide response based on Composite Application and implementation of SOA methodology. In addition, eContact's range of CRM systems will come ready to link to Voice over IP-based telephony systems."
http://www.magicsoftware.com

Symmetrics Launches New Version of Data Mart

Symmetrics Business Intelligence Solutions, (news - alert) a provider of reporting, analytics, and performance management solutions for the contact center market, announced the availability of nVISION Data Mart Version 1.5. Symmetrics' data mart solution addresses the demand from contact centers to more easily and effectively consolidate, access and analyze data from their applications in order to improve visibility into critical contact center performance information such as agent performance, system configuration, call flow, call lifetime details, and more.

To achieve the desired level of operational insight, most contact centers are faced with either trying to build out their own data integration solution or augmenting an existing application with new capabilities to fill analytic gaps. In either case, these contact centers risk "reinventing the wheel" and spending unnecessary time to design and implement a viable data model, data extraction processes, and basic report templates. nVision Data Mart help solve these issues, and more.

The nVISION Data Mart can work with multiple data sources and applications; however, the nVISION product suite delivers exceptional value for Nortel-centric contact centers. With features including data adaptors and a repository that allow Nortel users to optimize all Symposium Call Center Server/Contact Center Manager Server data (including historical, agent login logout and call-by-call), Nortel users can get up-and-running quickly. A number of Symmetrics customers have deployed a solution within only a couple of days.
http://www.symmetrics.net

Oracle Buys Telephony@Work

Oracle (quote - news - alert) is expanding its CRM On Demand offerings with the acquisition of Telephony@Work, a provider of IP-based software infrastructure for hosted contact center services.

Telephony@Work's (news - alert) CallCenterAnywhere is a carrier-grade, multi-channel contact center solution that provides an out of the box alternative to custom programming and systems integration for on demand and on-premise contact centers. Telephony@Work's multi-tenant capabilities enable compelling economies of scale that have been utilized by Fortune 100 companies and tier-1 carriers. In addition to offering CallCenterAnywhere through Oracle's Siebel Contact On Demand, the technology is also sold to end-user companies and to commercial service providers who host the technology on behalf of their corporate customers.

With the addition of Telephony@Work, Oracle becomes the first CRM applications provider, whether hosted as a service or licensed on-premise, to unify contact center technology and CRM software — delivering a complete "customer to agent" experience. By aligning contact center technologies more closely with CRM and business intelligence, Oracle plans to reduce the high cost and increasing complexity of integrating disparate contact center and CRM data, and also offer a range of flexible deployment options.
http://www.oracle.com, http://www.telephonyatwork.com

By Marc Robins

On Fertile Ground

An IP communications specialist's idea of nirvana might be a place where all networks, all systems and devices, and all applications are completely IP-based — where the pure waters of IP course through the land, nourishing all manner of rich multimedia, multimodal, and multipurpose services and applications.

Of course, nirvana is still a dream and the land of IP is still a work in progress. A number of direct IP and SIP peering initiatives point the way to a world where legacy TDM network infrastructures are a thing of the past and where conversions from TDM to IP and back again are the thing of nursery rhymes.

The reality, obviously, is that we're living in a mashed up world, where both legacy and next-generation must coexist with each other for some time, and we must find innovative ways to disrupt the status quo and deliver the next great killer app. It may come as a surprise, but this state of coexistence — the crossroads, if you will, where the Internet and Web, corporate LANs, PSTN, and wireless voice and data networks meet — is actually proving to be a great fertile ground that is spawning a host of new, innovative companies, technologies, products, and services.

I'm talking about companies like EQO, Iotum, FruCall, IPcelerate, and Tello — companies that have come up with products or services that not only bridge the old with the new, but also innovate brand new capabilities that make communications more manageable, more efficient, and more informative.

The first three have found ways to extend the capabilities of mobile communications and enrich the user experience in the process. Given that mobility and wireless communications are so critical to our business and personal lives, it's not surprising that finding ways to improve or add new twists to our mobile calling experience is a major focus for a number of companies. (It also doesn't hurt that there are now around two billion mobile phones in use around the world.)

EQO (http://www.eqo.com) has staked its fortunes on extending Skype to mobile phones. Now in beta, EQO just won the title of "Most Promising Start-Up" at the 2006 British Columbia Technology Impact Awards ceremony. In a nutshell, EQO is an application suite comprising EQO Mobile and EQO PC. EQO Mobile is a J2ME application that runs on your mobile phone. EQO PC is a plugin that runs on your PC, connecting your Skype user account to your mobile phone via EQO's secure, always on network. In order to extend Skype onto your mobile phone, you need to create an EQO account and install both applications.

From there, as long as EQO is running on your mobile phone and your computer, and as long as Skype is still connected to the Skype network, you can easily use the software to keep in touch with your buddies while on the move. When you call a Skype buddy or another number through the EQO client, or someone calls you from Skype, EQO routes the call to your phone over your regular wireless voice service using SkypeOut. The benefit is that you can make and receive Skype calls from anywhere on your mobile handset, without needing a highly advanced, expensive 3G mobile phone and without being connected to a high-speed wireless data network.

Iotum (http://www.iotum.com) attacks the mobile communications market from a call management angle. According to the company, the typical office worker is interrupted every three minutes by a phone call, e-mail, instant message, or other distraction. This constant interruption wreaks havoc with our focus, and disrupts and impairs our productivity. We need a way to help determine which communications are relevant and know that important calls will always get through to us.

Enter iotum's Relevance Engine: the world's first smart platform that prioritizes all voice communications. By mapping inbound communications to work behavior and priorities, iotum's service dramatically improves productivity by ensuring that inbound communications are relevant. Iotum's service is easy to set up and seamlessly connects to calendar and IM tools to determine how specific calls should be handled. It can be set up to making filtering and routing decisions based on who's calling, the time of day, calendar events, and more. The company is partnering with cellular, VoIP, and incumbent PSTN service providers around the world to add value to existing services.

Finally, FruCall (http://www.frucall.com) is a new company I've posted about in my blog, Beyond VoIP. FruCall is a new voice commerce service that solves a problem most of us have when we're out and about shopping retail. Since we're not yet at the promised land of ubiquitous broadband wireless access and easy to use and highly portable devices for doing a shopping.com price search as we're rolling down the aisles of Target are hard to come by, we need another solution. If you've ever tried to use your cell phone's built-in browser to do an online search, you know how frustrating an exercise this can be.

FruCall utilizes Voice XML and speech technology to offer shoppers the ability to check the Internet for the lowest prices on items they're viewing live in a retail store's aisle, simply by calling an 888 (toll free) number from their cell phones. Once they find the right price, they can even buy the item in question from Amazon.com or other shopping sites (new partners are being added frequently and the company is in discussions with CNET to utilize its superb pricing engine.)

FruCall is also currently in beta, and you don't need to register to try it out. So, next time you're out shopping, call FruCall at 1-888-DO-FRUCALL (1-888-363-7822) before you take an item to the register and see how much you can save. IT

Marc is Chief Evangelism Officer of RCG (Robins Consulting Group), a leading marketing, communications and business development firm dedicated to the IP Communications industry. For more information, call 718-548-7245, email info@robinsconsult.com or visit http://www.robinsconsult.com.

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By Tony Rybczynski

Technology and Small Business: Why Should You Care?

If you are like many small businesses, you may be overwhelmed by a plethora of technologies, all of which claim to allow you to grow your business, reduce expenses, improve customer service, and enhance employee productivity. After all, your focus is the day-to-day business, whether you are consumer service oriented (e.g., a retailer, restaurateur, motel operator), knowledge worker focused (e.g. a law offices, software developer, advertising agency, real estate agency), or in the wholesale product or service business.

Let's look at four important technologies that could make a difference for your business.

Getting Closer to Your Customers

In increasingly fragmented markets, it's more difficult than ever to retain, let alone grow, your customer base. The Web has become an important way to reach existing and new customers. Yet, the Web cuts out the personal touch in customer service.

As businesses of all sizes seek to evolve from the reactive "call me if you need me" model of customer service to a more proactive "we're here to delight you" model, they are increasingly moving to more comprehensive telephony handling capabilities to ensure that customer requests are handled promptly and in the most effective fashion.

If you are having trouble managing customer emails, voicemails, and faxes, unified messaging may be just what you need. Unified messaging captures all your voicemails and faxes in your email inbox. This allows you to visually select the most important ones to review, without having to listen to each message in a serial fashion. As a busy business owner, you can work more efficiently to respond to your customers, by accessing your unified inbox from any touchtone phone, PC, laptop, or PDA.

Staying Connected on the Move

Many small businesses make extensive use of cell phones to meet their mobility requirements. But, these often do not meet the needs for on-site mobility for data applications and are expensive if off-site mobility is not a requirement (as in the case of a retail or nursing application).

If you want to increase the on-site mobility of your people, you can deploy a wireless LAN and use telephony-enabled laptops and PDAs or wireless LAN handsets to stay connected. Staying connected ensures that time and distance do not become barriers to better customer service and more productive communications.

When away from your office, you can connect your telephony-enabled laptop or PDA via wireless LAN hot spots in coffee shops, via an Ethernet jacks in hotel rooms, and via DSL or cable modem connections at home. Just log in to your office network and you can make and receive calls and have access to all the same features as though you are in the office. As a result, you can avoid toll charges, reduce the dependence on calling cards, and reduce cell phone minutes — and you get broadband connectivity for data to boot. This radically redefines the meaning of the work to something you do, not somewhere you go.

The New IP Telephony Model

It all started with Internet technologies that now permeate not only the public Internet, but are now the foundation for networks run by businesses. Internet technologies include the Internet Protocol (IP), the lingua franca of networking, underlying wired and wireless Ethernet networks, as well as IP telephony. IP telephony leverages IP network connectivity to virtualize the phone system. IP phones can be anywhere there is an Ethernet connection, including home offices. The immediate benefits are obvious: one network to wire, build, operate, and secure, as compared to separate data and voice networks. Furthermore, if you have multiple sites, connecting these over broadband access (e.g. using DSL) can save you big bucks. You can even have a phone system in one site provide dial tone in your other sites, or you can outsource your telephony system to a managed service provider (e.g., a VAR or service provider).

The Web has become an important way to reach existing and new customers. Yet, the Web cuts out the personal touch in customer service.

A Telephone is Not Just a Telephone

With IP telephony, new functionality is being delivered that is not traditionally associated with telephones. In fact, your PC could become a phone by adding a bit of software and a headset.

In addition, IP phones with multi-line displays not only provide a friendlier way of accessing telephony features, but

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can also be used to access applications. For example, visual voicemail allows you to see a list of your voice messages, and have the ability to select the most important ones to review. During message playback, you can play, pause, and rewind using labeled soft keys on your phone rather than having to remember cryptic codes (e.g., '76' to delete a message). Push-to-talk is another neat example that enables a person using an IP phone to immediately connect with and talk to other users including those on wireless LAN handsets, while zone Paging enables users to page through groups of phones in specific zones without the expense of installing an overhead paging system.

Staying connected ensures that time and distance do not become barriers to better customer service and more productive communications.

Is There An Opportunity For You?

Technology is not an end in itself. Can the new IP telephony model enhance your operations? Can PC phones work for you? What about contact center technologies that are now affordable by smaller companies? Are your employees often away from the office or do they need to stay connected as they roam around your stocking room? If you rely on a lot of faxes, would you be able to manage these better through unified messaging? Looking at these opportunities should help you use technology for business advantage. IT

Tony Rybczynski is Director of Strategic Enterprise Technologies at Nortel. (quote - news - alert) He has over 20 years experience in the application of packet network technology. For more information, please visit http://www.nortel.com.

By Hunter Newby

ENUM Summit Raises Questions, Concerns

ENUM is rolling right along with a conference here and a discussion panel there. The most recent was the ENUM Summit in Boston. It was a well attended and professionally structured conference with a mix of theorists, scientists, and some people with real revenue generating service awareness to bring to the party. This combination of elements created an interesting reaction.

ENUM is capturing the attention of IP and PSTN audiences alike, but the attraction is polarized. There are those that wish to keep the economic models of the past alive, or at least centralized control and the power to influence prices. There are others working off of a clean slate. Those that primarily seek to control the future talk about the technology from the vantage of "being the authority." Being the "authority" on the subject is intended to indirectly lend credibility and, therefore, the power to steer agendas. With the agenda, there is a stated goal that all move to consensus on — hopefully. The other camp has no legacy encumbered vision of the future and is building their services with an open mind and open source in many instances. Their priority is creating a service that is accepted and used by the industry first. If, in the process, they become the dominant provider and, therefore, the "authority," well, that's capitalism.

The stated goal of the proclaimed authority and, more importantly, the path to the goal, were called into question by many at the Summit and it was evident that there is still a good deal of work to do before any such consensus is reached. One issue was the "cost" of ENUM to the users (carrier, end user, or others). Cable and Wireless Jamaica's representative wanted to know, "if they do not wish to be a part of the US 1+ ENUM, would they still have to pay something, just as they have to pay today to be a part of the North American Numbering Plan?" For this question and many others the answers weren't as clear as was hoped. Nevertheless, this is a major undertaking, trying to recreate a central authority for voice calls in an IP world. It will probably take a while to get every carrier in agreement and into an agreement. Good luck!

This overview is generally the plan that is in motion to create a hierarchy, both technically and politically with a governing body to rule the ENUM domain. But, what about the other half, those that actually have a service in production and are setting the new rules for voice calling out in the marketplace everyday — today. Where are the actual implementations?

Private ENUM registries exist and there are live examples of true success stories. Many carriers (including IXCs, CLECs, MSOs VoBBs), enterprises, universities, and even an RBOC have announced and actually implemented services from VoIP Peering providers. It appears that some of these service providers are so infuriating to the ENUM authorities that they might try to create an ENUM police force and have them arrested. Well, not really, but who knows? After all, the purpose of the authority is to identify and document the rules that all carriers using ENUM must abide by and have the FCC adopt it in some Communications Act. I suppose, the penalties for non-compliance with the top level root will be determined at the same time as the cost model. The other option is to ignore the private ENUM existence, at least in public.

Regardless, there were a few fundamental networking views in the room that were clearly flawed. The biggest rambling confusions were the debate about Public ENUM and the perceived non-existence of private IP networks. At the root of this is the difference between an individual subscriber using a device provided by a carrier (i.e., a mobile phone), and a private network (carrier, or enterprise) and the devices on those networks. An individual will most likely not register their own device to an ENUM database, whereas enterprise and carrier network managers routinely register IP addresses and control the functions of the network itself and the devices on it.

There are many enterprises that have private Wide Area Networks and run IP applications over them — more and more are running VoIP. Not only is this private network, NOT the Internet, but they specifically built to avoid any access to the Internet. This is for security reasons primarily, but also quality. It also conveniently avoids the whole Net Neutrality issue — which is another topic altogether.

These are private IP networks. When the enterprise network managers interconnect their networks to their peers' networks (other enterprises, or even carriers for in/outbound traffic to the PSTN) either through direct connections (private peering), or via a peering fabric, they are essentially building private Internets. This is happening with enterprise VoIP today and carriers have been doing it for a while. Amazingly, there were a few people in the room who didn't grasp the idea. To them, everything that uses IP is on the Internet, or else it doesn't work or isn't practical. They say, "Why would anyone build a network that can't be reached by everyone?" Again, for consumers, this may be true, but, for enterprise networks, the reasons are security and quality.

There are some people in the ENUM planning groups that aren't necessarily in touch with what is already actually happening. This may be a result of very large organizations not communicating internally or just different entities within the same company that have recently been merged and have never communicated in the past. The clash between what's real and what's theory is not limited to doers and seekers in different organizations, but includes even those within the same companies that have different agendas. The research people in the labs and the wholesale sales groups usually have very different revenue targets and degrees of authority in the company. In the end, the market decides what drives policy and that is based on what is available, in use, and making (or saving) money. We all have a long way to go, but natural selection has a way of sorting things out for the better. We all have events like the ENUM Summit to thank for helping us out in the process. IT

Hunter Newby is chief strategy officer at telx. (news - alert) For more information, please visit the company online at http://www.telx.com.

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By John Cimko

FCC Should Be Cautious About "Pretexting" Rules

When the Electronic Privacy Information Center (EPIC) filed a petition last year asking the FCC to impose additional obligations on carriers to toughen up security measures protecting customer proprietary network information (CPNI), most FCC watchers thought the petition would go nowhere. This view was reinforced when several major carriers opposed the petition in FCC filings.

But then, the picture changed. "Pretexting" — ploys by data brokers and others misrepresenting themselves as authorized customers to obtain carriers' CPNI — started to get more attention in the press and on Capitol Hill.

Now, while Congress works on legislation, the FCC has decided to consider requirements proposed by EPIC, including use of customer-set passwords, audit trails maintained by carriers to document the release of CPNI, encryption of stored CPNI data, requiring carriers to notify affected customers and the FCC about security breaches, and deletion of call detail records when they're no longer needed for billing or dispute resolution.

The FCC rulemaking proceeding has significance for VoIP providers for two reasons. First, there is a sentence in the rulemaking notice asking whether "any requirements the Commission adopts in the context of the present rulemaking [should] extend to VoIP service providers or other IP-enabled service providers." Second, if the FCC does impose new CPNI obligations on VoIP companies, complying with these obligations could be expensive.

Requirements regarding the confidentiality of CPNI in Section 222 of the Communications Act apply to telecommunications carriers but not to VoIP providers (which have not been classified by the FCC as carriers). Legislation pending in Congress would amend the statute to cover VoIP providers. Short of legislation, the FCC could attempt to exercise its general rulemaking authority to extend CPNI confidentiality obligations to VoIP providers.

Since VoIP providers — unlike telecommunications carriers — are subject to the Federal Trade Commission's jurisdiction, and the FTC regulates the customer privacy practices of VoIP providers, it may not be reasonable to subject VoIP providers to the FCC's CPNI requirements. (It also should be mentioned that the FTC's authority extends to the pretexting activities of data brokers, and the FTC filed complaints against several data brokers in federal court in May.)

In any event, a strong argument can be made that the types of additional CPNI requirements now being examined by the FCC don't make much sense for any voice service providers, or for their customers.

There are two problems with the EPIC proposal. First, instead of going after the "bad guys" directly, the proposal would impose requirements aimed at shoring up carriers' defenses against pretexting, hacking, and other efforts to gain unauthorized access to customer data. EPIC argues that "carriers are the primary source of CPNI; therefore, they should be the first line of defense against these practices of illegitimately accessing and selling CPNI."

A strong line of defense is important. In fact, many VoIP companies already have adopted privacy policies to protect customer information. But the imposition of additional regulations like those proposed by EPIC might not be very effective. Regulation could rob service providers of the flexibility needed to respond rapidly to the latest tricks used by data brokers to breach security barriers. Regulation could also lead to customer frustration, if the rules impair customers' efforts to obtain their own information.

Certain types of regulation, such as EPIC's encryption proposal, miss the point. Encrypting customer data is no defense against data brokers intent upon obtaining access through false pretenses. As CTIA has pointed out, "[e]ncryption does nothing to protect the customer from being impersonated."

The second problem with EPIC's approach is that it could be very costly for VoIP providers, which could drive up costs for consumers. Verizon has argued that some of EPIC's proposals "likely would cost the [telecommunications] industry hundreds of millions of dollars to develop and implement."

To take one example, the price tag for electronic audit trails could be steep. In the late 1990s, the FCC imposed an electronic audit trail requirement for CPNI, like the one EPIC is now proposing. The agency dropped the requirement in the face of industry opposition. BellSouth, for example, estimated it would have to spend at least $75 million to set up computer systems to comply with the audit trail requirement. Sprint put the price tag at $19.6 million for modifying its existing systems to comply with the new rule. In getting rid of the requirement, the FCC concluded that the "electronic audit trail requirement would generate massive data storage requirements at great cost."

If Congress and the press continue to spotlight the pretexting issue, the FCC may decide it's necessary to prescribe new requirements. If so, the FCC should follow several guideposts. Most importantly, the agency should balance costs against benefits, and avoid saddling VoIP providers and other carriers with burdensome requirements that don't ensure effective results. The agency also should fashion rules that build upon steps the industry is already taking to combat pretexting and similar fraudulent activities. Finally, the FCC should explore ways to assist in taking preventive and enforcement actions directly against data brokers and other perpetrators who are victimizing carriers and their customers. IT

John Cimko served for fifteen years at the FCC and currently practices law at Greenberg Traurig LLP. He can be reached at cimkoj@gtlaw.com.

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By Todd Sharp

The Cornerstones of Managed Services: Getting Exactly What Your Business Needs

We've all heard the phrase, "everything old is new again." While the current slate of industry offerings under the managed services provider (MSP) banner traces its basic roots back to the ASPs of the late '90s and even to the (dare I say it?) centralized service bureaus offered two decades before that, today's MSPs offer a far richer selection of products and services than ever before.

Organizations large and small, single and multi-location, with in-house or outsourced IT staff, must closely consider the advantages and benefits available from leveraging MSP offerings currently in the marketplace.

What is an MSP? Companies using the MSP tag today range from traditional system integrators, perhaps providing remote monitoring and support services (often VARs), to single application vendors provided through a hosted offering (think remote backup or hosted CRM software). They also include application-agnostic providers (ISPs or collocation centers) and those with a more highly evolved offering — those providers combining the efficiencies of centralized hosting, the flexibility of a traditional integrator, and the in-depth expertise of a professional services firm, most often grounded around a range of blended horizontal or vertical applications for business.

In contrast to past incarnations, MSPs today, regardless of focus, have the power of bandwidth, remote access, and Web services on their side, giving them the ability to deliver increased capabilities with continuity to a wide range of customers. At the same time, they are able to shield these customers from the cost and complexity inherent in the enterprise solutions they adopt.

So, what's an organization to do?

In the race to quickly and properly identify any given opportunity as either a threat or boost to competitiveness, organizations often face a challenge that all too easily may boil down to a decision between resource allocation and business capability. Unfortunately, the downsizing and offshore trends taking root within the first decade of the early 21st century often press decision makers into deciding between a perceived need for internal capabilities (need for headcount) and the desire to outsource to receive the benefits of technology adoption without the burdens of scope creep (with respect to internal IT's core competencies.)

Perhaps your team is ready to accept new technical challenges, but is the business ready to support them while they come up the learning curve?

An organization must, therefore, evaluate its own needs within the context of service offerings not only rapidly, but objectively as well. It must reach a decision enabling the organization to increase its overall competitiveness by permitting the best blend of many critical factors.

To provide an answer in a systematic manner while demonstrating the appropriateness of any given decision to stakeholders across functional groups, it is often useful to break the evaluation down into cornerstones of evaluation — competency, continuity, cost, and capability.

Competency

The term competency, within the context of the evaluation of an MSP, is not meant to be applied only to technical acumen, training, or certifications. When evaluating whether or how an MSP's offering may benefit an organization, it is often useful to provide equal weight to intimacy and flexibility, with respect to an MSP's ability and record for addressing business needs of its customers, should be given equal consideration. If you needed a cookie cutter solution just like 'anyone else,' you could browse to 'Joe's Web application warehouse,' run through a few clicks, enter your corporate credit card, and be online enjoying the benefits of your new whiz-bang application. Although that may work with some applications, MSPs are set up to provide greater value.

Continuity

Service providers of all types, although some might love you to think otherwise, are susceptible to service outages from time to time. Regardless of how many redundant connections, power sources, servers, SLAs, and 24-hour staff a service provider offers, occasionally, they may nevertheless be vulnerable to some traumatic issue. What is more important is their track record for uptime, their responsiveness to issues reported, as evidenced by customer references and their procedures for minimizing even the smallest chance of an outage. Therefore, it is incumbent upon you to ask the tough questions. Invest time in touring facilities. Ask for increases above standard service level guarantees, if necessary, even if it

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comes at an increased price. Finally, make certain any MSP has reference customers.

Cost

You can't have a return on an investment without the ability to quantify the cost. In most cases, costs involved for trial programs, pilots, or through promotions do not hold true through long-term arrangements, so it is critical to project real costs across multi-year arrangements. Although it is critical to have clearly defined criteria for acceptable levels of service, it is equally important to quantify, as objectively as possible, both the hard and soft dollar costs required to adopt an apples to apples solution in-house. Perhaps your team is ready to accept new technical challenges, but is the business ready to support them while they come up the learning curve? What are the savings over not having to pay licensing and maintenance over a three-year term? How much time will your staff spend installing and maintaining this new source of competitive advantage if installed on premise? How protected are you from price escalations, should your service provider make adjustments down the road?

Capability

In the end, if the service provider offering doesn't deliver additional capabilities into your organization either by offloading responsibilities, adding capabilities, enhancing available features, decreasing incremental cost, or increasing business velocity (defined as a business' ability to change its acceleration — increasing or decreasing usage as needed to adjust to business conditions, as opposed to business inertia — the tendency to remain in its current state) then it may not be the right solution or the right time for an organization to begin leveraging the strengths of an MSP within its operation. Just as revenues and expenses fall to the bottom line, so must the net capabilities an organization receives from working with an MSP.

By carefully quantifying and evaluating these four cornerstones against an organization's needs and an MSP's offerings, an organization illuminate the benefits of making the choice to embrace an MSP as part of the daily operations. Although many organizations perceive diminished capacity in outsourcing certain functions, the industry is growing rapidly because of the simple fact that a well run MSP can provide the four Cs, often at a service level higher than available from commercially reasonable resource allocations within any single organization. Particularly within the SMB sectors, adopting MSP offerings as part of an overall strategy can lead to superior, predictable, sustainable advantages. IT

Todd Sharp is Director of Engage, Incorporated. (news - alert) For more information, please visit the company online at http://www.engage2day.com.

By Kelly Anderson

IPTV: Bringing Back Office Usage Data into the Front Office

Traditionally, the term "usage" has been associated with network engineers, billing analysts, scary systems no one understands, and a lot of errors that seem to delay the launch of brilliant products. Being a former billing manager myself, the word "usage" spoken in a corporate strategic meeting was enough to gloss over a few eyes and yield a yawn or two. Needless to say, I was never the most popular attendee. If IPTV had been in the product mix ten years ago, that may have changed. I think a new boardroom discussion could be on the horizon.

The collecting and analyzing of usage records could just be the missing ingredient of success for a service provider looking to provide a differentiated (aka "cool") IPTV service. The potential of personalization, TV and gaming interaction, customer use information, and low service delivery costs should keep any product manager dreaming of dollar signs. The billing department has long known the potential of having call data to build better products and create calling plans to meet customer needs. Now this knowledge can be used for some the most high level decisions about future services.

Knowing and understanding how and when your customers use your service is arguably the most important attribute to a product management organization. The ability to determine when you have a flop or when your offer is working, based on the usage your customers are generating in real to near-real time, would be a dream for the person who lives and dies by the P&L of IPTV services. Alas, this cornucopia of data does not happen on its own. Defining and deciding what data is important about a customer's transaction takes strategy and thought from all areas of the company. Accounting will be interested that costs are not out of line; Product Management will be interested in what services are utilized and what features are used most often; Billing will need to bill; and Network Planning will need to ensure adequate bandwidth. The next step will be determining where each one of the data elements is sourced and how to get the data in an aggregate form. With the current architecture of most IPTV test markets, this represents a big challenge. Most services today are in a limited launch or test mode and comprise a number of vendors that may not necessarily define data in the same way. Several articles have been written about the challenges of getting equipment and software vendors to interoperate on IPTV services. Having 40 people in a room speaking several different languages will never get a problem solved, no matter how much money is thrown at it.

Does having a central standard that allows various network components to create a consistent data model make sense? I am here to say, "Absolutely!" Developing a strategic process and clear definition to glean crucial session information allows the back office to provide clear, consistent information to front office executives about how new IPTV services are being used and what revenue is being generated by bundled services. In addition, information on how services are used in the aggregate is great to have when negotiating agreements with content providers and advertisers. Usage could prove to be one the most effective ways to understand and respond to customers.

Creating accounting standards is akin to "watching paint peel." It seems that every time I mention a new project and the word "standardization," I get blank stares and quick watch peeks. The communications industry has associated standards organizations with dinosaurs of the past just trying to survive through meaningless work. Maybe that is the way it was handled for several years, but it has to change. Companies need to be proactive in using solutions that will not only assist their business, but will also allow for the interoperability of equipment, software, and network components of IPTV solutions.

IPDR.org is working in conjunction with other IPTV efforts to complete standards for content usage tracking and data management as quickly as possible. Its consortium of software and services vendors, service providers, and equipment suppliers has created a suite of specifications — the Internet Protocol Detail Record (IPDR) solution set — that can be used as a vehicle to provide the data to internal resources, which is critical for marketing, billing, network management, and finance. IPDR is an open standard and available for download By member organizations. The IPDR protocol is a "service-neutral" specification that supports billing of packet-based services, and can be applied to any IP service and application (i.e., gaming, IPTV, VoIP, and Video on Demand). IT

Every time I mention a new project and the word "standardization," I get blank stares and quick watch peeks.

Kelly Anderson is President and COO of IPDR.org. (news - alert) For more information, please visit the consortium online at http://www.ipdr.org.

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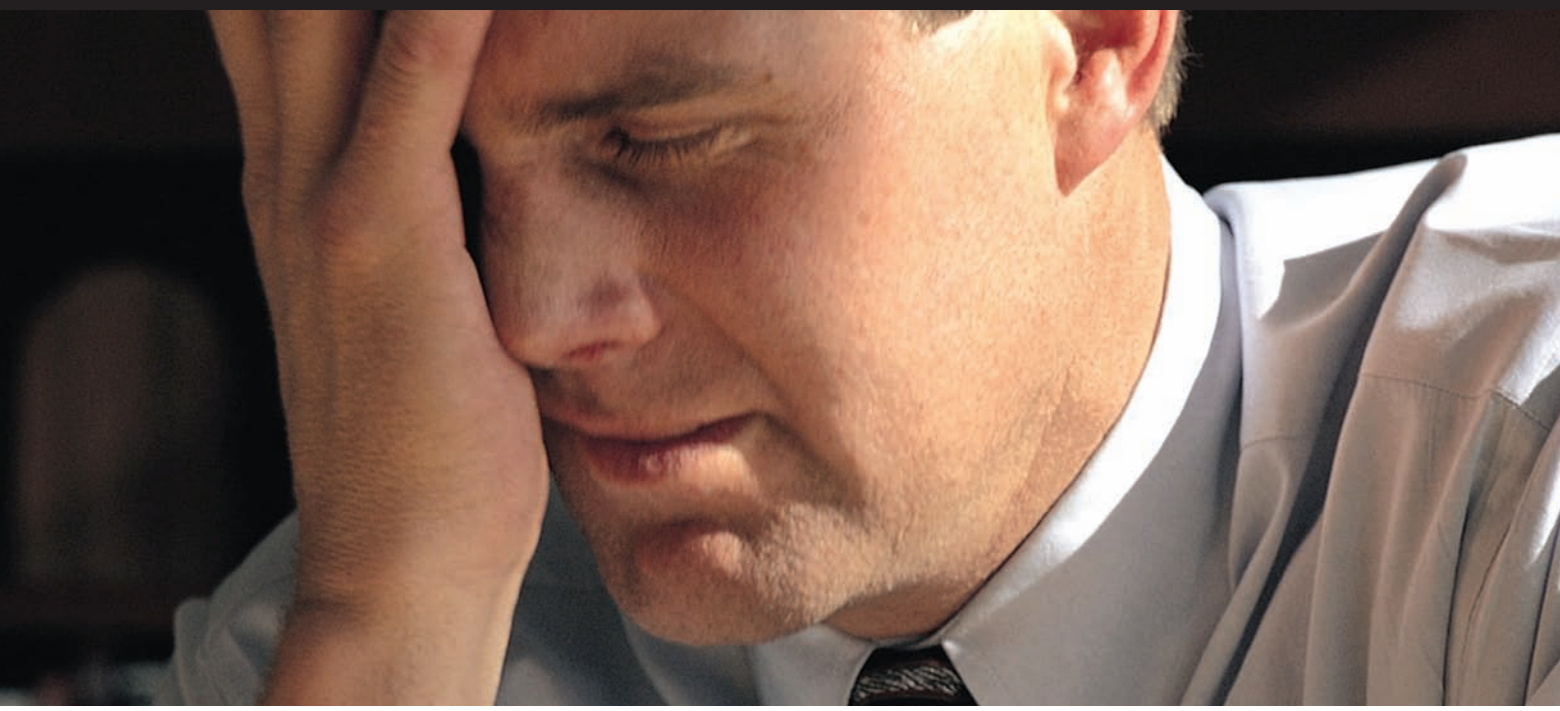
Don't Make a Million Dollar Voice Messaging Mistake



How much money can you expect to spend if you change to a new family of messaging systems? Our customers tell us that it's twice as expensive to purchase a new messaging system versus upgrading their current system!

Why?

- There is a huge time and expense commitment in training new users, re-recording greetings and auto attendants and rebuilding distribution lists.
- Users resist learning new user interfaces, and get little help from confused employees and overwhelmed help desks.
- Database conversions can be more complicated than anticipated.

At **CommuniTech Services**, we've specialized in providing and supporting voice messaging systems since 1983. We have the answers that solve your most critical concerns, including these:

Have you made sure that that the critical features you use now are available on your new system?
New "state-of-the-art" systems often lack the features you expect. Some don't even offer automated attendant.

Does your vendor know both the voice messaging applications and the capabilities of the new technology and can bridge the old with the new?
We know messaging intimately in both the TDM and IP worlds along with *Find Me, Follow Me, Unified Messaging, IVR,* and *Speech Recognition* and other productivity enhancers. Don't pay for your vendor's learning curve.

Does your vendor know how to proactively monitor and optimize systems that have heavy demand, high up-time requirements?
This is part of our standard support service. Don't wait for your system to malfunction...we'll make sure it never does.

If you're considering a messaging product from your PBX vendor, is their experience limited to just integrating their own messaging system to their own phone system? What if you need to integrate with other PBX's, e-mail or Presence servers, Speech Recognition, IVR or other Voice Messaging platforms?
As a messaging focused systems integrator, we can handle all of your future needs.

Does your system have the latest design considerations for up-time and high security requirements?
Our systems are built for maximum reliability and up-time. From the operating system to the CPU and power supplies, we are focused on insuring your up-time.

Can your vendor help devise marketing programs to help you get your user communities to use your services and to help you sell your services?
We'll help you sell your users on the services you provide

What other hidden costs of ownership are there?
Many vendors are inexperienced in sizing systems which leads to spending more than is necessary. We'll help you make the right decision the first time. Needs change – an expert in messaging can ensure that your messaging platform can adapt and thrive in an ever changing, complex environment.

CommuniTech Services can help you avoid potentially costly mistakes with your messaging systems needs. For more information, call us at 847.981.1200 extension 480.

CS

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By Rich Tehrani & Max Schroeder

Continuity Planning 101
A Continuing Educational Series

Secure Last Minute Disaster Planning Options

Summer is here again and hurricane season is in full swing; tornadoes are likely in many states, fires can happen anywhere, and the same goes for power outages. What do you do if you still have not put a business continuity plan into place? Fortunately, today's converged IP technologies provide for quick, simple, and secure methods of implementing a plan. Let's look as some scenarios and available solutions.

Scenario A — Medical practice with confidential patient records and concerns regarding HIPPA regulatory compliance: (For additional information on compliance refer to: http://www.tmcnet.com/317.1)

Most medical practices are small, with limited IT resources, so any solution must be easy to implement and cost effective. DocumentMall, (http://www.documentmall.com) a service of Ricoh Corporation, is an ideal solution for the medical market and is also suitable for legal, real estate, financial services, insurance, and government. You can use DocumentMall for simple, secure electronic file storage, content management, business process management, and online sharing with just a few people or for collaboration on a global scale. Access is via a thin client and the security policy encompasses physical access control to the DocumentMall document vault, Secure Socket Layer (128-bit SSL) for encrypting communication and the use of firewalls. DocumentMall accepts scanned documents from multifunctional products that have scan-to-email capabilities. When integrated with Ricoh's family of MFPs, you can access DocumentMall directly from the MFP touch screen panel and scan, OCR, encrypt, and securely upload your paper-based documents directly into your account. The building site is located in Boca Raton Florida, is Category 5 rated, and is very secure, with redundant communications pipes (Max has actually visited the site).

Scenario B — Your company could handle a couple of days of downtime and relocate to a cold site, if necessary, for services like billing, accounts payable, and order processing, but customer support must be online 24/7.

With the advent of VoIP, FoIP, Web chat, and e-mail, locating a company's support centers in primary business locations was no longer necessary. The staff can be anywhere as can the physical infrastructure; all you need are high-speed connections to have full communications capabilities. You can even be at a hot spot having coffee and still be on line as an agent or as a supervisor managing your support center agents.

For example, Verizon Business (http://www.verizonbusiness.com) recently introduced its Business Resilience Solutions Portfolio, which will allow public and private entities to more effectively plan, manage, and overcome unforeseen events by using a comprehensive portfolio of integrated services. Verizon Business has joined forces with business continuity planning software and services leader Strohl Systems to provide customer planning services. Network attached storage platforms and software are from EMC Corporation and network equipment from Cisco Systems. Resilient Network Attached Storage (RNAS) is a totally integrated solution, combining network transport, access, and a network attached storage platform. The portfolio of services extends from initial business impact analysis to strategy development, plan development, implementation, plus testing and maintenance.

Another company that provides a quick turnaround to get you online is Promero, Inc. of Pompano Beach, Florida (http://www.promero.com). Promero is an on-demand CRM and call center software service provider supporting corporate, home-based and offshore users. Promero's current software offerings include CallCenter@nywhere, a virtual call center application from Telephony@Work (http://www.telephonyatwork.com) and ProStarCRM, an on-demand customer relationship management software application. Promero prides itself on rapid deployment. Generally, this means less than 15 days, but most of this is due to the re-provisoning of the existing telco numbers, not the time it takes Promero's tean to get you up and running. Promero's services can be used for backup or as the primary site if you outsource all of your contact needs.

With the advent of VoIP, FoIP, Web chat, and e-mail, locating a company's support centers in primary business locations was no longer necessary.

Scenario C — Company X is in the process of developing a

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mobile workforce business model. The process needs to happen swiftly, but not everything has been finalized, so the company wants to stage the deployment over several months. A key component to the plan is maintaining security throughout the deployment process and post-deployment to provide for business continuity.

KoolSpan (http://www.koolspan.com) markets a line of security products that is both mobile and matched to the challenges of business continuity. The products allow for remote access and are an alternative to SSL and IPSec VPN solutions. KoolSpan uses a combination of Locks and Keys, plus an Enterprise Manager to provide a Smart Card-to-Smart Card architecture. The design allows for the pre-provisioning of secure primary and secondary network communications. All Locks and Keys are pre-programmed by the enterprise (more specifically, their Smart Cards), so that they can be moved/shipped and installed without further configuration. A Lock form factor is about the size of a VHS cassette tape and the Key is housed in a USB token, so all components are highly mobile. Redundancy is intrinsic to the solution, as a user Key can connect to up to 16 different discrete/logical networks and a Lock can automatically connect to up to eight.

The above scenarios demonstrate a unique facet about VoIP, FoIP, and converged IP operations — great solutions for everyday business and even better for backup operations. Each of the above vendors and solution service providers has offerings that are cost-effective and will increase productivity for every day operations. They all meet the needs of in-house, remote, or mobile employees and have features that are simple to use and are quickly and easily deployed. Any of the three could be a solution component for any of the three scenarios. So, if you haven't made the decision to move to a converged IP model, what are you waiting for?

If your company is interested in business continuity planning please visit http://www.tmcnet.com/channels/disaster-preparedness/ to view additional information provided by DPCF members, TMC and the ECA. IT

Max Schroeder is a board member of the ECA, media relations committee chairman, and liaison to TMC. He is also the Sr. Vice President of FaxCore, Inc. (news - alert)

Rich Tehrani is the President and Group Editor-in-Chief at TMC and is Conference Chairman of Internet Telephony Conference & EXPO.

If your organization has an interest in participating in the TMC/ECA Disaster Preparedness Communications Forum, please contact maxschroeder@tmcnet.com or rtehrani@tmcnet.com.

By Mike Katz

Skype's Attack on Traditional Telecom: Where Will it Lead?

By now, you've all heard about the leader in virtual telecom, Skype, which has more than 100 million customers worldwide, and how it has thrown its competition — VoIP (define - news - alert) operators, alternatives like Microsoft (which, by the way, has a free calling beta going on with a limited customer base), Google, Yahoo, AOL, and the legacy telecom operators, a gigantic curve ball, according to the press. To recap, from now until the end of 2006, users will be able to make SkypeOut calls for free. From Skype's perspective, it's simply the choice to try an alternative virtual telecom service. This means you can call anyone in North America and Canada for nothing using Skype. So, what's the likely effect on the rest of Telecom? Is it the end of the legacy telecom operators' reign over every call we make? Will VoIP operators, like Vonage, still have an IPO, or worse, a business? Will the legacy telecom providers just strike out, or will they strike back.

Skype's Market Attachment

While I applaud Skype's (news - alert) marketing chutzpa, it's not a sustainable business model for a telecom operator to give away free calls to subscribers. The call termination cost alone in the six months left in this year will be significant. The real experience to date, as of five days after the launch of the service, is mixed. One in five calls doesn't get through and most failed calls prompt the message, "You need to purchase SkypeOut credits to make a call." While I'm sure that these are just start-up woes, it does take the shine off of the offer.

However, this is really a marketing promotion, after all, and the termination fees are really just customer acquisition costs for SkypeOut as a service. This promotion targets the hardest market to penetrate: North America. Skype's adoption rates in North America have not been good, compared to its successes in other countries. So, free calling makes Skype more interesting to try and potentially keep using after the six month free call period ends. Assuming the start-up woes diminish, this move will put pricing pressure on all of Skype's rivals. Who will lose? Who wins?

Real Data Behind the Hype

A fair analysis of both legacy and virtual telecom offers yields an interesting picture. To be fair, Skpye's offer is only one-half of typical Telecom needs: you need to purchase inbound call support, or SkypeIn. SkypeIn is $38.20 per year ($3.18 per month). You'll also need a DSL line and, at a minimum, what most carriers refer to as a "dry loop," a DSL-capable phone line without the voice service. Taking a liberal 30% of the cost for voice service adds at least $10.50 more per month. Third, Skype, unlike the legacy telecom service offerings and the alternative VoIP offerings, does not support 911 calls. No costs are apportioned for this unsupported service. Given these issues, is Skype's offer a good deal for most consumers? (See table 1.)

Average Monthly Telecom Consumer Costs Comparision — Table 1

	Verizon (landline)	Vonage	Skype
Local and unlimited long distancetelephone service (1)	$39.95	$14.95	Free
Monthly Inbound line # and line cost (2)	Free	Free	$3.18
Applications and incremental features (web account access, Voicemail, Video service, addtional features plus self service feature management like Caller ID, Voice Mail retrieval (requires a compatible Verizon Home Voice Mail product), real-time Call Management, Call Forwarding, Calendar, Address Book, Text Messaging) (3)	$7.95	Free	Free
Monthly portion of a DSL line used for calls — 30% (dry loop charge w/out voice calling capability + DSL fee)	Not Required	$10.49	$10.49
Total	**$47.90**	**$25.44**	**$13.67**

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Table 1 notes:

(1) Based on Verizon Freedom calling plan and Vonage published rates as of May 19, 2006.

(2) Skype-in is required to receive calls. Fee is 1/12th of the yearly cost of $38.20.

(3) Applications are provided FREE with the virtual operators solutions. Verizon's Iobi service adds like functionality to their land line offering for $7.95 per month.

While I applaud Skype's marketing chutzpa, it's not a sustainable business model for a telecom operator to give away free calls to subscribers.

It's the Applications That Count!

If we stay strictly with the data, Skype's offer is less then a third the cost of a Verizon land-line offer for the same set of services, including applications and half of what the leading VoIP alternative charges. Does 911 support count? Yes, but how long will it be before Skype gobbles up an E-911 service provider and offers its own branded version to its users? This event is real change in a market so often viewed as ponderous and slow. Skype has am already enormous base, to which it is focused on adding additional customers and new applications (e.g., Video calling, conferencing, and more). But wait, so are Vonage, CallVantage, Google, Yahoo, Microsoft and AOL. They, along with Skype, realize that the market is beyond merely a voice call and its feature sets and that its application services that differentiate legacy offers from theirs both today and tomorrow. Even Verizon gets this, with its Iobi home service. Will legacy providers get it together in time? Will they strike back by banning VoIP traffic on their DSL offers, à la a recent announcement in the wireless world from T-Mobile regarding its Web 'n' Walk service? Will all talk about IMS convert to action and save the day? Either way, Internet telephony and value added application services are poised to strike out the legacy landline providers and they must strike back. IT

Mike Katz is director of product marketing for NMS Communications. (news - alert) For more information, please visit the company online at http://www.nmscmmunications.com.

Global IP Sound's Gary Hermansen

Rich Tehrani's Executive Suite is a monthly feature in which leading executives in the VoIP/IP Communications industry discuss their company's latest developments with TMC president Rich Tehrani as well as providing analysis on industry news and trends.

In this issue, Rich speaks with Gary Hermansen, CEO of Global IP Sound. (news - alert)

Somewhere around the year 2001, I became familiar with a company called Global IP Sound (GIPS). I can't remember the exact date, but I do remember what I first thought when I saw the company's application, which allowed truly amazing VoIP voice quality on a wireless-enabled PDA.

After I saw this demo, I realized how big the WiFi telephony space would become. What I didn't realize, though, is how GIPS would become a company famous for allowing other companies to rapidly build VoIP products and services of their own.

Think of the company as an engine manufacturer across the VoIP industry. Much the same way that Porsche engines show up in a line of Porsche cars as well as airplanes, the GIPS voice engine powers software as well as hardware.

One of the most recent applications of its technology is a futuristic speakerphone from a company called LifeSize. Also, among the company's client list is the world's best known VoIP name: Skype. Clearly, this is a major account that legitimizes the company's dominance in the market.

The company's CEO Gary Hermansen is truly a pioneer in IP communications. His brainchild allows other companies to rapidly get into the VoIP market without having to go through the heavy lifting of dealing with the basics of quality VoIP transmission over a variety of connection types be they wireline or wireless.

I spoke with Gary regarding the future of IP communications. The results of that conversation appear here.

RT: How has your business changed as a result of supplying solutions to Skype?

GH: It is not so much "how has our business changed?" but rather, "how has the market changed?" Before Skype, the majority of revenue or dollars being exchanged for VoIP (define - news - alert) was focused on equipment providers to large telcos. What I would call the "Skype phenomenon" is that people actually see peer-to-peer and presence, along with voice, as an acceptable communication method. In turn, our engine strategy has allowed developers to come to market quickly with the highest quality voice. We see not only "Skype wannabes" but people who are taking peer-to-peer into many directions. That's one of the main reasons that we've launched our developer community. It allows the next Skypes to create innovative communication solutions that we can't even imagine today.

RT: Can you comment on what products we can see from your company soon?

GH: We see ourselves continuing to be the engines that drive the voice communications market. With that said, we've made recent announcements regarding video and mobile. I would expect that we'll continue to add value in those market segments.

RT: Please give us more information on your recent patents and what they do for you.

GH: IP (Intellectual Property) is the thing we develop and license. We hold more patents than any other company in the VoIP speech processing space. To date, we have received six patents and six more are still pending. These patents are a validation of that IP and the value they provide to the market. We will continue to innovate and create value in this area as well.

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RT: Where is the VoIP market headed?

GH: VoIP is headed to a place where the term VoIP will no longer be used to define it. There is always talk about the "killer app" and when you look at the market, voice is the killer app. With the expansion of voice into areas such as gaming, social networking and embedded into applications, voice, and the availability of voice, will be ubiquitous. In the next few years the idea of communication will not require the use of your phone or a specific location — it will just be.

RT: Describe your business outlook from 2001 till now. When did you realize that things were definitely getting better?

GH: We've always been a focused organization and continue to be focused on the opportunities at hand. People often ask what our customer sale cycles are and we can comfortably say they are six months to six years. Meaning, there are companies that we worked with in 2001 and continue to do so today.

RT: How long do you think this phenomenal VoIP growth will last?

GH: We don't think the real market has presented itself yet. If you consider issues like broadband penetration, naked broadband, e911, CALEA, and wireless network strategies, the market has yet to arrive. We believe that we are at the very beginning of the market and that there is no phenomenon.

RT: Do you have any thought on VoIP being used to build voice communities?

GH: We totally agree with the concept of voice communities in that with the development of all these communication means you'll see voice at the center of them. Looking at the IM world a few years ago, it was considered a youth community and, now, every enterprise utilizes the capability. Adding voice to this area alone will build voice communities.

VoIP is headed to a place where the term VoIP will no longer be used to define it.

RT: What do you think about the future of WiFi telephony? What can we expect?

GH: WiFi is just another IP network to us. We think that WiFi in the home, WiFi in the enterprise, and wide-area WiFi will all be in the market at some point. Some sooner than later. Voice will be a major driver to the success of WiFi. You'll see cordless phones replaced by WiFi for consumers. You'll see WiFi phones in enterprise replacing and supplementing desktop systems. You'll also have dual mode mobile phones in the next two to four years.

RT: How does this tie into your mobile phone strategy?

GH: We see ourselves as the driver for this area as high quality and ease of development will be an absolute requirement.

RT: Are you working in the video market currently?

GH: Yes our VoiceEngine MultiMedia offers the ability to deploy H.263, H.264, or On2 Technologies' VP7 technology. Our VoiceEngine utilizes our NetEq packet management capabilities to deliver high-quality voice and video. It also allows developers the freedom of integration.

RT: Describe how your business will change the world.

GH: We believe that it already has, as there are now so many ways that people utilize our technology. There are approximately 400 million downloads of our customers' software using GIPS technology in the market today. In the future, there will be so many ways that we'll communicate and GIPS technology will drive the majority of them.

Perhaps most striking is that Gary thinks that the VoIP market is just starting to get going. If this is true — and he should know — then we can expect perhaps more companies like Skype that will change the way the world communicates.

So hats off to the developers out there that have embraced IP communications and are looking for ways to become the next Skype, the next Linksys, or the next Google. I will certainly keep in touch with the folks at GIPS so I can get a sneak peek of the VoIP leaders of tomorrow. IT

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Hosted IP PBX

When a business needs a new phone system or to upgrade its current one, it has several options. Hosted IP PBX is becoming increasingly popular because it provides the latest in features, support, and flexibility, while cutting costs and freeing IT staff to focus on other tasks. It is an alternative to premise-based PBX or legacy key systems, delivering business-grade calling features and integrating multiple services over a single network connection.

Not only does a hosted service minimize costly hardware expenses, but it also takes most of the labor out of maintaining and upgrading a phone system. Most of them also allow businesses to keep their existing phone systems, completely eliminating up-front capital investment, while providing all the features businesses need to improve communications and enhance productivity.

The following is a selection of hosted IP PBX providers, including product sets to meet the needs of businesses of all sizes — from SOHOs to SMBs to large enterprises. There also is a selection of hosted platform providers, which offer solutions to allow network operators to offer hosted solutions to their users. This listing is intended as a starting point for your search for a hosted provider; please contact the vendors themselves for more information.

8x8/Packet8
http://www.packet8.net

Packet8's (news - alert) Virtual Office VoIP Hosted PBX phone service provides small to medium sized businesses (SMBs) with a cost-effective, feature-rich alternative to traditional business phone systems. Virtual Office can replace the need for private branch exchanges (PBXs) for companies located in the same building or in regional offices spread across the globe. In addition to enterprise-class PBX functionality, Virtual Office service plans offer unlimited local and long distance calling and unlimited extension dialing, regardless of location, for a flat monthly rate.

Each Virtual Office extension includes a powerful suite of features, often reserved for high-end, premises-based PBX systems, that can be easily administered through the Web, by phone, from voicemail prompts, or by calling 8x8. These features include: auto-attendant, ring groups, business-class voicemail, direct dial number, conference bridge, toll-free extension to extension calling worldwide, and much more. Packet8 can handle the entire system configuration as well as provide user and password access to the Packet8 Web-based online portal, enabling complete self-service system and extension controls for the user 24/7.

Accessline Communications
http://www.accessline.com

(news - alert) SmartVoice Plus is a virtual VoIP phone system for small to mid-size companies. It combines the phone lines and the phone system into one easy to use service and includes the business-class features your business needs, such as voicemail with group messaging, call forwarding, hunt groups, and call hold, transfer, and conference. As needed, add additional features, such as automated attendant, conference calling, or virtual fax numbers.

AccessLine installs and maintains two small pieces of equipment (a broadband network connection device and a VoIP gateway) in your office. The gateway connects to your analog phones and the network connection device links to a broadband voice circuit (also included in the SmartVoice Plus service). This broadband connection is exclusively for your phone calls, delivering high quality calls.

SmartVoice Plus provides administrators and end users Web-based tools for managing all aspects of the service so making any type of change is quick and easy. Each station has its own phone number and its own Web-based tool to help customize and manage the enhanced features of that number.

AT&T
http://www.att.com

AT&T (news - alert) VoIP on AT&T's VPN supports your converged communications on a highly reliable, scalable, and secure global, IP-MPLS network. By integrating your communications with AT&T's industry leading IP VPN services you can gain improved cost efficiencies, simplified network management, and create a highly flexible platform to help you seamlessly add new IP services. As your business needs change, you need the flexibility and expertise of AT&T to help you design, deploy, and manage your solution.

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AT&T IP Telephony Service provides your business with a complete telephony solution that gives your employees consistent service no matter where they are. Offering a wide array of solutions, including centralized network-based IP Telephony platforms, AT&T can help you evolve to the next generation of converged, IP-based communications through in-depth infrastructure assessments as well as the design, deployment and ongoing management of your communications environment. AT&T offers a flexible menu of services that lets you select the capabilities that meet your business needs

AT&T also supports small business needs with its CallVantage Service, which combines the power of a standard corded or cordless phone with your broadband service. You'll use your phone the way you do today, with an added set of features designed to increase productivity and efficiency.

Bandwidth.com

http://www.bandwidth.com

(news - alert) BandwidthVoIP Hosted IP PBX gives businesses of all sizes the most productive calling features that were traditionally available to only the largest enterprises. All of this with no cumbersome in-house systems or software to buy, manage, and maintain.

BandwidthVoIP is a carrier-grade platform delivered over a Tier 1 IP backbone, and engineered to provide the highest levels of clarity, reliability and redundancy. It provides one network, one bill, and one point of contact for all local, long distance, and data services.

BandwidthVoIP runs on all Tier 1 IP networks, giving you the flexibility to choose your Internet service provider and protecting your business from being locked into a geographically limited or proprietary network.

Bandwidth.com's VoIP SLA covers the performance and service metrics you care about: availability, mean time to respond, mean time to repair, guaranteed installation interval.

Cablevision
http://www.cablevision.com

(quote - news - alert) Optimum Voice for businesses offers unlimited local, regional, and long distance calling within the United States, Puerto Rico, and Canada, plus premium calling features, for one low, fixed per-line monthly rate designed to save your business money while providing added features to its communications.

The powerful combination of Optimum Online high-speed Internet service and Optimum Voice flat-rate phone service is a complete communications solution that will give your business important competitive advantages. You'll have the online speed you need for maximum productivity, along with ability to monitor your phone usage and get costs under control.

With Optimum Online for business, you get clear, digital calls, free from static, interruptions and background noise. Every call you make and receive is carried on our state-of-the-art, fiber optic Optimum network, which is directly connected to your business. No more hassles associated with an outmoded copper network.

Optimum Voice provides a business wiring solution that enables customers to use Optimum Voice as standard telephone lines and allows you to keep your existing phone numbers to simply the transition.

CallTower
http://www.calltower.com

CallTower's (news - alert) hosted voice and data communications solution provider combines advanced applications and solutions into a convenient, scalable solution for growing businesses. CallTower delivers hosted PBX-based communications solutions built with high-end features and applications on a Cisco-based infrastructure.

CallTower's advanced communications suite combines voice, data, and market-specific applications that deliver the tools for your company and employees to sell, service, and communicate more effectively. With CallTower, you adapt delivery format and device to ensure that you receive, manage and reply to important communications. Users can manage any message from a desk phone, mobile phone, PDA and/or any internet-enabled device.

CallTower transforms a company's voice and data communications into a strategic tool that gives them a competitive advantage in today's market. CallTower provides growing companies with enterprise-class reliability, a single point of support, productivity-enhancing features, all necessary communications hardware and 24/7 service for a fixed monthly fee.

Comverse (formerly Netcentrex)
http://www.comverse.com

Netcentrex (news - alert) Business Solutions enable the delivery of hosted IP communication services to businesses of all sizes over broadband networks. Applications include: Secured IP Trunking to connect PBXs & IP PBXs to an IP network, VoIP VPN for multi-site enterprises, IP Centrex with advanced Class 5 features, integrated voice and video mail, Contact Center and IVR applications. All Netcentrex solutions are built around a set of state-of-the-art, carrier-grade platforms that comply with the latest IMS and TISPAN next-generation networks standard architectures, all managed through our SMP single point of provisioning and management platform.

IPCentrex Plus provides hosted telephony services with an advanced telephony feature set, integrated applications (network announcements, voice mail, IVR, conferencing), integrated session border controller (SBC) and Web-based self-care portals. IPCentrex Plus is a feature-rich solution that enables operators and service providers to deliver a full range of professional communication services.

Advanced Class 5 features deliver high performance telephony functions that are unavailable with traditional telephony, making IP Centrex Plus a suitable PBX replacement for different market segments: small and medium enterprises (SMEs), branch offices and larger enterprise locations.

Contactual
http://www.contactual.com

Contactual (news - alert) a reliable, scalable and easy-to-use on-demand contact center solution that is 100% provisioned over the Internet, so customers can be up and running in just a few hours — and agents can be anywhere. All they need is a phone and a browser; there is no specialized hardware, no telecom requirements, no upfront capital expenditures.

Contactual is a full-featured contact center with enterprise-class call center features and none of the integration headaches of premises-based equipment. Contactual is designed to meet and exceed the SLA performance of your call center operations with cutting-edge contact center technologies that will instantly improve customer service quality and responsiveness.

Over the past five years, Contactual has developed one feature-rich ondemand product, anticipating state-of-the-art technologies, like VoIP. Contactual doesn't try to deliver all of the obscure features of a premises-based solution — instead, it identifies key features that any call center needs, delivering them to meet its own high standards for reliability, scalability and ease of use.

Covad
http://www.covad.com

Covad (news - alert) VoIP offers powerful business-class telephone and data communications services powered by one of the nation's largest broadband networks. Covad delivers feature-rich, integrated local, long distance, and high-speed Internet access communications, plus many advanced features — all over one managed network con-

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nection. It's a flexible, affordable alternative to expensive and bulky PBX or KTS equipment.

Covad converged solutions are designed to reduce complexity and save money at the same time. Covad voice services require no changes to your existing phone numbers or service features. All of your existing business and toll-free phone numbers remain the same, and enjoy business-class voice quality.

With Covad, small, medium-sized, and large businesses can enjoy the benefits of integrating their voice and data communications, while leveraging on-site equipment and phones. In fact, by combining high-speed Internet and telephone services with Covad, businesses can often save on monthly costs and significantly reduce their TCO.

While most of the features of the Covad's voice service can be managed from a phone, the Covad Dashboard gives users and administrators the ability to set up and manage their communications the way they want them. This simple yet powerful tool gives you total control through a standard Web browser or wireless (WAP) device.

Cox Communications
http://www.cox.com

(news - alert) For businesses whose needs are changing and whose budgets require minimal upfront investment, Cox Centrex service is ideal. Cox Centrex is a feature-rich, expandable telephone service that provides a strong communications tool for such groups as customer service departments, call center operations, and technical support or help desks.

Each station has direct-line access and includes a full suite of feature options. And since Cox houses all the switching center equipment, your business is assured of optimum call quality from start to finish without the capital equipment investment.

Cox offers packages for nearly all office telephony needs, including specific requirements of receptionists, executive assistants, or small call centers, call center employees, as well as à la carte features that can be added on to any Cox Centrex package

Whether you choose Centrex as your phone system of choice or simply use it to augment your existing system, your business won't have to invest in expensive switching equipment, since Cox houses all the Centrex equipment for you. Multiple options allow you to connect office phones in a seamless network, or manage the telephone needs of multiple locations easily and efficiently.

DSL.net
http://www.dsl.net

(news - alert) IP Telephony is here with Duet, an affordable VoIP bundle in New York and the Washington, D.C. metro area, including Northern Virginia, suburban Maryland, and the District of Columbia. Lock in a low monthly introductory rate with our fast, secure and reliable broadband phone service, and unlimited local and regional calling, and unlimited domestic outbound long-distance calling.

Duet offers high-speed broadband connection with up to 16 phone lines and allows businesses to keep existing phone systems and numbers utilizing the latest in next-generation VoIP technology and offering guaranteed SLAs.

DSL.net also combines its own broadband facilities and nationwide network infrastructure to provide high-speed Internet access and value-added services directly to SMBs businesses throughout the United States. DSL.net is a certified CLEC throughout the continental United States — including Washington, D.C. and Puerto Rico.

DSLi
http://www.dsli.com

(news - alert) VOX3 PBX is a hosted VoIP application that offers basic and enhanced calling features to SMEs, offering "Big Business" features without the inflated cost of an in-house system.

VOX3 PBX creates an office with no boundaries. Imagine users forwarding voicemails or transferring calls anywhere in the organization and extending the organization anywhere. Then add unified messaging to the communications platform, a single voice message, e-mail or fax to reach all users across multiple locations, including international sites. VOX3 PBX combines these features along with state of the art IP PBX capabilities, including an auto attendant, call center queuing, and open standards for operating with SIP hardware equipment.

DSLi specializes in a complete IP telephony solution, eliminating the hassle of integrating voice and data from different vendors, so you can concentrate on your business. The product combines high speed T1 internet access with the enhanced features of an IP PBX, the reliability of centrex, the productivity of unified messaging, using open standards of session initiated protocol (SIP). Direct and redirect all calls from your own personalized Web portal.

Global Phone Corporation
http://www.gphone.com

GlobalTone (news - alert) is a business-grade hosted VoIP solution that provides organizations with a low-cost, high-reliability alternative to costly PBXs, key systems, or Centrex lines. GlobalTone uses the power of IP telephony running over your existing Internet connection to pull together all your employees into a single, centralized "virtual PBX" with a robust, low-cost enterprise-class voice solution.

GlobalTone is available through a variety of convenient service and calling plans for organizations of various sizes — small businesses, corporations, non-profits, or government agencies.

An entire organization benefits from

GlobalTone Business VoIP. IT personnel gain from the point and click administration, CFOs and CEOs enjoy significant cost savings, and end users have more control over their incoming and outgoing call management. More importantly, remote users can be connected, including branch offices, telecommuters, and mobile employees — all making for a more productive and efficient work environment.

GotVMail
http://www.gotvmail.com

GotVMail Communications (news - alert) offers a virtual telecommunications service for small businesses, home-based businesses, and mobile professionals, with enterprise functionality and sound starting at just $9.95 a month — without having to purchase or maintain expensive telecommunications equipment.

GotVMail's hosted phone service is customizable for 1 or 20 employees, works with any phone — including your office phone, cell phone, home office phone, even VoIP phones and PDAs — from anywhere, yet requires no additional equipment or software.

Customers always sound professional with a nationwide toll-free or global local telephone number and a customized main greeting. Businesses also have complete control over incoming phone calls with multiple employee or department mailboxes, a dial-by-name directory, and the ability to forward or transfer calls to any phone, anywhere.

Carrier-grade reliability is provided via a global communications network that is 99.5% reliable and secure with numerous state-of-the-art carrier grade data center points-of-presence, ensuring connectivity and business continuity. GotVMail supports an unlimited number of incoming calls so callers never hear a busy signal and offer a minimum of industry standard full N+2 redundancy.

ICG Communications
http://www.icgcomm.com

VoicePipe from ICG (news - alert) puts your phone system, local and long distance phone service, and high-speed internet access on one broadband connection, carrying calls and data on ICG's guaranteed converged voice and data network. With VoicePipe, you're free to choose the specific bandwidth you need — from T1 on up — and have freedom to assign different calling features to different phones; VoicePipe's intuitive Web-based call management frees your employees from being at their desk to make calls, check voicemail, or review call logs. Users are free to control their own communication preferences through an easy-to-use, Web-based interface.

VoicePipe can be operated just like a normal phone, or users can take advantage of the Web-based features. VoicePipe brings the point-and-click simplicity of the Internet to telephony, allowing users to control their phones from any standard Web browser anywhere. The intuitive interface offers a variety of options and provides a simple way for to get help and information, without tying up IT staff. You can also get your VoicePipe voicemail delivered to just about any email application.

VoicePipe has nothing in common with the choppy Internet phones of the past. This is a business-class communications solution that's based on our nationally managed all-IP network.

M5 Networks
http://www.m5networks.com

(news - alert) M5 provides a hosted VOIP phone system, allowing business owners, CTOs, and CFOs to turn to M5 to avoid buying or maintaining a phone system and the phone lines connected to it. As a single provider, M5 replaces the usual five telecom vendors and becomes accountable for reliability, highly responsive service, feature deployment, and predictable costs.

Every M5 client receives a robust suite of features comparable to those of any high-end system on the market, and every M5 package is tailored to individual company needs. We complete a thorough review of your feature requirements prior to contract, to make sure users will be satisfied. Our project managers and trainers work with your staff to make sure that your company maximizes the benefits of the system.

M5's network is designed for maximum redundancy and diversity – a vast improvement over the typical arrangement of installing a phone system in your office closet. We monitor all network components to achieve greater than 99.99% uptime. The M5 Outsourced IP Phone System utilizes IP technology to eliminate a company's need to purchase, install, and maintain a premise-based phone system.

MediaRing
http://www.mediaring.com

MediaRing Enterprise (news - alert) is a business communication solution that offers companies with an affordable alternative to reduce cost on exorbitant international communication charges through its revolutionary IP technology and its global network interconnecting over 240 countries worldwide. The solution allows companies to easily integrate their existing telephone infrastructure with MediaRing's global-managed VoIP network without massive investment. This converges the telecommunication network of all offices and branches under one voice network significantly reducing the total international telecommunication charges.

All calls are routed through MediaRing VoizNet global network via a MediaRing Enterprise gateway installed at each overseas office location; companies do not have to incur any capital

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outlay, paying only for operational expenditure of just a flat monthly subscription charge.

With enhanced software and network technology, groups of data packets can be marked and delivered according to the priority based on Class of Service, which means customers are assured of QoS and security for end-to-end service delivery. MediaRing's patent-pending technology delivers superior voice quality over unpredictable Web environment.

Mendax
http://www.mendax.com

Mendax's (news - alert) Hosted PBX service is a perfect solution for companies of all sizes; it offers the same features as legacy PBXs do, and many more advanced capabilities. With a hosted PBX service, all office locations and all employees are connected to the same centralized location, rendering maintenance and management of the system as simple as it can be.

Mendax's Hosted PBX solution is flexible and scalable — you can start with as little as two or three extensions and grow your internal network as your business grows.

Hosted PBX service ensures you can avoid huge up front investments in systems and technology and allows you to manage all accounts from a centralized monitoring tool and know the voice communications cost for each employee. You can manage and change settings and features for each user on line, in real time.

Mendax offers a variety of features, incuding: three-digit dialing; advanced PBX features, like auto attendant (IVR); multiple offices on the same system; ability to keep existing phones; same dialing experience from any location with a broadband internet connection; Find Me/Follow Me; automatic voice mail to e-mail forwarding; softphone to enable anytime, anywhere communication; and much more.

PingTone
http://www.pingtone.com

PingTone (news - alert) Service represents a whole new way for companies to use VoIP technology to help employees get more done each and every work day. From unified messaging to auto attendants, point & click dialing to 4-digit dialing, all branch offices and remotely located employees are networked together into one company-wide voice system

Service "Profiles" are the building blocks of the PingTone Service. They are specifically designed to meet each businesses varying needs by matching those needs to select features, functions, and usage patterns. Whether your company uses voice in a similar way across all employees or has as many different needs as there are users, PingTone can help you choose a combination of VoIP Service Profiles that will fit the business case.

The PingTone carrier class IP network is comprised of technologies from Cisco, Sun Microsystems, Tekelec and other leading manufacturers. These service components reside within PingTone Technology Access Points (TAPs) and it is from these TAPs that PingTone business VoIP service is delivered. Customers activate service by connecting to the TAP network via single or multiple high speed data connections. Connections can be private, public, and vary in type depending on customer needs, locations and other business factors.

RingCentral
http://www.ringcentral.com

RingCentral (news - alert) Online is a comprehensive, yet affordable integrated telephony and fax communication service available for small businesses and mobile workers. No new hardware or software is required and the service works seamlessly with existing phones.

You choose a virtual toll free or local number; then through an intuitive interface, you'll configure and manage your own Virtual PBX, including your extensions, a dial-by-name directory, call forwarding, call screening and voicemail. All plans also include Internet fax, free fax editing software, Microsoft Office integration, a real-time call management tool and more. RingCentral helps you project a professional image, increase productivity, and stay closer to your customers.

Do you have a cell phone? Home phone? Work phone? Does each phone have voicemail? In addition, do you also have a fax machine? It would seem, then, that you have a lot of work to do just to keep up with all of your messages, faxes, and phone calls. RingCentral fulfils the idea of unified messaging by consolidate all of your communications needs into a single phone number to allow complete control of all your calls, as well as your voice and fax messages. Your clients, family, and friends only have to know one number to reach you.

Speakeasy
http://www.speakeasy.net

Speakeasy (news - alert) Business VoIP is a Hosted PBX solution, combining broadband connectivity, local and long distance phone service, PBX functionality, and conferencing to deliver a complete communications package that saves time and money while helping businesses compete like never before.

Built for dynamic businesses, Speakeasy Business VoIP offers an integrated voice and data solution that lowers operating costs, increases business efficiency, and guarantees world-class reliability while delivering crystal clear call quality.

With Speakeasy, there is no PBX to buy, lease, or maintain — you have one vendor for all your telecommunications services. Remote employees stay connected with free calling and 4-digit dialing between office locations, and conference calls can be scheduled on demand. Find Me/Follow Me ensures important calls will not be missed; voice mails can be managed as email; and the service integrates with Microsoft Outlook.

Speakeasy's Hosted PBX solution delivers portability, scalability, and continuity, enabling VoIP calls from anywhere with the Remote Office feature or a laptop softphone.

Time Warner Telecom
http://www.twtelecom.com

TW Telecom (quote - news - alert) ONE SOLUTION is a VoIP suite of services brings the power of next-generation, converged communication technologies to your business, offered in a way that allows organizations to utilize this new technology on their terms. Rather than requiring a costly, enterprise-wide adoption of a new technology, ONE SOLUTION can be implemented in stages, allowing users to better adopt next-generation communications.

TW Telecom ONE SOLUTION CONNECT is a logical voice trunk connection that delivers voice traffic across Time Warner Telecom's VoIP Network. You'll realize an immediate benefit from managing one affordable access network versus multiple inefficient voice and data networks. Time Warner Telecom ensures carrier-class quality communications through end-to-end prioritization of voice traffic. Your calls won't be subject to sound quality problems, such as latency and packet loss. Your calls are more clear because the network reserves its high-priority voice queues and MPLS paths exclusively for voice-only traffic.

ONE SOLUTION CONNECT lowers your cost of doing business by connecting your PBX to our world-class VoIP network via a converged IP connection. This multi-service connection supports voice and data applications while eliminating access expenses, reducing the management associated with disparate network connections and improving bandwidth utilization.

Verizon
http://www.verizonbusiness.com

Verizon (quote - news - alert) Business offers a portfolio of products using VoIP technology to help customers manage their networks more efficiently, reduce costs, and leverage new, leading-edge business applications, all backed by competitive SLAs. Verizon's products can help optimize resources by consolidating voice and data onto one network. Verizon Business VoIP products are scalable and interchangeable, allowing you to migrate to a total VoIP environment at your own pace. The IP network carrying Verizon Business VoIP products is a global intelligent network, which includes equipment, capacity, power redundancy, technology upgrades, and security.

Verizon Hosted IP Centrex is designed for companies that want all the features of a PBX or Key system without the associated capital, lease, or maintenance costs. All the PBX functionality resides on the Verizon network making it ideal if you are moving to or establishing a new location, or simply looking to replace an outdated PBX, Key, or TDM Centrex system.

It includes design, installation, and ongoing maintenance and eliminates the need for infrastructure investments or monthly maintenance costs, while delivering a top-quality, highly reliable, telephony system that is easy to manage and use. It provides telecom managers with a desktop interface (Web browser) to manage everyday functions, such as moves, adds, changes and deletes (MACDs) as well as network appliances.

Vonage
http://www.vonage.com

Vonage (quote - news - alert) is an all-inclusive phone service, offering businesses local and long distance calling anywhere in the US, Canada, and Puerto Rico for one low price — calls to select European countries are also free with Vonage's Unlimited plans. Vonage makes this possible because it uses your existing high-speed Internet connection instead of standard phone lines. Businesses will save money and get great features like Caller ID with Name, Call Waiting and Voicemail Plus included at no additional cost.

With Vonage, you connect your telephone to your high-speed Internet connection using the Vonage phone adapter, pick up the phone, and use it just like you do today. You can be up and running within minutes of receiving your Vonage phone adapter. Vonage's phone adapter is small and fully portable, and can be used anywhere there's a broadband Internet connection.

Vonage converts your phone calls into data that zips through your high-speed Internet connection just like email. It comes out the other end just like a regular phone call. Your callers will never know that it's any different, since it sounds just like a regular phone call.

Vonage's Small Business Unlimited Plan gives your company everything you need to maximize your savings and productivity for $49.99 a month, which includes a dedicated fax line at no additional cost. You can also keep your businesses existing phone number(s) and Vonage has area codes available across the US and in other countries. Vonage also provides real-time billing information via an online Web portal and offers quick access to local emergency services with its 911 Dialing feature.

VirtualPBX
http://www.virtualpbx.com

VirtualPBX (news - alert) offers a complete hosted PBX service. Whether you need an inexpensive small business PBX or a corporate phone system that can handle thousands of employees, Virtual PBX has a solution that fits. We deliver PBX call routing and other functions as a hosted service, rather than a complex piece of hardware that you have to buy, install, and maintain. Our affordable solutions can integrate all your employees under one or more

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main business numbers, regardless of where they take calls — at headquarters, branch offices, home offices, or on the road.

VirtualPBX offers three versions of its Virtual PBX Service, accommodating a wide range of needs, from a SOHO to corporate systems — it also offers disaster recovery/business continuation phone service for companies that already have a PBX.

Companies small and large can have all of the advanced call handling capabilities of the largest enterprises in the world. VirtualPBX keep its customers up to date with the best features, like TrueACD queuing and skills-based call routing. Importantly, offering PBX functionality as a service means businesses don't have to install, maintain, or upgrade any hardware or software, which saves money, increases productivity, and improves business image. The Corporate Service also expands effortlessly to any number of extensions, and extra lines are always available to answer your calls, so your number never rings busy

HOSTING PLATFORM PROVIDERS

Broadsoft
http://www.broadsoft.com

BroadWorks (news - alert) provides revenue-generating voice features for fixed-line and wireless service providers, offering a wide array of applications from a single platform with carrier-grade interoperability, back office capabilities, redundancy, and scalability. BroadWorks delivers features with unmatched flexibility as applications operate independently of the underlying architecture and transport network, directing calls and applying enhanced call treatments within and outside of a provider's packet telephony network.

The BroadWorks application is deployable in both pre-IMS and IMS architectures. As a result, BroadWorks enables operators to launch enhanced wireless services and accelerate revenue generation, regardless of their existing system architecture.

BroadWorks treats end devices equally — providing the same set of services to both fixed and mobile devices. Providers can offer "One Number" service where service preferences and call treatments are applied across multiple devices, such as a user's mobile handset and fixed-line (work and/or home) phones.

BroadWorks' Mobile PBX application offers enhanced calling features to enterprise users with 2G and 2.5G mobile devices. Mobile PBX brings the powerful features of BroadWorks Hosted PBX to enterprises with an all-mobile or partially mobile workforce. These features are available with no changes to the mobile operator's mobile switch, devices, or radio network.

Sylantro
http://www.sylantro.com

Sylantro (news - alert) enables network operators to offer hosted and mobile PBX applications — a highly attractive alternative to legacy and costly premises-based solutions that quickly become obsolete as new solutions become available.

The Base Business package offers a cost-effective set of capabilities ideally priced for basic requirements. The Business Feature Pack offers the most fully featured solution for business available today, enabling a network operator to deliver a rich set of business telephony services, including the advanced PBX features demanded by enterprises. Web portal interfaces also enable users and administrators to configure and manage cutting-edge communication services. Network operators can develop service bundles that offer a flexible range of basic to premium services, and are easy to package and deploy. These services allow carriers to easily and aggressively address the PBX replacement markets.

At the heart of the Sylantro's solution is an intuitive series of browser-based, fully customizable user interfaces via Web portals. These Web portals streamline the management of communications services at every access level: the end-user, administrator, value-added reseller, and network operator level.

Sylantro also offers a selection of products designed to enable mobility, collaboration, and conferencing for the customer.

Tekelec
http://www.tekelec.com

Tekelec's (news - alert) hosted VoIP and IP telephony solutions boost customer satisfaction and help service providers to penetrate lucrative new markets by offering bundled voice, data and Internet services at an attractive price with a range of easily customized solutions that allow service providers to reliably and cost-effectively deliver VoIP and multimedia services to their customers.

Tekelec brings the power of next-generation telephony to customers who will no longer have to invest in PBX/KSU equipment or its maintenance. The Tekelec 6000 VoIP Application Server's IP Centrex feature set works with analog phones and includes even more features when deployed with IP telephones, and the enhanced applications suite integrates easily. The Tekelec 6000 can be used to provide a VoIP VPN for a shared feature set across multiple business locations and home-based employees.

The partitioning and administration capabilities of the Tekelec 6000 enable the solution to be quickly rolled out with customized service environments to each enterprise customer. IT

First WiMAX in Ireland

In 2002, the Irish government announced an objective to achieve widespread broadband penetration in Ireland. Irish Telecom was a new telecoms operator, having been granted a license to offer telecoms services in July of the same year. As such, it was determined to deploy an aggressive network rollout and customer acquisition strategy.

Choosing a Network

Irish Broadband's research clearly demonstrated that building a broadband wireless access (BWA) network would be the fastest, least expensive, and most flexible way to cover the underserved areas of Ireland and meet the rising demand for reliable broadband services in the country.

With limited initial capital required and low network operating costs — proportional to customer base and capacity — Irish Broadband was attracted to BWA, since it would enable it to provide full broadband services, without needing an expensive fiber or satellite network or having to rely on the copper infrastructure of its competitor, the incumbent operator. Also, BWA would allow reaching areas not yet serviced by existing infrastructures and, once the network was established, to connect new customers within hours.

BWA networks are easy to upgrade, grow and expand. As BWA base stations all share the same frequency spectrum, if a base station needs more capacity, additional bandwidth is simply allocated on the backhaul link.

Choosing a BWA Vendor

Convinced of the value of deploying a BWA network, Irish Broadband then had to look for a credible and reliable equipment vendor. As a market leader with installations in over 150 countries, Alvarion's pedigree impressed Irish Broadband, as did the performance of its equipment in multiple trials and the staff expertise, making the decision to use Alvarion's BreezeACCESS base stations and CPEs easy.

Irish Broadband's Network

In May 2003, less than one year after getting its license, Irish Broadband began offering service using the license-free 2.4GHz frequency band in Dublin with Alvarion base stations in seven locations around the city. Irish Broadband's network was a success from the start, with customers queuing up to get broadband connectivity at prices starting from €35 a month for home users and €45 per month for businesses.

Network Expansion within Months

Building on the successes of its initial deployments, in October 2003, Irish Broadband expanded its network again to utilize the recently released 5.8 GHz unlicensed spectrum to increase the number of subscribers and revenue. Again, Irish Broadband chose Alvarion for its network needs, selecting its BreezeACCESS VL system, developed specifically for the 5GHz spectrum. Chosen over solutions from Motorola, WLAN, and Airspan, the combination of BreezeACCESS VL's outstanding features, outdoor performance, robustness, and competitive price was the determining factor.

With a greater range, the 5.8GHz base stations can also be used to backhaul 2.4GHz base stations, enabling Irish Broadband to reach more customers. In addition, BreezeACCESS VL's OFDM capability means that Irish Broadband can now reach customers in both urban and foliage-dense operating environments who are without direct line-of-sight to a base station.

Further Expansion using BreezeMAX

In May 2004, Irish Broadband again expanded its network to the city of Cork with the BreezeACCESS VL and used its new 3.5 GHz license for WiMAX (define - news - alert) services to build WiMAX networks using Alvarion's BreezeMAX 3500 system in the cities of Dundalk, Drogheda, Galway, Limerick, and Waterford. During 2005 and 2006, Irish Broadband continued to expand its networks in both the licensed and unlicensed frequency bands and added the unlicensed band 5.4GHz. An average of 250 BreezeACCESS VL customer premises equipments (CPEs) were installed weekly during 2005. In addition, Irish Broadband expanded its WiMAX network to eleven other cities.

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Alvarion's pedigree impressed Irish Broadband, as did the performance of its equipment in multiple trials and the staff expertise.

Surpassing Expectations

In January 2006, Irish Broadband surpassed 20,000 subscribers, beating its own expectations. In 2005, broadband subscriptions in Ireland increased by 19% overall, with fixed wireless broadband services growing faster, with a 37% quarterly growth. Given all its success with broadband wireless and WiMAX, Irish Broadband is now turning to new horizons. After a successful bid for a portion of an €18 million Broadband for Schools project, it is planning to expand its broadband wireless network services into schools. In addition, the company is considering the possibility of building wireless networks outside Ireland. IT

The Challenge

- To take advantage of the Irish government's desire to achieve widespread broadband penetration.
- To develop a reliable broadband network for residential and business customers.
- To build a network that eliminates the use of the existing 'last mile' network of the incumbent operator.
- To get service up and running as quickly as possible to connect customers and generate revenues immediately.

The Solution

- A broadband wireless access (BWA) network built using equipment from two Alvarion product suites: BreezeACCESS and BreezeMAX, its WiMAX platform.

The Result

- Provides fixed wireless data services with speeds ranging from 512Kbps up to 6Mbps to home users, SMEs, and large corporates.
- Wireless broadband has enabled Irish Broadband to pursue an aggressive network rollout and customer acquisition.
- Strategy focused on providing superior customer service across its full range of broadband products.
- The first operational WiMAX network in Ireland.

TMC Labs Internet Telephony Innovation Awards 2006: Part I

This is our seventh installment of the TMC Labs Innovation Awards, which are designed to recognize the truly unique and innovative products and services within the VoIP industry. Our task in picking the most innovative products and services is always challenging, however this year we were pleasantly surprised to see new and truly unique products from players such as Alcatel leveraging IP networks to solve radio interoperability issues between police, fire, and other emergency personnel. Choosing this product as "innovative" was a no-brainer. As more telephony applications are bundled with other IP services, including IPTV, video-on-demand, etc., the need for more bandwidth as well as managing that bandwidth for QoS becomes more critical. Thus, this year's awards feature more high-bandwidth focused products, such as Allot Communications' traffic management device, called the NetEnforcer AC-2500, which supports a whopping 5 Gbps. Similarly, Occam Networks' BLC 6314 Transport and Optical Line Termination (OLT) Blade supports 10 GigE (10 Gigabit Ethernet) of bandwidth.

TMC Labs has selected 25 companies that will be honored with a TMC Labs Innovation Award. The results will be published in two parts, in order to accommodate our in-depth write-ups for the winners. The complete winners list will be published in both issues; however, we will write the detailed write-ups in alphabetical order beginning with Alcatel this month and ending with Lucent. (How's that for irony?) Next month, we start with Meru and end with XConnect.

2006 TMC Labs Innovation Award Winners (Full List)

COMPANY	PRODUCT NAME
Alcatel	**Alcatel My Teamwork Land Mobile Radio Conferencing and Collaboration solution (LMRCC)**
Allot Communications	**AC-2500**
Atreus Systems	**Atreus IP Service Provisioning Software**
Avaya Inc.	**Avaya one-X Quick Edition**
EdenTree Technologies, Inc.	**EdenTree Lab Manager**
Eicon Networks	**Diva Server SIPcontrol**
Envox Worldwide	**Envox CT Connect**
Esna Technologies, Inc.	**Telephony Office-LinX**
Global IP Sound	**GIPS Border Interface Engine (BIE)**
Grandstream Networks, Inc.	**GXV3000 SIP Video Phone**
Interwise, Inc.	**Interwise Connect version 7**
Lucent Technologies	**Lucent's Hosted IP PBX Service from the VoIP for Enterprise portfolio**
Meru Networks	*Meru Wireless Backbone System*
NICE Systems Ltd.	*NICE Contact Center Interactions Solution, VoIP Enhancement*
Occam Networks	*BLC 6314 10GigE Transport and Optical Line Termination (OLT) Blade*
Paragon Wireless Inc.	*PWTW-1100*
RADCOM	*R70 Probe*
RingCentral	*RingCentral Online 3.0*
Sangoma Technologies	*A200 FXO/FXS Analog Telephone Support System*
ShoreTel, Inc.	*ShoreTel 6.1*
Sipera Systems	*Sipera IPCS 310*
SPIRIT DSP	*TeamSpirit Mobile*
UCN, Inc.	*inContact*
Verizon Business	*IP Web Center*
XConnect Global Networks, Ltd.	*XConnect Alliance*

**companies appearing in italics will appear in our August 2006 issue with a full description.*

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Alcatel

Alcatel My Teamwork Land Mobile Radio Conferencing and Collaboration solution (LMRCC)

http://www.alcatel.com

(news - alert) On September 11th, 2001, one of major problems during rescue operations was that the police department radios couldn't communicate with the fire department radios. Although this problem has existed for decades, certainly 9/11 brought this issue under closer public scrutiny. As with any problem involving technology, it is the technology companies that will solve these issues. The Alcatel My Teamwork Land Mobile Radio Conferencing and Collaboration solution (LMRCC) claims to have solved these issues by utilizing third-party radio-SIP adaptors to integrate disparate radios (e.g., Police, FEMA, Fire, EMT) with mobile and standard telephones into one seamless audio and data conferencing experience.

The software can run on a PC using a standard Web browser and they also have a "thick client" that runs on smartphones. The application interface looks much like MSN Messenger and has the ability to organize contacts into groups. Also similar to MSN Messenger is its full presence support to display whether you are on the phone, offline, away, etc. The primary target market for the solution is national, state, and local governments. Secondary markets include healthcare and educational campus scenarios; small, medium, and large businesses; and service providers.

Often it is critical for workers to be joined together within a data collaboration session to view and annotate maps, blueprints, weather radar screens, policy statements, and press releases for the public. Workers equipped with PDAs, smart phones, and/or telephones can talk with each other using the Alcatel solution, while also collaborating on important visual and written material.

The Alcatel My Teamwork Land Mobile Radio Conferencing and Collaboration solution uses one or more radio-SIP adapters produced by other companies, coupled to an IP network, such as a LAN or a secured WAN, with the Alcatel My Teamwork unified conferencing and collaboration application software. The My Teamwork LMRCC solution executes software routines on a standard industrial PC so that no special hardware involving DSP chips and boards, high-speed audio busses, etc., is required, maximizing time to market and minimizing total cost of ownership. Importantly, since the solution uses IP networks, it can connect geographically separated emergency workers, agencies, government workers, etc. Finally, the My Teamwork LMRCC solution offers a set of services-oriented application programming interfaces (APIs) that allow it to be integrated with other systems, including the ability to automatically initiate a conference if a certain alarm event is triggered.

Allot Communications

AC-2500

http://www.allot.com

(news - alert) Carriers and service providers are always striving to increase bandwidth to deal with the explosive demand by businesses and consumers. Indeed, with increased competition among carriers and service providers and the growing use of bandwidth-hogging applications, such as P2P, VoIP, and streaming video, having visibility into the network to monitor and control traffic and user behavior is becoming even more critical to maintain existing customer loyalty and attract new customers. That's where network management devices, such as the NetEnforcer AC-2500, come into play in order to maintain quality of service (QoS), provide service control, and ensure ROI.

The NetEnforcer AC-2500 is optimal for deployment in high-capacity and fully redundant topologies, commonly found with large DSL, cable, and wireless network operators. In addition to its ability to support throughput rates of up to 5 Gigabits/second, the high-capacity traffic management device supports up to four Gigabit Ethernet lines, giving network administrators the flexibility to integrate with many different network topologies. The AC-2500 models can be used with DMZ (demilitarized) zones or other multiple network segments and are highly suitable for fully meshed network environments.

Leveraging an enhanced network processor array architecture, Allot's AC-2500 provides full Layer 2–7 control, the AC-2500 series supports redundancy configurations, and it is the first network management device on the market to support up to 5 Gigabits, placing it among the industry's most powerful network traffic management solutions available.

Carriers and service providers can manage up to 150,000 subscribers with the AC-2500 series. Network administrators can identify hundreds of applications and protocols to shape/prioritize traffic and optimize traffic flows to maintain and maximize the performance of critical applications. The devices also help mitigate security threats by detecting traffic anomalies and isolating potentially malicious traffic without interrupting regular traffic.

The AC-2520 and AC-2540 traffic management devices also come with Allot's NetXplorer centralized network management software for reporting and network element configuration. With NetXplorer, network administrators can view traffic trends and drill down to individual devices, users, or applications for real-time troubleshooting. Data can be analyzed in real time or over periods of time for reporting, capacity planning, or usage tracking. NetXplorer also triggers alarms that can be programmed to identify potential security risks.

Atreus Systems

Atreus IP Service Provisioning Software

http://www.atreus-systems.com

(news - alert) As service providers move to offer Triple or even Quadruple Play offerings, the complexity of managing and provisioning those various services becomes more complex, time consuming, and costly. In fact, service providers are expanding beyond traditional Triple Play offerings to offer hosted backup, hosted Exchange, hosted antivirus, hosted conferencing, and other applications. With so many diverse services to manage and provision, service providers are looking for a single platform to provide a unified provisioning and management system.

In fact, carriers and service providers have a strong desire to significantly reduce the time and cost entailed in the

development, deployment, and management of advanced services, like Voice over IP and rich IMS-based offerings for businesses and consumers. Atreus IP Service Provisioning Software enables service providers to speed time-to-profit through the automated creation, delivery, and management of just about any service, including VoIP and value-added IP services, such as video.

Atreus' IP Service Provisioning Solution delivers pre-integrated, automated provisioning and configuration for a variety of devices, enabling the rapid deployment and extensive adoption of VoIP and advanced IP services. With Atreus' vendor-agnostic solution, service providers and their customers have access to a unified user interface to activate VoIP and complementary IP services.

Besides the automated provisioning engine, the product features self-service portals, allowing the end user to have control over service ordering, feature changes and updates. The benefit to service providers is quite apparent — service providers can quickly deploy feature-rich VoIP bundles, while dramatically reducing the time, cost and complexity of adding new offerings, modifying features, and scaling customer growth.

Atreus claims that, in 2002, they were the first to help a handful of innovative carriers launch VoIP with "self-service portal functionality." As such, Atreus focused on streamlining the provisioning of core components which make up VoIP services — specifically the Feature Servers, Media Servers, and CPE devices. Atreus claims that their solution's total cost of ownership (TCO) is one third of that of a homegrown solution.

Atreus has continued to make their solution more comprehensive by widening its provisioning support in the VoIP ecosystem — from Feature servers (BroadSoft, Sylantro, Sonus, Siemens, NetCentrex, Tekelec, et al) and Messaging servers (IP Unity, UTStarcom…) to CPE (Cisco and Polycom phones) and Analog Telephone Adaptors/Session Border Controllers (Acme Packet and Edgewater and the like).

Atreus also integrates with external systems, including local number portability (LNP), Inventory, E911, and directory listings, etc. Atreus' service provider customers enjoy a fully featured turnkey solution that empowers them to quickly launch innovative IP services to residential, business, and wholesale customers today, while supporting any future expansion into other advanced IP services such as video, video-on-demand, hosted backup, and more.

Avaya Inc.

Avaya one-X Quick Edition

http://www.avaya.com

(news - alert) One of the most underserved markets for the VoIP industry has been the SMB market with four to 20 users. Many small-to-medium businesses don't have the IT staff necessary to install an IP PBX themselves or the budget to hire a VAR or reseller to replace their existing phone system.

Fortunately, Avaya's one-X Quick Edition delivers cost-effective intelligent communications to very small businesses and small branches of enterprises. With SIP-based P2P (peer-to-peer) technology, telephone system set up and installation is virtually "plug and play." Based on P2P technology Avaya purchased through their acquisition of Nimcat Networks, you can simply plug the telephones into the local-area network and the system configures itself. The phones automatically "discover" each other and provide back-up for one another. In just minutes, all users have access to the most commonly used set of features including voicemail, conferencing, auto-attendant, and call management.

A complete working phone system in just minutes is innovative itself, but this product has a few other tricks up its sleeve. For instance, this solution is the first enterprise phone system to use SIP-based peer-to-peer technology. By eliminating the need for centralized servers, Avaya one-X Quick Edition enables very small businesses to enjoy significant savings on acquisition and installation. Individual telephones participating in the system perform functions previously performed by a central server. By redistributing the workload out to the telephone, costs are reduced and system reliability is increased with the elimination of a single point of failure.

No centralized equipment to purchase, set up, or manage reduces the total cost of ownership — lower acquisition, installation, and ongoing costs. A standard secure Web browser enables users or system administrators to manage the phones either locally or remotely. The user interface makes it simple to navigate options and features. As your company grows, additional phones can be simply added to the network without the need for a professional installer or a truckroll.

Most impressive is the fact that the phones only cost from $500 to nearly $600. Many standalone IP phones that still require a centralized IP PBX can cost $300 or more. TMC Labs reviewed Nimcat Networks P2P technology before the Avaya acquisition, so we can vouch for its innovative feature set and dummy-proof plug and play installation.

EdenTree Technologies, Inc.

EdenTree Lab Manager

http://www.edentreetech.com

(news - alert) Telecom labs, R&D labs, and service provider labs are filled with switches, patch panels, and miles of network cables that are constantly being moved by co-workers, making testing equipment a management headache and a frustrating experience when a co-worker unplugs something currently under test. TMC Labs certainly knows a little bit about that. Well, EdenTree Lab Manager has designed a "lab operating system" for managing, scheduling, and tracking connectivity of devices in labs and networks. EdenTree Lab Manager is a client/server software application that controls third-party physical layer switches to which network devices are connected, creating a software-controlled switching infrastructure that replaces manual patch panels.

EdenTree has partnered with over a dozen leading switch vendors, to ensure that the switching infrastructure may be custom configured to accommodate any number or combination of interface types, including POTS/analog, T1/E1, DS3, any rate Ethernet, any Optical, Fiber Channel, RF/Coax, and others. Lab Manager automates the topology reconfigurations, while providing an easy-to-use drag-and-drop graphical user interface for designing, storing and sharing configurations, reserving topologies in

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either a deterministic or an event-based (queued) schedule, searching for devices, tapping connections for monitoring/analysis, and tracking asset availability and usage.

Without the EdenTree solution, switches could theoretically be used as lab infrastructure, but they would have to be managed by tedious single switch CLIs (command line interfaces) available from the switch manufacturers, or by scripts that must be written and maintained by the user. According to EdenTree, "With EdenTree Lab Manager, users have a GUI that focuses on the lab devices the user needs, and our system transparently and intelligently connects those devices through interconnected switches that make up the lab infrastructure. No other solution exists to intelligently manage multiple physical layer switches acting as one virtual switch, let alone switches from multiple manufacturers."

One truly innovative feature is that this solution allows users to submit a topology and associated executables to a queue. When the resources included in the topology become available, the topology and scripts will be executed automatically. This feature allows increased utilization of devices. Additional features include: APIs for integrated control of the system from test scripts, triggers that allow any script or executable to be launched in conjunction with scheduled configurations, and right-click access to directly control end devices. User permission controls allow fine-tuning of user and group access to devices, and priorities for usage. EdenTree's solution is an available on the customer's platform of choice or an appliance, and they claim typical ROI of zero to nine months.

Eicon Networks

Diva Server SIPcontrol

http://www.eicon.com

(news - alert) Diva Server SIPcontrol is a software adaptation layer that allows Diva Server telephony boards to be used with the Vocalocity VoiceXML Voice Browser. Diva Server SIPcontrol provides a SIP-based approach for interfacing with the Vocalocity platform. It behaves as a SIP User Agent and converts the call control information of the Diva Server telephony board into SIP messages. Voice channels are converted into IP packets and streamed via the RTP protocol into the Vocalocity platform or to another SIP endpoint. Configured in this fashion, Diva Server telephony boards, in combination with Diva Server SIPcontrol, act as an IP/PSTN Gateway and provide an open and standards-based approach that is compliant with the Media Resource Control Protocol (MRCP) and SIP architecture. It's interesting in that it can take inbound PSTN-trunk side calls and convert into SIP packets to relay to SIP applications. This is kind of the reverse of most SIP/TDM conversions — most boards convert outbound TDM/PSTN calls to IP/SIP for transmitting to another SIP gateway or device, such as a branch office.

The Diva Server SIPcontrol is the first SIP "wrapper" for telephony boards, essentially making it the first TDM product to use SIP messages to make and receive calls. Think of it as a SIP software driver for TDM boards. In addition to supporting SIP, the entire Diva Server product line has been developed with a fully modular design, which allows you to mix and match old, new and future technologies, while maintaining the system, the application, as code-compatible.

Most TDM boards require that application developers use proprietary APIs, which adds a new learning curve and doesn't leverage existing standards. This is not the case with Diva Server SIPcontrol. With the SIP "wrapper," developers can simply focus on creating their applications and not worry about the underlying architecture.

It is certainly faster development to include TDM in a SIP-based solution. Also, once the application runs with SIPcontrol, any feature of Diva Server is available to the application without any cost of re-design and implementation. Since it is SIP-based, it can more easily integrate with other SIP-based applications. For TDM connectivity it can use all the Diva Server Adapters (analog, BRI, PRI, etc.) It also features full support of any ISDN protocols, PBX integration with all major PBXs, can run on the same PC as the SIP application (e.g., Microsoft Speech Server), and scales from two to 480 channels.

Envox Worldwide

Envox CT Connect

http://www.envox.com

(news - alert) In this rapidly changing global economy where competition can come from all corners of the globe, rapid application development (RAD) is a key driver to your business's success and to stay one step ahead of the competition. Envox CT Connect is a graphical call processing software that provides an open, standards-based method for communicating with over 30 leading traditional and IP PBX models, including those from Alcatel, Avaya, Ericsson, Nortel, Rockwell, and Siemens. According to Envox, it enables CTI capabilities such as intelligent routing and screen pops to over 1,000,000 agents worldwide. Envox CT Connect is also used by leading CRM and contact center product providers including Oracle/Siebel, Witness Systems, Cincom, and Virtual Hold. These companies rely on Envox CT Connect to eliminate complex PBX integration issues, shorten the product development cycles and ensure compatibility with a wide range of customer telephony environments.

TMC Labs has tested Envox's products for several years and we found that the Envox CT Connect APIs are extremely easy to work with, which eliminates the need for low level programming. Envox CT Connect was one of the first products to provide an open, standards-based method for integrating with a wide range of traditional and IP PBX models. In fact, Envox offers Envox CT Connect Gateway for Cisco CallManager, a standards-based gateway that allows applications developed with Envox CT Connect to communicate with Cisco CallManager.

This product is one of less than a handful that provides an open, standards-based way to communicate with over 30 different traditional and IP PBXs models with full support for SIP and VoiceXML. This ensures greater interoperability between all call center products. By creating a more open, future-proof call center, enterprises are more able to invest in new enabling technologies such as speech, VoIP and VoiceXML.

Importantly, the software provides

instant access to important PBX data (ANI, DNIS, call position, device availability, etc.) to reduce the time, cost and complexity of designing intelligent routing solutions and agent screen pop solutions.

Esna Technologies, Inc.

Telephony Office-LinX

http://www.esna.com

(news - alert) Telephony Office-LinX enterprise edition is an all-in-one unified communications platform features unified messaging, wireless connectivity, CTI call control, one number Find Me/Follow me functionality, Web access, instant messaging, speech recognition, and text-to-speech for e-mail reading.

Esnatech's Telephony Office-LinX Unified Communications Platform provides enterprises with enhanced access and control over communications featuring a suite of applications including multilingual speech-enabled auto attendant, unified messaging, text-to-speech, and secure wireless messaging support. The most recent release added new features that include an integrated fax server, speech recognition, Windows 2003 support and more. Having a single vendor with all the functionality rolled into one modular platform has obvious benefits, including better integration, as well as being more cost-effective than purchasing disparate systems and tying them all together.

One innovative feature is Live Reply, which is integrated with the Outlook program to allow the recipient to merely press the "Call Back" button on the Outlook toolbar to initiate a call. Similarly, Live Reply is integrated with Esna's Web Client program to allow quick return phone calls. Esna also offers UC Mobile, an application for PDAs that enables live call control, instant messaging, and messaging access.

With the latest release, Esna has improved integration with CRM programs through ActiveX components. One really innovative feature is that the 7.0 UC Client Manager allows users of the system to associate any Bluetooth device with their location giving you presence management. Users will now be able to walk away from the computer, and when the UC Client Manager detects that they are out of range, it automatically changes the user's location to the pre-determined settings.

One final innovative feature of note is that the unified messaging feature will allow playback of messages to be gender specific. This means that the TTS engine will use a male or female engine depending on the gender of the sender.

Global IP Sound

GIPS Border Interface Engine (BIE)

http://www.globalipsound.com

(news - alert) Global IP Sound is best known for their voice engine installed in such popular VoIP softphones as Skype, Google Talk, and more. Now, Global IP Sound has a new product called Border Interface Engine (BIE), which is designed to allow VoIP solutions to provide consistent connectivity between networks, and enables high-quality conversation in both directions by maintaining call integrity over the IP network. GIPS BIE utilizes GIPS patented codecs, as well as NetEQ's jitter buffer and error concealment module, while the call goes through the IP network. The combination of BIE and NetEQ allows better management of jitter and delay on signals before they are transcoded and sent over the public Internet or PSTN.

Interestingly, the solution enhances the voice quality and hence the user experience on the receiving side, even when a call is terminated in a border gateway or PSTN and isn't a 100 percent IP-to-IP connection. According to GIPS, "BIE is the first transcoding/dejittering solution of its kind, at least to our knowledge. It will greatly improve the quality of calls between networks, a problem that has continued to plague VoIP communications."

BIE works best when endpoints, like Skype and Google Talk, which employ GIPS technology connect to endpoints that are not using GIPS technology or are on another network, such as the PSTN. The GIPS-enabled end user gets the benefits of using high-quality GIPS codecs, while both sides enjoy reduced jitter and latency.

When NetEQ and GIPS codecs work together within BIE, GIPS claims that better than PSTN quality can be maintained at up to 30 percent packet loss. It's important to note that previously this high quality could only be enjoyed by users who "both" used GIPS endpoints, or if the receiving side had GIPS technology. Now, however, by placing BIE at the border of two networks, such as a media gateway between IP and PSTN, both users enjoy a high-quality conversation. Application developers and service providers will surely find this innovative VoIP solution quite useful to deploy high-quality VoIP services.

Grandstream Networks, Inc.

GXV3000 SIP Video Phone

http://www.grandstream.com

(news - alert) Not all desktop VoIP phones are equal. Sure, most support the SIP standard — even Cisco finally adopted SIP support in their phone endpoints, but some desktop VoIP phones give you much more. Grandstream Networks' GXV3000 SIP Video Phone gives you a large 5.6-inch TFTP color LCD (CIF or QVGA resolution), an advanced VGA resolution camera giving you the ability to have high-quality videoconferences from your desk, rather than making a special trip to the conference room, where high-end videoconferencing equipment is often installed.

The GXV3000 is a next-generation IP video telephone based on SIP standard and the latest H.264 video codec, which is currently the codec of choice for high-quality video. The GXV3000 is the first IP video phone that retails for less than $300 and the first H.264 IP video phone that supports real-time (up to 30fps) high-quality video at very modest bandwidth level (as low as 32kbps, up to 1Mbps). The phone allows nearly all viewing angles via adjustable LCD screens and cameras.

This IP video phone provides three line indicators each of which can support independent SIP accounts. It also features dual 100Mbps Ethernet ports (switched or routed with built-in NAT router), dual USB ports, RCA style audio/video output jacks to TV, and a 2.5mm headset jack. Grandstream claims that this is the first IP video phone that has advanced error protection and picture recovery algorithm against packet loss and network jitter.

The GXV3000 has a unique design that uses a single video DSP chip (from

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TI) to process audio, video, and all network protocol handshaking. Compared to other designs, which rely on two or three chips to handle the challenging audio/video processing, this innovative design achieves a new record in price performance benchmarks, continuing to make Grandstream one of the primary VoIP equipment manufacturers that comes to mind when TMC Labs thinks of inexpensive, high-quality VoIP products.

Interwise, Inc.

Interwise Connect version 7

http://www.interwise.com

(news - alert) Interwise Connect may not be as well known as WebEx or Microsoft LiveMeeting, but Interwise can match them feature-for-feature and has its own features up its sleeves that make it one of the best online conferencing solutions on the market. Interwise Connect delivers unlimited voice, Web, and video conferencing for the enterprise. Designed for the unique needs of mid- to large-sized enterprises, they are unique in offering a "fixed price" with unlimited usage pricing model. Using Interwise Connect, companies can consolidate multiple conferencing tools with one product and give every department exactly what they need — voice conferences, Web meetings, virtual training, Webcasts, broadcasts, and recordings. Interwise Connect is sold as a software site license for unlimited use by licensed participants. They also offer a hosted service, which is licensed on a fixed price/unlimited use basis.

The voice conferences features prescheduled and reservationless meetings. Multi-level security is available (e.g., create a personal conference room just for the employees). You can also seamlessly escalate from voice-only to Web meetings. TMC Labs certainly likes that you can have a full-featured phone conference without per-minute charges or overage charges that some of their competitors charge. Interwise is quite innovative in that their solution allows you to participate via traditional phone calls or using VoIP and multipoint video. Interwise uses SIP to synchronize the audio from multiple devices (PC, TDM phone, IP phone) for voice, Web, and video conferencing.

This product allows you to lead or attend virtual classes with full moderator control and participant interaction features. One innovative feature lets you record the Web meeting and then let participants play back the recording on their own schedule.

Interwise told us that they are the first "Unified Conferencing application" by pointing out, "All other conferencing products today offer a subset of voice, Web, and video conferencing and fill in the gaps by bundling technology from one or more partners." They continued, "Interwise Connect is the first application that integrates all three classes of conferencing — voice, Web, and video — at both the architecture and data level. For customers, the benefits include lower conferencing costs, seamless escalation from voice-only conferences to Web-enabled meetings and events, easy integration with business applications and IT infrastructures for more effective user access and IT management, higher security for all types of conferencing, and simplified recording and editing of live events."

One final innovative feature of note is that Interwise's blended deployment option allows both hosted and customer premise approaches to be used together and combined in a single integrated application. Customers benefit from combining the cost savings, enhanced security, and greater control of an on-premise deployment with the rapid start-up and global reach of a hosted system. For enterprise customers, the hosted service can provide automatic overflow and failover protection for the on-site deployment. Because the two models can be fully integrated they can be managed as a single application.

Lucent Technologies

Lucent's Hosted IP PBX Service

http://www.lucent.com

(quote - news - alert) The Lucent Hosted IP PBX Service, from Lucent's VoIP for Enterprise portfolio, enables service providers to offer a turnkey hosted IP PBX service for their business customers, by leveraging Lucent's hosted services infrastructure and operations, VoIP professional services for the business premises, and VoIP marketing and technical expertise.

Lucent's is the first private label, geographically redundant, carrier-grade hosted IP PBX service that scales to serve T2/3 carriers up to Tier 1 service providers. Hosted IP PBX leverages their Global Network Operations Center (GNOC) and Security Operations Center (SOC) to deliver end-to-end network management and security from the WAN into the LAN.

With all the hype about dual mode phones and the ability to use your cell phone connected to your office PBX, Lucent is one of the few vendors to have actually done it. Using Lucent's Mobile Extension, it enables a cell phone to function as a full-featured office phone on the IP PBX system. This is the first offering of its kind that uses a hosted services infrastructure, allowing carriers to leverage both wireline and wireless assets to provide new productivity enhancing services to their customers.

In addition, Lucent built this using a modular design based on standards, including IMS, which enables them to integrate technologies from multiple third-party partners to support a highly reliable, high-quality VoIP solution that integrates into the carriers' existing OSS/BSS environment. Sprint and BellSouth are just two customers of this hosted IP PBX solution.

One unique aspect of this solution that Lucent points to is its strong application ecosystem. Lucent stated, "This offer gives providers a highly scalable solution to deliver not only VoIP, but provides the service provider access to an ever evolving hosted applications ecosystem to drive new value to businesses and support growth in network-based services for providers."

Lucent also told us, "Lucent has a market leading portfolio and vision for the future of network-based services driven from our IMS architecture. We are working closely with our customers to provide the solutions and expertise that will help them achieve their business objectives in the market so they can lay a foundation with VoIP today, and be well positioned to leverage that investment to new services, and new markets going forward. Lucent's Hosted IP PBX Service can evolve to a full IMS solution over time." IT

The Complexities of Providing IPTV

The entertainment industry is undergoing a dramatic transformation. The delivery of video over IP broadband networks is now a reality, opening many new opportunities for service providers. A changing regulatory landscape, new technologies and delivery models, and the promise of ubiquitous broadband access have sparked new business opportunities among media and telecommunications organizations.

As traditional voice and Internet service providers consider offering TV and integrated video services over broadband infrastructures, current "TV providers," such as cable multiservice operators, are also looking to the Internet as another distribution channel and as a means to expand the types of services they can offer. The technology for delivering television and value-added video services using Internet Protocol is called video/IPTV.

While very promising for many service providers worldwide, video/IPTV comes with challenges, such as scalability, operational complexities, and high quality of experience requirements, all of which can result in an inability to translate this promising opportunity into profit.

With technology, change often comes quickly. But, in the case of video/IPTV entertainment services, the pace of evolution has been particularly swift and has introduced unique challenges. Today's video/TV market is characterized by:

Growing competition — Competition among cable and satellite TV organizations is already fierce and operators are increasingly challenged to differentiate their services, maintain customer loyalty, and reduce turnover. As traditional voice and non-traditional video content providers enter the market, competition is only increasing.

Profitability challenges — To enhance profitability while remaining competitive, service providers are searching for new ways to grow revenue and retain customers. They are also searching for new strategies to reduce capital expenditures and operating expenses.

An evolving market — Opening regulations in North America and elsewhere will soon allow a new wave of players to enter the TV market, led by traditional telephone and Internet service providers. Concurrently, consumer adoption of broadband Internet is reaching unprecedented levels. According to IDC, there were 146 million broadband subscribers worldwide in 2004, with 317 million expected by 2009 — a compounded annual growth rate of nearly 17 percent.

New technologies that enable scalable video over IP — A wave of emerging technologies (including advances in video compression, IP Multicast, QoS assurance, and DSL speeds) will enhance existing video networks and dramatically expand the capabilities of networks that today primarily support voice and broadband Internet services.

Service convergence — More and more, consumers are bringing a "triple play" of voice, video, and broadband Internet access onto their home computers or televisions. Major operators are already moving to deliver all these services as a "bundled" product offering that will allow for new capabilities, cost savings, and revenue models. In the near future, this convergence will also extend to other multiservice devices in the networked home, as well as to mobile devices and networks, enabling "triple play on the move."

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By Paul Sanchirico

Evolving business models — Changes in both the consumer TV/video market and transport network technologies are reshaping the TV landscape. The types of content, the ways in which content is viewed, the methods of broadcasting, and the level of interactivity between viewer and content are all undergoing dramatic transformations. (Refer to Figure 1.)

Those service providers willing to embrace emerging technologies and adapt their business models to the new market realities stand the best chance of succeeding. But, establishing and maintaining a successful market position over the next decade will require more than just a willingness to change. Service providers also need an intelligent, flexible, and reliable technology infrastructure that is capable of supporting emerging "triple play on the move" services, as well as delivering current services more efficiently.

Increasingly, service providers are recognizing that IP is the ideal foundation for scalable, resilient, cost-effective video networks. With a robust, intelligent IP network, operators can efficiently deliver true triple play services with mobility and position themselves to make the most of this unique and growing market opportunity.

Deploying IPTV is a significant undertaking. In many ways, it's more challenging than implementing voice and data because it requires sometimes complex interactions between a range of systems (e.g., digital rights and asset management, video head-end encoding, ad insertion, set-top boxes, and the IP network). A successful implementation calls for a balanced systems approach that puts functionality in the right place — from the head-end through the network to the set-top box — making the right linkages among those architectural elements, so that the system can scale cost-effectively and deliver a quality user experience. Successfully navigating the complexity of deploying IPTV requires the seasoned know-how and experience of partners that have deployed large-scale video networks previously.

Scalability

The true challenges of deploying an IPTV service are exposed as the service provider must support a growing number of subscribers.

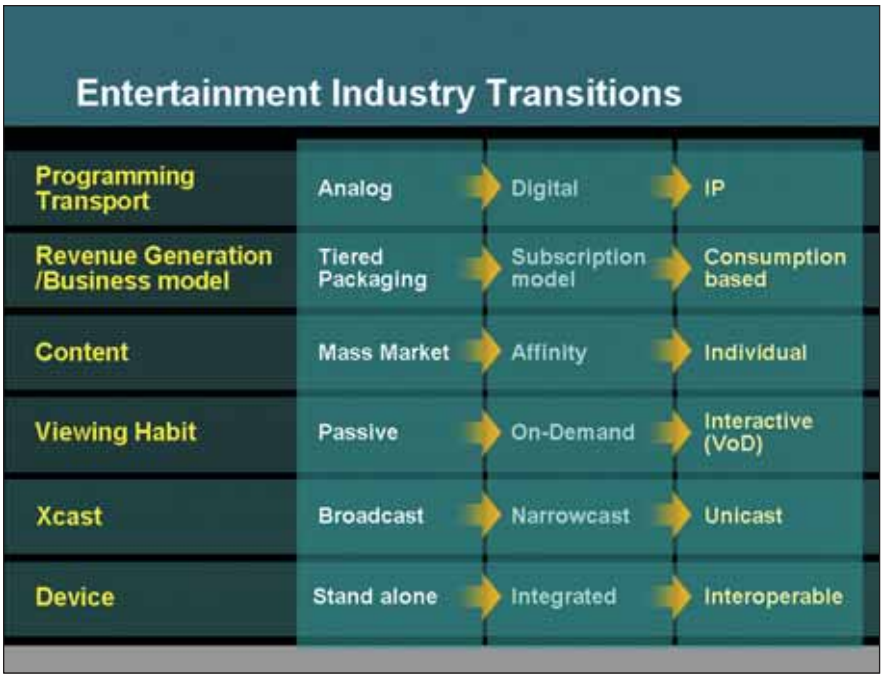

Figure 1. **Evolving television landscape**

As a rule of thumb, there should be no more than one dropped packet per two-hour movie.

Scalability demands vary with the type of IPTV service. For instance, when scaling the network to support broadcast video services, service providers need to factor in support for national and local standard definition (SD) and high definition (HD) channels, inter-region channels, ethnic programming, and local ad insertion. Furthermore, market pressures will push them to increase the number of offered channels and to add more HD channels (which will likely also need to be simulcast in SD). Supporting these video streams will consume lots of bandwidth.

National streams may enter the network through a super head-end centrally located in the country and local channels via video head-ends in each metro area. Moreover, some programming may be broadcast to some neighborhoods and not others in order to best meet demographic demands. Therefore, inflexible Layer 2 schemes that blindly deliver all channels to all parts of the network will be expensive from both a capital expenditure and an operating expense perspective.

What's needed is a Layer 3 dynamic multicast capability to provide an efficient way to deliver broadcast channels only to the parts of the network that actually need them. This is especially important for carriers that have to lease their transport capacity. In addition, a dynamic multicast capability can support multiple injection points (the places where channels enter the network) and change channel lineups with greater operational ease.

Too often, the impact of a video on demand (VOD) services on scaling the network is underestimated. Successful providers of VOD are seeing peak demands that exceed 10 percent of their digital video subscribers using the VOD

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services at the same time. Since each VOD user requires a separate video stream through the network — as opposed to a broadcast channel, in which a single stream serves many subscribers — the bandwidth demands of VOD traffic can far exceed those of broadcast video. Network designs need to cost-effectively account for this.

Since video takes up so much bandwidth, compared to voice or data services, it often becomes the foundation for a converged network infrastructure. When designing a converged network infrastructure it is imperative to cost-effectively address the diverse bandwidth, reliability, and routing requirements of the converged service set (voice, video, and data).

Quality of Experience

Video subscribers expect a high quality picture. As a rule of thumb, there should be no more than one dropped packet per two-hour movie (a dropped packet can translate into a disrupted video picture, often described as macro-blocking). Such a stringent packet loss rate far exceeds the network demands of any voice or data service. The underlying network infrastructure needs to have the QoS mechanisms to ensure a high quality video picture. Sometimes the mechanisms used for voice and data services aren't sufficient.

For example, monitoring video packet loss rates with the techniques previously used for monitoring voice and data packet loss rates is often not effective because the video requirement is orders of magnitude lower and therefore may not be detectable with those older approaches; new techniques and innovations are required.

Another example is the need for video admission control. In today's world, metro voice and data networks are oversubscribed. Service providers count on the variability of the subscribers' usage of their services and cost-effectively size their networks using economies of scale. If more data traffic is offered to the metro network than it can handle, the network will start dropping packets and slower Web access results.

As service providers offer IPTV services, economics will again push them to oversubscribe their metro networks. If more video traffic is offered to the metro network than it can handle, and the network starts dropping packets, the result isn't slower video service. Rather, it's poor video picture quality, because dropped packets appear as macro-blocking on the TV. Furthermore, the video picture quality of an entire neighborhood could be adversely affected.

In response, service providers need to implement a video admission control scheme to prevent the acceptance of video streams that would push the metro network over its capacity. This requires two things. First, the video application must be linked to the network. Although the application recognizes the request for a video stream and knows where it will originate, the application needs to be tied to the network's knowledge of bandwidth availability along the path the video stream is following — from the source to the set-top box. Second, service providers need to take an approach that can deal with the complex topologies of the metro network.

Of course, it is impossible to maintain high-quality service if system availability is at risk. Therefore, an IP-based network transporting video traffic must be configured with redundant components and multiple connections throughout the network to ensure uninterrupted service in the event of a failure. Because service providers place a higher level of availability on broadcast services than on VOD, some service providers are deploying redundant video head-ends. As a result, if one head-end fails, the network should be able to automatically switch to the other, ensuring an almost imperceptible interruption of service.

Requirements for IP next-generation video networks

To succeed in tomorrow's video market, service providers must be able to deliver:

- *On-demand interactivity*, including interactive guides and services, VOD with network-based personal video recorders (PVRs), and support for home-based PVRs;
- *Rich content variety*, including more specialized channels and local channels, as well as more HD content;
- *Superior customer experience*, encompassing both high quality video and audio and maximum service reliability;
- *Expanded accessibility*, so that customers can receive and interact with services through a variety of access technologies and devices;
- *Integration with the networked home*, allowing a convergence of multiple services and devices;
- *The ability to interact with mobile devices and wireless networks*, allowing TV and video content to roam with customers just as easily as voice communications do today.

As many providers are discovering, the most effective way to meet these demands is to provision and manage all consumer services — TV, voice, and broadband Internet — over a single, converged, intelligent IP network that offers innovative, cost-effective, and scalable approaches to IPTV delivery, regardless of the provider's choice of access technology (i.e., cable, DSL, Ethernet, or fiber). These next-generation IP networks can help service providers deliver scalable video more flexibly, reliably, and cost-effectively, while providing a richer, higher-quality customer experience. IT

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For more information, please visit to company online at http://www.cisco.com.

Driving IPTV Growth:

The Challenges and Perspectives

To meet competitive challenges and tap into new growth opportunities, carriers of all kinds are aggressively striving to become Complete Digital Services Providers (CDSP) to their end customers. To achieve that goal, telecommunications service providers are shifting their networks to Broadband Internet Protocol (IP) infrastructures. These networks enable telecommunications operators to provide their customers with IP-based television services (IPTV) and a myriad of next generation IP-based services that end users are sure to incorporate into their increasingly digital lifestyles.

Telcos must deploy IPTV networks in order to evolve into CDSPs and compete with advanced services their competitors are beginning to offer, including triple play. By adding IPTV to their service portfolios, telcos are more likely to retain customers who might otherwise turn off landlines and obtain voice, high speed Internet, and television services from cable MSOs, satellite providers, or ISPs.

In addition to customer retention, deploying networks that support IPTV allows telcos to gain market share and streamline business operations. They can use these networks to target the entire customer environment and optimally distribute functionality and intelligence in the form of consumer-friendly services throughout end users' homes. IPTV's flexibility is key, as it will enable telcos to transport multiple services on a single network architecture, mix and match services on a per customer basis, and send customers a single bill.

Specifically, IPTV networks with sufficient service management capability will allow service providers to customize services to a customer's preference, including different data rates, channel lineups, and modes of distribution, such as high definition TV (HDTV), broadcast TV (BTV), video on demand (VOD), and personal video recorder (PVR).

IPTV's flexibility will also enhance the end users' experience, which must include simple set-up and installation, excellent reliability, and quality of service (QoS). Service providers' IPTV networks also must deliver:

- End-to-end service management,
- Support for multiple devices in the home,
- Services integration with customers' home networks and end devices, and
- Security.

IPTV to date

Early IPTV deployments demonstrate that significant business and technical challenges must be overcome to ensure that the application is compelling to end users and competitive with cable and satellite offerings.

Experiences of the past decade have proven that "me too" services are unlikely to yield profitable penetration rates. This is especially true in already saturated pay TV markets and in markets lacking a strong pay TV presence. In order to steal market share from existing pay TV operators, CDSPs must leverage the technology's unique capabilities — interactivity, personalization and interoperability — to provide service level differentiation.

When deploying IPTV networks, telcos will use expertise gained from delivering digital services over their infrastructures from years past to address several gating technical challenges. First is the fact that their current broadband

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By Ben Wagner and
Charlie Gonsalves

Customers do not care how the services are delivered to them. Rather, they care about what happens once the services are inside their homes and networks.

access networks may not support the extreme demands and dynamic nature of next generation video services. Upgrades to ADSL2+ or fiber to the node/premises (FTTN/ FTTP) will likely be required. Once access network issues are resolved, in-home wiring at the customer premises can introduce a new bottleneck to high bandwidth, IP-based services.

Though demand for, and deployment of, the technology is robust, IPTV is a relatively immature technology. Many standards remain under development and no single vendor is able to provide carriers with interoperable, end-to-end IPTV solutions. Adding to the challenge, many complex networking and service issues will need to be solved during deployment of commercial service, because even the most intensive testing will not resolve all the possible technical issues that carriers and end users will encounter.

Realizing that IPTV is vital to their survival, telcos must address the issues. They must systematically consider the various sources of differentiation that IPTV provides. They also must design a clear service roadmap for deployment, and work through the technology and business implications that arise during the process.

After building field force organizations and provisioning models to enable the profitable delivery of video services, service providers then must prepare their networks, operations support systems (OSSs), and employees to meet the fundamentally different demands of the IPTV environment. In most cases, carriers will need to re-tool back offices in order to deliver the sophisticated subscriber and session management required to support delivery of high quality video services.

To succeed in their IPTV efforts, CDSPs must devise a method to measure and meet consumer preferences. According to the McKinsey Group, they can meet consumers' needs by focusing their efforts on five categories.

Differentiated content can be delivered in the form of content that was previously unavailable to customers, such as international or multi-lingual channels, new formats like HDTV, exclusive sporting events or movies, and repackaged content.

Interactivity can be fostered in the form of games, virtual storefronts, or multimedia communications between people and people, people and devices, or devices and devices.

Interoperability will manifest itself via multimodal access to the IPTV voice, video, and data stream at the customer premises, as well as away from it. The ability to access both personal and public content across multiple types of end devices and other wired and wireless networks is key.

Innovative hardware will include home gateways and set top boxes (STBs) that are integrated with one another and with TV sets, appliances, game consoles, PCs, laptops, network storage devices, cell phones, and a host of devices that may not yet exist. New peripherals, such as keyboards, cameras, and more, will be connected or attached to the IPTV in-home network and viewing device. Remote controls that tie multiple devices together and offer enhanced usability of new content and services will add value to the IPTV experience.

Personalized content will proliferate as IPTV matures. It will range from customized channels and services for each end user in the home to advertising targeted at each end user. There also will be growing demand for, and consumption of, micro market content, such as personally produced audio, video, or still images targeted at specific communities of interest. Video blogs and PodCasts represent the first wave of this trend.

To date, those service providers that have offered IPTV have found that the application its consumers are most interested in, and are willing to pay for, is TV programming. More importantly, however, they have found that IPTV needs to work as well as or better than existing cable or satellite TV services. Carriers also have learned that interactive, on-demand services provide a means for differentiation and a way to increase customer loyalty.

However, while bundling of triple play services is a strong weapon in CDSPs' arsenals, it can also be their Achilles' heel. Service providers that fail to ensure quality of even one of the bundled elements will experience a 60 percent higher churn rate from affected customers. Simply put, if IPTV service is not stable, customer churn will be extremely high.

Other lessons include the fact that STB cost is key to a successful and profitable IPTV strategy. The cost is driven by the complexity of the STB's software, the applications, and the hardware specifications. Separating the head-end supplier, the conditional access system, the STB, and the middleware is key to an open architecture and helps to create a low cost base for future innovation. In addition, content costs and contract subtleties that service providers negotiate have a significant impact on service profitability.

Great expectations

It is at the customer premises where the access network complexities meet complications of the residential gateway and the multiple end devices and/or home networks connected to it. At the residence, technology must adapt to the home environment rather than the reverse. The home environment may extend to vacation homes, boats, motor homes, etc. This is because consumers will look for access to information, entertainment, and communications that they have come to rely on at home and on the road. Mobile consumers

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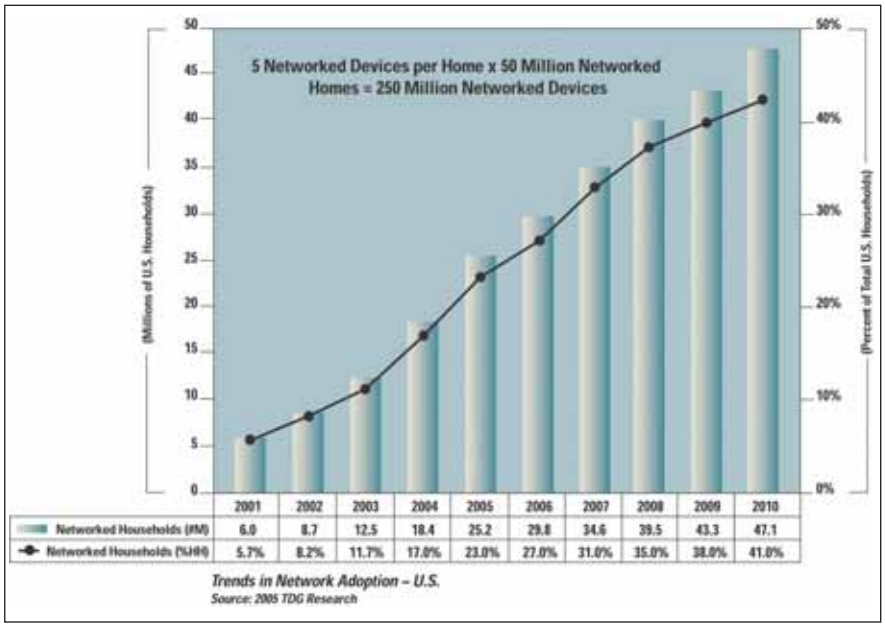
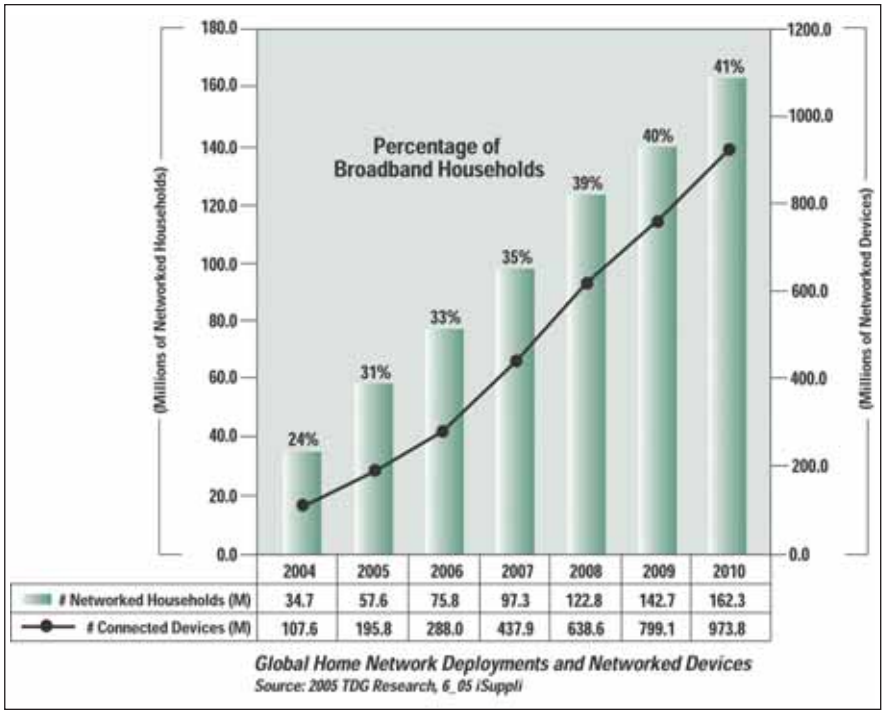
should be able to access storage on their residential gateways at a minimum, if not other devices as well, at the customer premises.

Critical to achieving these goals is the IPTV service providers' ability to integrate their access networks and IPTV services into home networks and the growing list of end devices attached to them.

According to TDG Research, in the United States, there are typically five networked devices per home. Multiply this by 50 million networked homes in 2010, and you have more than 250 million networked devices. Globally, the number of networked households will reach 162 million, with more than 973 million networked devices by 2010.



Trends in Network Adoption – U.S.
Source: 2005 TDG Research



Global Home Network Deployments and Networked Devices
Source: 2005 TDG Research, 6_05 iSuppli

For IPTV to flourish, service providers must guarantee end-to-end quality. This is made more difficult by the variables inherent in home networking and the numerous devices they connect.

What's new?

As mentioned previously, telcos are promising — and consumers are expecting — something new from IPTV. At the very least, they expect it to support high definition TV (HDTV), video on demand (VOD), and personal video recorders (PVR).

While HDTV and VOD are table stakes, PVR is a capability that CDSPs can use to differentiate themselves. PVR allows end users to time shift and, perhaps, even place shift their TV viewing. CDSPs can differentiate PVR in terms of programmability and storage capability. First, telcos will decide whether it is in their best interest to store video locally on the residential gateway, on the STB, or on the network. It is important to note that legal restrictions imposed by content providers may influence decisions regarding content storage.

A network storage environment will likely provide more storage than what is available today on existing PVR devices. It will better support time/place shifted applications and enable end users to view selected programs at the time and place of their choosing. With network-based storage, when an end user wants to watch an HBO program, he or she can select it off the server and watch it on demand, instead of setting a PVR to record it and then queuing the program up from the hard drive for viewing.

While programmability is rudimentary today, ultimately, the goal is to enable PVRs to be programmed completely based on user preferences. The ability to partition a single PVR for use by multiple members of the household could be of interest as well. Telcos do not want to play a pricing game, so a variety of PVR options would allow them to offer capabilities beyond those that are available today.

Regardless of where PVR storage is placed, STBs will offer some sort of storage capability. As the need for storage increases, it will likely migrate to the stand-alone storage devices in the home and eventually shift to network-based storage. Home-based personal storage devices will become more and more popular as prices for storage continue to plummet and as consumers accumulate more and more data, photos, and videos to archive.

Another challenge at the customer premises is that consumers are looking for content portability. CDSPs must be able to distribute IPTV streams to all TV sets — or any type of viewing device the future may bring in the home. They also must be able to deliver IP-based services to multiple devices, such as PCs, portable MP3 players, and video recorders, throughout the home.

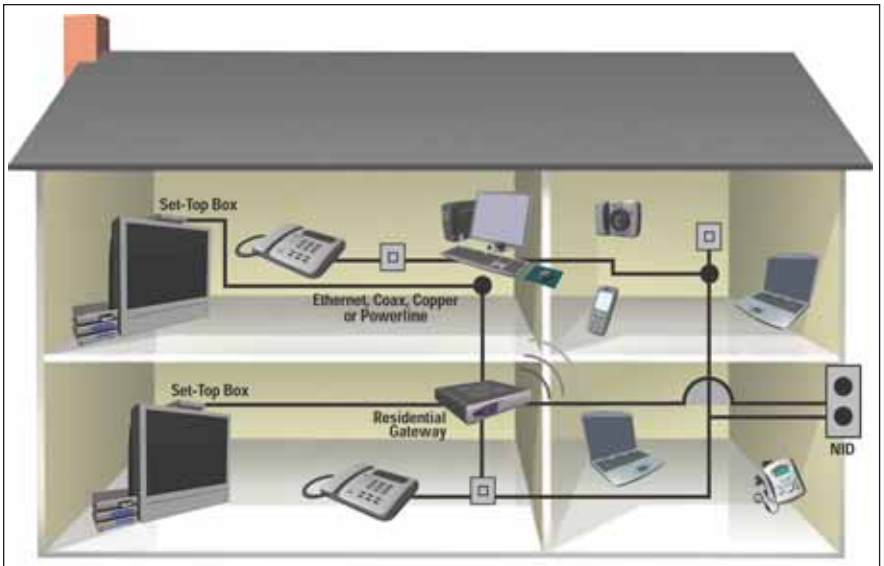
This means that *all* the features and functionality offered by IPTV should be available on any TV or device in the home. Service providers can expect end users to connect a growing number of devices to their home networks including cameras, network storage devices, printers, wireless networks, and portable music players. They also can expect in-home networks to increasingly become a network of networks.

Making IPTV delivery throughout the home even more compelling, yet more complex, are "breakthrough" capabilities, like interactivity and personalization. Service providers can expect both to catch on like wildfire with consumers. As soon as one service provider introduces these capabilities, competitors' customers will demand them as well.

Because IP enables interactivity, there are more and more applications, such as peer-to-peer gaming applications and voice over IP (VoIP) phones, coming to market that lend themselves to the two-way flow of information. This means more symmetrical usage of bandwidth on the home network and across the wide area IPTV network.

When service providers give consumers the opportunity to personalize IPTV to meet their individual needs, the service becomes more interesting. Personalization means user programmability and, needless to say, programmability becomes more complex as the home network serves a dynamic and increasing number of individuals. The home network should give each end user the ability to build a personal profile, with personal preferences, that helps record, discard, and load content to any device or personal storage system of choice. Programmability also enables parental controls to be accessed, sculpted, and implemented.

It is worth noting that CDSPs are serving different "technical and cultural IQs" in each home. For adults that are still stymied by the blinking VCRs of years past, programmability of the IPTV home network will need to be very user friendly. However, their children and young adults, who are generally more technologically adept, will be capable of, and less averse to, more complexity when it comes to personalizing and programming their IPTV services and end devices. Operators might well benefit by making it possible to offer those who feel they have the aptitude a higher level of complexity, enabling them to do more with their services.



Basic Two-Box Solution

No place like home

Currently, at the customer premises, IPTV providers rely on a basic two-box solution — a residential gateway and an STB. The residential gateway feeds the STB via CAT-5 cable, Ethernet, HPNA, Home Plug, or MOCA connections. The connection used is determined by the service providers' end goals.

To optimize their IPTV networks' revenue potential CDSPs need a multi-room home networking solution that:

- Enables all TVs in the household to share a common PVR. Differentiation could be established by offering customers partitioning of the PVR or personal/partitioned PVRs;
- Provides high quality video reliably and securely to every room in the house and enables parental controls to be enforced throughout the household;
- Provides a quality HDTV signal and an upgrade path to meet the needs of all the potential HDTVs that could be added to the home during several years' time; and
- Delivers interactivity and personalization throughout the home. It is likely that personalization will need to be portable from room to room.

Service providers should factor in installation costs of home networking

If IPTV service is not stable, customer churn will be extremely high.

solutions, and costs to expand throughout the home as families evolve and needs change accordingly. Carriers should keep in mind that new services will likely foster new requirements for the home networking solution, so flexibility is key. Therefore, service providers that build remote diagnostic and management controls into their IPTV networks will benefit greatly from their investments.

When developing a home networking strategy, there are many questions that telcos should ask themselves before they deploy their IPTV networks.

- Can the data and video services they plan to offer be delivered on separate networks, or can they be combined in the same IP data flow using QoS extensions?
- While "no new wires" home networking solutions offer simplicity, are they robust enough to support QoS for single or multiple video streams?
- Will the home networking solution they operate from a central point of control, or will it use peer-to-peer networking to communicate between devices?
- As new services are introduced, what is the strategy for adding, monitoring, and managing new devices connected to the network over time?

When it comes to content, service providers must ensure that it can be transported throughout the home seamlessly and securely. Consumers should be able to access and play the content they want, on the device they want, without knowing where the content is located, the format of the content, or the playback capabilities of the device they are using. While complexity should be masked from consumers wherever possible, this must be done without sacrificing consumers' ability to use the content in the manner they choose to use it, share it, send it, or store it.

CDSPs can use different methods to deliver programming to end devices. A streaming codec, such as RealNetworks or Microsoft Windows Media Player, can be used, as can an STB connected to a central head-end via a DSL connection. Another method employs a cable STB using a DOCSIS two-way communication path to deliver a compliment of on-demand programming. In the wireless realm, service providers are looking to WiMAX equipment to transport IPTV signals. It is important to consider how different delivery options will fit with home networking solutions.

Semiconductor building blocks

The chips used in home network gateways and devices are key to bringing IPTV service definition to fruition. While the IP network is digital, human senses are analog. It is important to remember that the entertainment and information that flows through digital IPTV networks is ultimately consumed by analog senses. Digital signal processing is the best, most cost-effective method of traversing the many analog-to-digital/digital-to-analog conversions that take place along that path without losing integrity on either side or adding cost to the network in the form of additional components.

Using a system on a chip (SoC) approach integrates the necessary hardware into fewer boxes. The SoC enables software to be used to build in the capabilities and hooks that allow the middleware to deliver programmability, interactivity, and personalization that service providers use to differentiate their IPTV services from their competition. As chip technology matures, the software component on the chip is getting bigger and bigger.

Indeed, aside from the outer shell and LEDs of home networking devices, the semiconductor solution is actually the whole product. It is crucial that chip manufacturers understand the home networking devices' system architecture and the building blocks in order to tie them all together to integrate the desired functionality. In addition, the boxes need I/Os to support plug and play operation for connection to other devices. The DSL modem/router, wireless router or RF device can be placed on separate chips, or they can be integrated onto a single chip along with the complimentary software. The chip supplier also provides the codecs for the STB.

Using appropriate APIs, the OEMs make the chip's functionality presentable to the end user. The user's name, MAC address, and Web security functions are all programmed into the Digital Signal Processor (DSP).

System-level approach

Modularized DSPs can be built into more complex components for application-specific uses in consumer electronics equipment and other devices. By distributing programmable devices around the IPTV infrastructure, customer premises, and mobile environments, software can be used to extend and upgrade the entire networked system without requiring the replacement of dedicated resources.

The flexibility of application-specific approaches to chip design requires that designers understand systems at a much higher level than a single component of the system. System-level performance is the goal, but it can actually be compromised by the performance of individual components. Therefore, system-level thinking is critical for today's technology providers. It is no small task to partition a system for maximum performance in today's networks and also provide for software extensions that will be used tomorrow.

To build flexible common architectures that deliver services wherever the consumer resides requires knowledge of the technology deployed in the total IPTV solution. Broad IP portfolios cov-

Telcos are promising — and consumers are expecting — something new from IPTV.

ering all the pieces of these solutions are necessary for the implementation speed and reliability of the ultimate solution.

Service providers will deliver services through all-fiber or hybrid fiber/copper/coax access, wired and wireless architectures to multiple end devices. As complete solutions are developed and introduced, carriers' ability to mix and match today's technologies is critical to their evolution as CDPS. Service providers and their technology suppliers must understand this and provide a framework for how their individual approaches to IPTV deployment and service creation will enhance the evolution to a broad-based operator network.

Reaching consumer-level price points as quickly as possible is key to IPTV's near term uptake by subscribers. Unfortunately, high-volume manufacturing is not an option. This is because reaching these price points is not a simple matter of counting chips when digital and analog transmitters meet on the same piece of silicon.

Instead, the manufacturing process is intimately linked with the design of mixed signal chips. Quality and reliability require a delicate balance between the engineering and manufacturing realms. To extend a given architecture into the future, technology providers must have a clear roadmap that maintains exacting tolerances and they must be conceptualized and implemented with a holistic view of design and manufacturing, not a fragmented view. Quality and reliability control of mixed signal devices is possible only when designers have full control of each step in the process.

Because the name of the game in IPTV is the introduction of new services, the process of introducing new services must not disrupt or hinder performance of operators' existing network operations. As the number of services increases, compatibility of these services becomes more important. Technology providers must have complete respect for a service provider's infrastructure, including allocated resources in order to ensure infrastructural integrity. They must go beyond simple compliance with industry standards and be willing to drive new standards that will enable CDSPs to grow their influence in their customers' digital lifestyles.

While the global consumer market is enormous, it is highly diverse and consists of many cost-sensitive segments. As new services move from trials to mass deployment, cost will be of paramount concern. Therefore, cost leadership is not only limited to the bill of materials (BOM), but also involves operating costs, such as maintenance and extensibility. Smart designs, smart business models, and economies of scale will enable new cost points, new markets, and better margins for cost-focused service providers.

In order to build, manage, and extend new services (i.e., moving storage to the residential gateway and accessing e-mail from any screen in the home), intelligence must be distributed appropriately throughout WANs and home networks. Service providers need integrated management tools that enable them to effectively mold IPTV services and technology into their customers' lifestyles, and digital intelligence will allow remote management without compromise.

The 'Anytime, Anywhere' vision

In the scheme of offering Anytime, Anywhere communications and entertainment to consumers, IPTV is a given. Service providers that intend to lead by delivering new services to the consumer are now currently making plans to deploy IP networks and use them to deliver IP-based television. Those networks also will deliver emerging IP-based services that offer end users personalization, interactivity, and interoperability and, in doing so, make it possible for CDSPs to differentiate their service offerings.

While deploying the access networks that deliver IPTV video services to the customer premises is getting most of the attention today, routing the signal throughout the home to residential gateways, STBs, and multiple devices poses a significant challenge to service providers. Home networking will play a critical role in service differentiation.

Truly, customers do not care how the services are delivered to them. Rather, they care about what happens once the services are inside their homes and networks. As a result, service providers are working very hard to develop flexible, feature-rich, high quality home networking solutions that will enable them to fulfill the Anytime, Anywhere vision in a way that compels existing customers to remain loyal and, at the same time, beckons new customers to come aboard. IT

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Video Animates Superior Business Communications

We've been talking about video for years now, but it has never taken off as a business communications tool. The world has changed, however, and today, video should be considered a vital component of superior business communications.

We often focus on technology — what's new and what's hot. This isn't really about technology; rather, it's about people who need to be more quickly interconnected than ever before in a vastly more mobile and co-creative world.

What's changed today? First, customers are much less forgiving. They know you can do better because they have experienced excellent service elsewhere; they also know where your competitors are. It's very easy for your customers to bolt — and they will — when you don't live up to their expectations. So, if you screw up customer service even one time, you run the risk of undoing all your previous good efforts, unless you do something different.

Customer expectations, not yours, make the difference

"Something different" means really becoming customer-centric, not merely thinking or talking about it. It means identifying and understanding customer expectations and making it as easy as possible to conduct business with your company 24 hours a day, 365 days a year, regardless of where your customers are or how they contact you. Something different also means building learning relationships with your customers so you can think and act in a customer-specific way to build lasting interdependence. Only then can you maximize the value of your business to your customers and the value of your customers to your business.

Becoming customer-centric and understanding customer expectations creates a significant difference for your business. It's about business effectiveness — doing things better as well as faster. It's also about adaptability and innovation that will give your business an ongoing competitive advantage.

Video can enrich your business communication to exceed customer expectations. Video also provides you with new channels of communication to ensure that problems are solved and decisions are made immediately. You can craft unique contextual customer services that optimize each interaction opportunity. Video also enhances the ability to bond with your customers to strengthen relationships and build loyalty. It can give you the edge you need to engage your customers and prospects so your business stands out to gain passionate customer advocates.

Video significantly expands service opportunities

Video significantly enhances your service and expands opportunities. You can start in your current contact center and add video capabilities to make it more cutting-edge. One option is to make the time your customers wait for a service representative more productive. Instead of generic 'music on hold,' you can deliver customized video clips that answer questions, provide company updates, or make appropriate offers. Video clips quickly cover complex information that would be impossible otherwise.

Another outstanding option comes from supporting video calls. How many of your customers have mobile video phones or computers with video calling capability? What could you do to help them? This could be a substantial untapped market for your company as the number of users continues to grow. Today, mobile phone providers can offer the same level of support for video call customers as they do for phone call customers. This service can be further enhanced by delivering informational video slices to sophisticated mobile devices. But this is only the beginning — a medical clinic could provide better patient care by using video calls to help with diagnosis. Or your business could start a video podcast service. Again, the objective is to offer the same excellent

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By Betsy Wood

level of service to your customers effortlessly, whether your customers are in the office or on the go.

You might envision video kiosks as an integral component of your superior customer service. These are an excellent start because they can be added to some of your current contact points. For example, a bank can provide help or more complex services like loans at current ATMs. Video also facilitates security, because customer identification is instant. Or, an airline could expand self-service options beyond check-in. With video, you can do a better job faster and complete a customer request the first time. Helping customers immediately impacts customer retention and loyalty notably while reducing your operating costs — a powerful combination for your business.

Once you support video calling, additional capabilities, like video conferencing and video messaging, can easily

Innovation is just as much about listening to your customers as it is about developing products in a lab.

be added. For example, a large building supply store might have experts available to consult with customers; or a real estate agent might help clients preview homes or fill out mortgage applications. When your customer calls in for service, you can move from voice only to interactive video when it enables more efficient resolution of his problem. It's often considerably easier to *show* someone how to do something than to *describe* it.

Another valuable use for video conferencing is to bring in an expert instantly to improve first contact resolution. Looking back at the contact center scenario, where a service rep is trying to solve a difficult problem, teamwork becomes more dynamic and with greater impact when the CSR can instantly tap into an extended team of available specialists. The customer is happy, having gotten critical answers right away, and it all costs your business less because it eliminates multiple interactions.

Adding video messaging is another logical progression. Video messaging augments your total business communications approach and can help clarify technical issues or deliver better instructions, both for you and your customers.

A video portal can be implemented to provide convenient, 24-hour access to comprehensive information for customers as well as employees. Using friendly and fast speech navigation, users can browse through a selection of news headlines, sports highlights, music videos, or any relevant media and easily download them to their mobile devices. You can keep customers, employees, and partners up to date by delivering company news and new product training information. A video portal significantly enriches the opportunities for you to provide complex and dynamic information previously not possible, creating an additional point of entry to your business.

Foster vital collaboration using SIP

Another change is the wider acceptance and proliferation of converged networks within businesses and service providers. With this shift, converged IP networks and SIP are becoming cornerstones for conferencing and collaboration applications. This allows companies to leverage the power of SIP enterprise-wide to foster vital multimedia collaboration, including video. SIP (define - news - alert) capabilities simplify communication and collaboration using any device to open limitless communication avenues with customers, partners, and employees. SIP also enables a universal approach that spans enterprise, service provider, wired, and wireless networks.

Because SIP was developed with multimedia communications in mind, it doesn't have the limitations of previous standards, like H.323. SIP minimizes most of the previous hurdles to video by streamlining communication set-up and eliminating communication device dependence. In the future, SIP will likely be essential to every stage of customer and enterprise communications.

SIP also facilitates important collaboration by adding a presence capability. So, whether it's instant messaging, a video conference, or a phone call, users will be able to effortlessly know which team members or specialists are available. Employees can customize presence information so that the system provides colleagues with more detailed information, like "Be right back," or "On conference call for one hour." Additional personalization let's users manage call routing and answering, call screening, and call logging to fit individual situations.

Employees can work anywhere, even at home, and have a superb set of tools at their fingertips, making teamwork more versatile and real-time. This powerful set of capabilities translates into a more adaptable work environment, enabling employees to work not only faster, but smarter as well — all of which boosts productivity (and profitability).

Innovation makes you a leader

The most impressive combination for your business brings together breakthrough customer service and a dynamically cooperative work environment to deliver innovation. Innovation makes your business the ongoing leader. But, thinking differently and being able to act in a customer-specific way requires insight and engagement. An engaged business transforms customer communications from just talking to working together, from delayed to immediate, from reactive to proactive.

Innovation, therefore, is just as much about listening to your customers as it is about developing products in a lab. When your business listens and learns from customers, you'll understand not only what they need, but what motivates them, so your business can anticipate future requirements. Richer video communication can play a crucial role by delivering a proactive and flexible connection with your customers to impart unique value. Innovation endows your business with tremendous differentiation that frees you from competing on price and generic customer service.

The time for video is now. You can continue down the same old path, ignoring whether it makes sense for your customers; or you can do something new and different that makes your customer service and, therefore, your company, distinctive. Animate your customer service with one or more video capabilities to offer superior communication that differentiates your business. Video expands your horizons to provide an exceptional, convenient and seamless customer experience that continues to exceed expectations. Enriched video communication can fuel ongoing innovation to strengthen customer relationships and boost employee productivity for a more profitable business. IT

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Implementing WiMAX in Legacy Mobile Networks

As WiFi hotspots proliferate across the nation and wireless Internet access continues to become a part of everyday life for people on the move, there is a growing need for a universal broadband wireless access network. Because it supports high-throughput broadband connections over long distances and all IP architecture, Worldwide Interoperability for Microwave Access (WiMAX) is emerging as the most likely broadband technology to make that vision a reality. WiMAX can be used for a number of applications, including "last mile" broadband connections, hotspots, backhaul, and high speed enterprise connectivity.

To facilitate rapid deployments of innovative wireless services and technologies, including voice, data, video, and others, the Federal Communications Commission (FCC) recently announced plans to auction 90 MHz of advanced wireless services spectrum — at 1,710 to 1,755 MHz and at 2,110 to 2,155 MHz. The spectrum auction is scheduled to start on June 29, 2006 according to the FCC. The availability of additional spectrum is expected to give an impetus to the deployment of broadband technologies, like WiMAX.

As more and more WiMAX (define - news - alert) networks are deployed, they will provide end users with widespread, reliable, cost effective access to basic and advanced IP services. The key benefits WiMAX offers network operators include: high spectral efficiency, higher capacity, and standards-based technology for fixed and mobile wireless access. The technology's end-to-end IP architecture provides users with optimal connections that enable access to content-rich applications and services, like Voice over IP (VoIP).

While today's network operators have their hands full growing their existing networks to keep up with demand for voice and simple data services, they do not necessarily need to delay their WiMAX deployments. This is because network operators can choose flexible service delivery platforms that are designed to integrate seamlessly into their legacy networks reducing the cost, complexity and time it takes to deploy WiMAX. Integrated service platforms allow network operators to reuse existing physical plant, operations support systems and back end infrastructure.

Access and Transport

Network operators have a big head start when deploying WiMAX access technology because they can install the new radios at their existing cell sites. In fact, using their existing footprints, most network operators find that they can reach 70-80 percent of their service area. Radios mounted at the tower need to be connected to a central switching station, which can be accomplished using the carrier's existing Ethernet network or transport network.

Platforms that provide optimum power and system gain enable operators to minimize the number of base stations needed, which translates into reduced capital and operational expenses. Radio

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By Jorg Lippert

spacing also depends on frequency, so WiMAX platforms that flexibly adapt to a range of frequency channels and offer quadrature amplitude modulation help optimize the capacity of the new networks. Some also feature system software that optimizes system parameters for different application traffic demand and user position within a cell and is capable of assigning different priorities to different user groups.

Further integration is available to network operators that choose solutions that use a modular multi-standard base station (MBS) based on GERAN and UTRAN. This is because the MBS allows for the integration of all mobile communication technologies into one system, from GSM and EDGE to 3G/W-CDMA and HSPA, to WiMAX and Flash-OFDM.

Back End Integration

WiMAX is an access technology, but network operators need to do more than install WiMAX radios on their cell towers to provide customers with wireless broadband service. In addition to tying together the physical plant, a good wireless integration platform also ties the WiMAX network to the operator's back office equipment.

For instance, access and usage policies can be enforced for WiMAX subscribers using existing back office infrastructure. For example, operators who already have Authentication Authorization and Accounting (AAA) servers can reuse them to enforce policy for WiMAX subscribers. For these reasons, it is important for network operators to choose WiMAX platforms and integration solutions that provide them the flexibility to integrate WiMAX as seamlessly and cost effectively as possible into their back office systems. A wireless integration platform that enables flexible authentication methods for casual and trusted users, subscriber management, and back end services is essential for providing a high quality user experience.

The platform works hand in hand with the policy server, which provides necessary portal management. For instance,

when a user turns on a laptop that has WiFi, a portal pops up that allows the user or the device to look for available public networks. An existing customer may not see a portal at this juncture because he has already purchased service from the operator and the device has already been authorized and authenticated for the network. However, operators that want to accommodate roamers will need a portal to authenticate and authorize roamers to use their networks.

Applications

At the end of the day, WiMAX implies all IP-networking. Therefore, network operators that are finding VoIP to be too challenging to implement on their cellular networks can offer it on their WiMAX networks more easily. Cellular networks are more asymmetrical in terms of available bandwidth, but WiMAX can be implemented symmetrically, which makes it ideal for a full duplex application, such as VoIP.

All-IP also means WiMAX enables seamless interconnectivity with IP multimedia subsystem (IMS) elements, such as content distribution servers. As a result, common content and solutions can be offered for end users, no matter what device or service they use to access their applications. All the network operator needs to have in place are the necessary IMS core elements — CSCF, HSS, Policy Control, Media Gateways — which can be used to enable various multimedia applications over GSM, UMTS, CDMA, and WiMAX networks.

Key Success Factors

In order for WiMAX to succeed in the marketplace, there are key barriers that need to be overcome. First and foremost, the CPEs (customer premises equipment) must be made available in mass quantities at affordable consumer prices. Secondly, harmonizing global spectrum is essential to allow manufacturers to mass produce equipment at low prices and ensure that WiMAX devices work in different geographies. This will provide the technology the economies of scale that are so necessary for its future success. IT

All-IP also means WiMAX enables seamless interconnectivity with IP multimedia subsystem (IMS) elements, such as content distribution servers.

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Offering Premium Services over WiMAX

Like the evolution of voice services, broadband data services are rapidly migrating from a single provider, fixed connection environment to a multiple provider, wireless offering. The promise of wireless broadband is that, regardless of where a subscriber is located or the current capabilities of the incumbent wireline service provider, broadband data services are readily available over the air. One wireless delivery technology that makes this both possible and practical is WiMAX.

Whether due to its sheer bandwidth capabilities or emerging extensions that will add mobility, WiMAX's (define - news - alert) ability to enable premium mobile broadband services is unparalleled. Its underlying media access control (MAC) protocol, borrowed substantively from the cable industry's DOCSIS standard, offers wireless Internet service providers (WISP) the ability to precisely manage the quality of service (QoS) to the individual subscriber and application in real time.

What this means for the subscriber is nearly flawless delivery of IP data. For the WISP, it means the ability to offer high quality, revenue generating applications, such as voice over IP, streaming video, gaming, and commercial services. The manner in which QoS can be dynamically allocated in WiMAX networks, thereby providing a template for reference applications that can be deployed by WISPs, is discussed below.

Technology

WiMAX's MAC layer includes a traffic scheduler that is primarily responsible for queuing both upstream and downstream data flows by shaping the IP flows at the MAC layer with firmware located in the base station. Previous broadband wireless technologies offered only coarse prioritization capabilities. WiMAX, however, based on the core IEEE 802.16 standard, offers a menu of QoS management techniques that are available for applications to request parameterized QoS, defined by precise allocation of bandwidth, latency, and jitter to each specific service flow. Within this framework, external network elements, acting on behalf of applications and service provider policies, can direct the traffic scheduler in the base station regarding how to shape the traffic.

For VoIP, this means that the CODEC-specific bandwidth can be scheduled with a latency that minimizes dropped packets. For real-time, high resolution streaming video, the bandwidth can be temporarily and dynamically increased — beyond the WISP's statically provisioned values.

While WiMAX service providers can statically provision their access networks and provide best-effort treatment to most IP data, QoS policy management technology offers them the unique ability to intelligently manage their network and become a "Smart RAN."

By managing the data flow specific to each application and/or content, WISPs can differentiate their own walled garden services from those of third-party content providers, such as Vonage or Google. Leveraging this capability, a WISP not only gains the ability to further monetize the value of its underlying

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By Jay Malin

capital investment, but it also becomes a mission-critical partner, particularly to its business customers. Quality of service policy management is an essential ingredient in order for WISPs to offer service level agreements to its most demanding, and often highest margin, customers.

Architecture

The IEEE has specified how QoS is scheduled at the MAC layer and is currently being expanded by the WiMAX Forum to specify the architecture for delivering new services. Included in the emerging WiMAX standards is the ability to dynamically request premium delivery from the base station on behalf of applications and subscribers authorized by the WISP. While the standards are not yet complete, the WiMAX Forum already has incorporated many of the concepts associated with the IP Multimedia Subsystem (IMS), a service delivery framework standardized by 3GPP. This framework specifies a common functional platform for next-generation converged multimedia services.

The policy decision function (PDF) is responsible for dynamically allocating network resources on behalf of premium delivery walled garden services, whether voice, video, or gaming. The PDF, combined with the intelligent edge SIP proxy, otherwise called the P-CSCF (call session control function), reserves and commits resources when a call is initiated (or received) by the WISP subscriber.

When the call goes off-hook, the SIP message is processed by the P-CSCF, which authorizes the call by verifying the subscriber in the subscriber database (known as the HSS). It then requests the network resources required for the specific CODEC from the PDF. The PDF can admit or deny a request for quality of service depending on whether the network resources are available over the subscriber-specific RAN, and on the WISP usage policies. If the VoIP service is charged incrementally, as opposed to a flat fee, the PDF generates a RADIUS event message to a billing system. It further maps the IMS core to a multitude of base stations, thereby allowing the service provider to centrally locate its policy management and, in particular, coordinate its network policies with other network elements and even access network types.

In addition to SIP-based communications, this architecture can support premium delivery legacy desktop applications, such as peer-to-peer PC gaming, file transfers, and VoIP. While centrally hosted application servers can dynamically request bandwidth for the duration of an authorized user's session, peer-to-peer or third-party applications can use a Client Smart Agent, similar to an IMS SIP Client, to monitor application network usage and signal for quality of service on behalf of authorized applications. The Agent is authenticated and authorized by either the P-CSCF or a discreet application function, which performs similar functionality in concert with a specific application's resource requirements.

By adopting a best-of-breed IMS

architecture for WiMAX, service providers can confidently start deploying new, premium delivery services today with an eye on the future. For example, toll quality SIP-based VoIP can be deployed with a PDF, SIP proxy, and/or session border controller (SBC), feature server, and media gateway, in addition to a WiMAX compatible base station. Once the service provider has comfortably deployed its voice service, additional services can be supported, such as video, PC games, and commercial services. This requires gracefully adding additional application and feature services to the aforementioned core network elements.

Because the PDF plays the crucial role of applying service provider policies to the performance of applications over the RAN, it must incorporate a rich rule set that accounts for application types, base station capability, and business logic. In addition, it should be capable of maintaining ongoing sessions (called statefulness) in case of system failures and emergency preemption.

Conclusion

While many competing access network technologies claim quality of service capability, none are nearly as robust as the 802.16-2000 specification in combination with the WiMAX architecture. By intelligently managing the RAN, WISPs can not only maximize the value of their capital investments, but reduce their operational expenses with carefully coordinated network management policies.

True WiMAX service providers are uniquely positioned to not only maximize subscriber satisfaction in the face of enormous competition, but also to gain incremental revenues associated with differentiated services. To do this, they must implement a centralized approach to policy management that coordinates the performance and functionality of applications that include VoIP, video, and whatever the future may bring. IT

By adopting a best-of-breed IMS architecture for WiMAX, service providers can confidently start deploying new, premium delivery services today with an eye on the future.

Jay Malin, PhD., is VP of Business Development for CableMatrix, (news-alert) a leading provider of Quality of Service (QoS) policy management solutions for the broadband industry. For more information, please visit the company online at http://www.cablematrix.com.

Guerilla Financing for VoIP Companies

When you read the news that Skype was bought by eBay (quote - news - alert) for $2.6 Billion+ and Vonage's IPO was expected to raise at least $250 Million, you may think twice about the value of a VoIP company. You should ask yourself, is there not a way to participate in this gold rush for Internet telephony?

Vonage stated in its prospectus: "We are pursuing growth rather than profitability" and "While this strategy will have the effect of delaying or preventing us from generating net income in the near term, we believe that our focus on growth will better position us as a strong competitor in the long term." It looks like all you need is growth, not profit, to attract investors.

So, you may consider it's not such a bad idea at all to get financing and grow your customer base. Whether you believe in an exit strategy à la Skype (news - alert) or share the dot.com dream of Vonage (quote - news - alert) that marketing dollars will return tenfold, you need money to expand your business.

There are many different variants of running a VoIP operation, but the crucial question remains in each: how to spend the initial capital wisely. I'll walk you through different scenarios providing the ammunition that best fits your unique business plan. We will first discuss the different components to provide the service, then evaluate different finance models.

To offer VoIP, you may need a sales team, a Web site, a server to run the softswitch, connection to telcos for call termination, a VoIP platform and billing system, and last, but not least, technicians and customer support.

Why would I need to invest in a VoIP platform, as there are numerous companies that provide free hosting services?

The answer depends on what you plan to achieve as a service provider. Let's assume you first want to test the service and also the capability to build a distribution channel. Then, you may be well advised to invest in a compelling Web site and customer support rather than on a softswitch technician and learning how to customize the VoIP platform. There are more than a hundred companies in the United States alone providing VoIP (define - news - alert) and searching for resellers, so you should be able finding the right match for your business plan.

Choose a provider that charges you on a per minute base rather than simply offering discounted calling plans. Keeping the breakage will not only increase your profit margin but, more importantly, per minute billing allows you to fine tune your own offering. When you are targeting Latin Americans, your "unlimited" plan may carry much more traffic than a similar offering to call Eastern Europe.

Check the A-Z list of your service provider for competitive rates to your targeted destinations, breakouts, and countries. Be aware that there is an important difference between wholesale and retail rates.

Besides competitive rates, you need a flexible billing system that allows you to customize calling plans, that alerts you if customers exceed their credit limit or the average call time (residential versus business customer), and that sets off an alarm if a calling plan does not achieve expected margins.

Whether you run your own software or use a hosted solution depends not only on the complexity of your call plans, but also on your experience in taking advantage of the variety of available options.

There are providers that allow you to test their platform before you purchase it, either hosted by the provider or operated by yourself. Owning your VoIP platform and an integrated billing system makes sense if you want to customize it, exceeding the generally supported level, and — most importantly — if this proprietary platform increases the value of your company. Both Vonage and Skype are running proprietary software and claim it is the base for their success.

Why would I own a softswitch to be hosted at my service provider?

Each Telco offers a unique A-Z list that is based on the company's connection to Tier 1 or Tier 2 carriers, each with its own assumptions on which markets to price higher while still remaining competitive. When you own a softswitch you can choose your own carrier that offers you the most competitive rates.

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By Klaus Scholz

As I alluded to previously, there is a fundamental difference between wholesale and retail rates. Let's assume your wholesale carrier has six routes to Guadalajara and you buy at a given price. Your carrier, then, may either terminate the traffic through the first three routes, where he achieves a certain margin or returns the call as undeliverable to you. If you are based on a retail LCR, the call should be connected, although the carrier may not achieve the desired margin, at the sixth route. The difference between a wholesale and retail LCR should not only be the price and call quality, but also the ASR, or call completion rate, provided by this carrier.

Choosing your carriers yourself and taking advantage of lower rates should pay for the cost of the softswitch once a certain traffic volume is reached. GlobalNet, for example offers three different A-Z lists, dependent upon whether the partner owns and operates the switch, whether the company hosts the switch owned by the partner, or whether GlobalNet owns and operates the softswitch. If the company does not need to blend in other services, like a managed billing system, and just provides termination, you should, obviously, get the lowest rates.

How can I get financing?

You could approach the capital markets through an IPO or raise money by listing the company through a reverse merger on one of the stock exchanges. You could take your business plan, with all its competitive advantages and proof of forming a successful VoIP company already for the third time, to a Venture Capitalist. Or, you could ask your lawyer to introduce you to an Angel, specialized in high risk, high tech adventures.

After many months and several expensive trips to Wall Street, you may come back arguing that the telecom industry is not longer the preferred playing field for investors and that they would rather focus on investments in nanotechnology, not Internet telephony.

That may be the time to change your strategy and consider guerilla financing. Instead of asking outsiders to finance your VoIP operation, you can seek funding within the industry.

Approach your service provider not only to sell you minutes, provide you a with a billing solution and a back office system, but also to share the opportunity of selling VoIP as a minority shareholder. Make the case that participating in your company and targeting a certain market will add value to its business by increasing its customer base. Rather than handing you over to a competitor that is more flexible and might take the risk and invest in your business plan, your carrier should evaluate the gain by acquiring new markets for its services.

GlobalNet, one of the VoIP platform and network service providers in the market, provides a three-stage plan in offering a partner the opportunity to finance GlobalNet's VoIP platform and billing system, the server and softswitch, and a maintenance contract to support and upgrade the software.

In cooperation with Emergent Networks, which offers its Entice line of softswitches, GlobalNet offers a complete solution for less than $100,000 that can be financed in exchange for a minority position in the company. GlobalNet asks for a business plan outlining the competitive advantage, the marketing strategy, and the distribution channel.

The partner provides the working capital and has the option to operate the system or co-locate it at the Houston Technical Center of Level 3 under a GlobalNet maintenance contract. The company also provides a redundant system based either on its own softswitch or an independent system.

The VoIP provider has the option to own the system hosted, operated, and financed by GlobalNet or to run it based on its own resources. In any case, the provider gains the freedom to decide which carriers to choose for termination. It will take that decision and use it to its advantage to get the lowest possible rates in the market without paying a carrier that marks up rates to finance its VoIP platform. The provider may also get its own direct routes and connect direct to them.

Owning your VoIP platform and an integrated billing system makes sense if this proprietary platform increases the value of your company.

What are the advantages of being a facility-based VoIP service provider instead of just focusing on sales as a traditional reseller?

Owning your VoIP platform and softswitch means not only lower rates but increases the value of your company and the range of services you are able to provide.

Running your own system allows you to offer other resellers hosting for their billing system and providing front and back office services for them. In the ever-changing world of VoIP licensing regulations, in many countries, you gain the pole position owning your platform. Whether you team up with an existing license holder or acquire your own, your company stands to gain a much stronger market position than a sole VoIP reseller.

Whether you opt for a hosted solution or operate the system by yourself, you should own your destiny. Partnering with a company that runs its platform for many different resellers allows you to take advantage of its experience without the financial exposure of owning and operating a softswitch.

Whether you seek to expand your business into other markets or are determining an exit strategy — like acquisition or merger — margins may well determine your fate.

One of the crucial questions each entrepreneur has to answer initially is how much money or margin is needed to finance marketing. Depending on your growth strategy, owning a system, but hosting it at a partner may become a reasonable option to stay competitive. IT

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United Against Spam:

Subscribers and Providers Collaborate to Secure Messaging

First came dreaded digital virus outbreaks that brought networks to their knees for the sheer, twisted thrill of it. Then "spam" emerged, commandeering email for slightly nobler capitalistic purposes, like blast mailing offers for everything from mortgages to diet pills and mail order… well, you get the idea.

Subsequently, marketing and maliciousness have merged, giving rise to "phishing." This latest permutation elevates junk mail to the realm of the illegal. Phishers pose as our email and ecommerce providers, our banks and credit card companies, and other trusted vendors, prompting us to enter guarded personal information for falsified purposes, like keeping our account info current. Perhaps surprisingly, even seasoned email users still open the occasional attachment from a total stranger and fall victim to these newer, more convincing phishing frauds.

Collectively, phishing, spam, and ever more deadly viruses have users looking to IT departments for solutions, and IT departments looking to service providers, and service providers looking — here's the twist — back to users. Annoying, costly, and criminal to all concerned, messaging abuse is driving service providers and subscribers to collaboration like never before. A revolutionary concept, and one in which a few details remain to be hammered out.

This article overviews the overt and hidden costs incurred through messaging abuse, baseline principles for defending against it, and the newest threats on the horizon. Without becoming victims, end users can, by adopting aggressive strategies for battling malevolent messages, ultimately restore the sanctity of email. They can also deliver substantial savings — in dollars, days, disputes and, for service providers, subscriber desertion.

Whose Problem Is It Anyway?

Any email power user can attest to having lost time separating the wheat from the chaff (i.e., sifting through unsolicited newsletters, product promos, chain letters to identify legitimate communication). Now, however, the sheer volume of actual spam, along with the emergence of phishing with potentially devastating legal and financial consequences, has propelled messaging security to the top of many companies' priority lists and to their service provider wish lists.

Service providers are doubly motivated. Besides customer satisfaction, the inspiration for many infrastructure investments, messaging abuse is appealing to providers' other perennial concern: cutting costs. In a way, the two are closely tied, since a customer support call to help a subscriber retrieve an email that should have not been detained could cost providers a staggering $10-15.

But support aside, providers are grappling with the exorbitant costs of maintaining most anti-spam systems, including, CPU costs, additional servers to move messages at IM-like speed, and wasted storage space consumed by detained spam. The latter alone can drain a Tier 1 or 2 provider's budget by $1M or more each year: At a time when 85-95% of all messaging is spam, inefficient filtering is allowing about 50% of junk to get through and fill message stores, wasting 15-30% of storage space.

What's more, the intensive processing requirements of legacy filtering systems are, in turn, requiring ever greater investment in those systems. Unnecessary weight on mail transport units, inbound and outbound, further increases customer frustration with delayed mail, or increases expenditures as service providers seek to exacerbate that frustration with even more spend on equipment. An untold and unnecessary investment in waste ensues.

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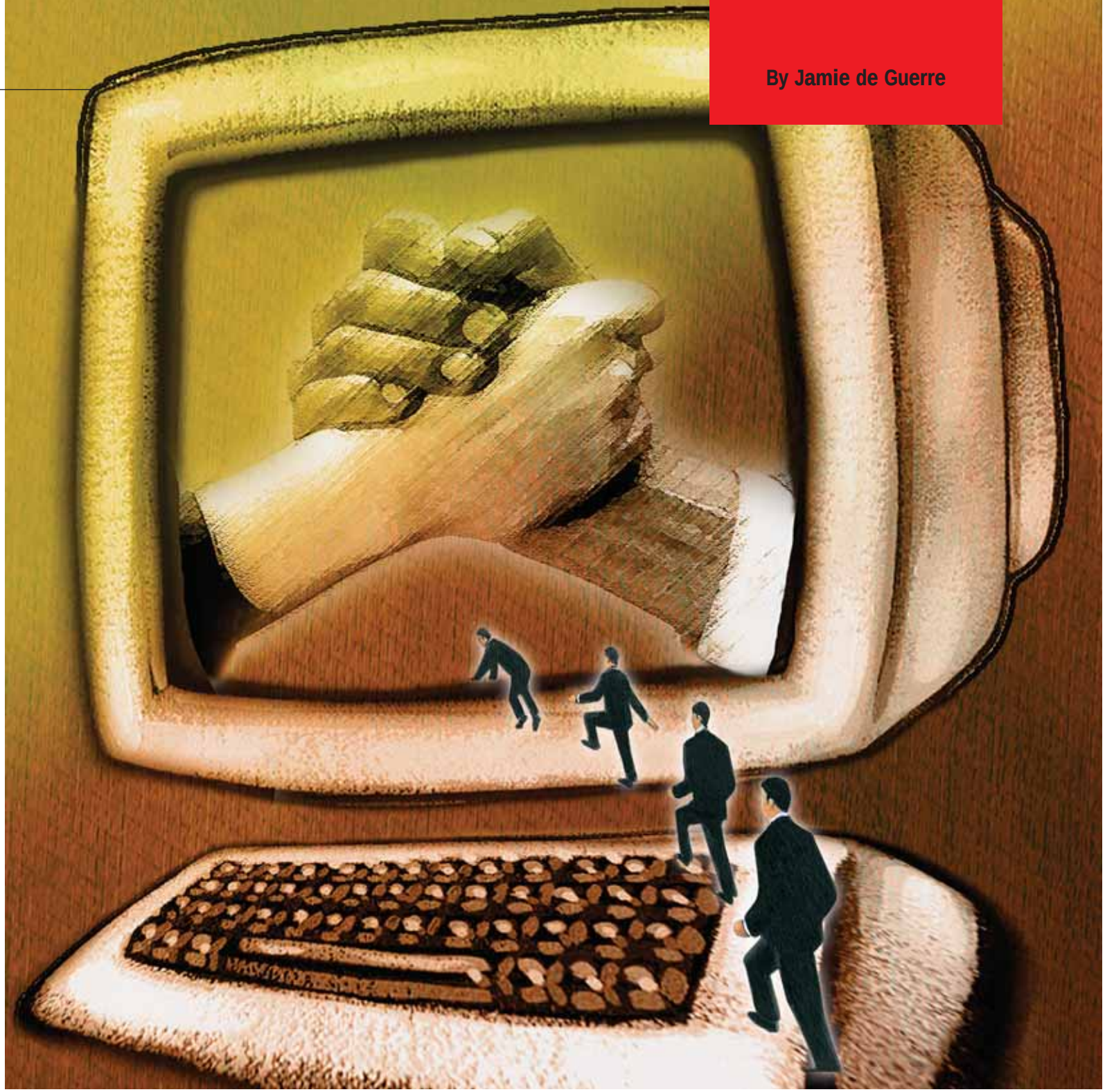

By Jamie de Guerre

The combined reality of losing customers and losing money has providers moving quickly. Many are introducing separate anti-spam and anti-phishing solutions alongside existing anti-virus solutions that address these newer threats, but do so inadequately. Many are paying closer attention to users reporting email abuse, or becoming part of global detection communities, such as Cloudmark's Collaborative Security Network. Working more closely with customers conveys a spirit of teamwork that bolsters loyalty and, on the more practical side, leads to infinitely more rapid and accurate detection of new threats. The alternative — teams of analysts scrutinizing messages for clues, writing and testing new rules, and creating ever-growing repositories of lists and definitions that must be checked against every message — delays the process and, with the gathering speed at which they morph, misses them altogether.

Emerging Threats: Fortifying the Front Lines

Time is, quite literally, money. Depending on the type of threat, every hour that passes can translate into exponentially more people receiving an unchecked bad message. In the case of viruses, rapid detection can mean the difference between thousands of networks worldwide being down for a day and never receiving the virus at all.

Time lapses also make a huge differ-

Rapid, effective processing of messages can squelch attacks in minutes versus hours, days, or even weeks.

ence in catching the "bad guys." Phishing, which contains an inherently criminal element, generally involves collecting information via temporary URLs or IP addresses that remain in effect only long enough to collect information, but are destroyed quickly enough avoid traceability. Reporting these scams early on increases odds of pinpointing their origins before sites are destroyed and protecting thousands of subscribers from personal loss.

During the past 18 months, collaboration has evolved messaging security beyond playing "catch up" with virus, spam, and phishing attacks into focused front lines of defense that disarm and dissect emerging threats in real time. The key to successful collaboration is twofold.

First, the credibility of those flagging and forwarding emails for review and processing must be maintained and ensured. Second, once a message arouses suspicion, the process of evaluating and stopping it in its tracks must be intuitive, automated and, most importantly, fast. The power users that make up Cloudmark's highest rated (top 10%) reporters can spot a bad message more quickly than any machine, click "report," and instantly shoot it back through the feedback system, where it is compared and confirmed by reports from other highly trusted (and continuously rated) users, then "fingerprinted" via a unique algorithmic process. These fingerprints are then proliferated out to the entire global system minute by minute to prevent bad messages and their morphed brethren from ever reaching other members of the collaborative network... around the globe, in any language, within moments of initial identification. Rapid, effective processing of messages identified by proven reporters can squelch attacks in minutes versus hours, days, or even weeks.

Staying in Front of the Curve

Striking the optimal balance between human intervention and technological automation is an ongoing process that will continue to morph and sometimes, if users and providers are fortunate, will remain a step ahead of new messaging threats. For the foreseeable future, key challenges remain.

VoIP-based threats: The use of VoIP (define - news - alert) has historically progressed from the inside out, saving money on the public backbone or infrastructure, then in corporate VPNs, and, finally, desktop phones and other messaging devices. The same is occurring with phishing, as those launching attacks are impersonating financial institutions asking people to dial into VoIP-based PBX and IVR systems that prompt them for personal info. IP reduces overhead costs and makes it easier to generate and delete fraudulent phone numbers.

Early detection is key, as well as having a system flexible enough not to have to require detaining all messages containing phone numbers. Awareness also goes a long way; providers and subscribers should share tips such as verifying the phone numbers in suspect emails against those printed on ATM cards and bank statements.

Mobile messaging security: Users of cell phones and other wireless platforms find the idea of receiving spam on their mobile devices particularly distasteful. First, it's a new violation of our privacy that we're not desensitized to yet. Worse, many users pay per message rates rather than subscribing to unlimited email plans. Mobile spam and phishing attacks are destined to spike in number and related costs. The provider that offers the same "spot-report-block" capability for mobile threats with additional methods for users to report spam from their mobiles will keep subscribers from straying in large numbers.

Moving the needle: A key issue from core to customer is the lack of metrics available to both users and service provider execs. Providers may be doing a great job blocking spam and phishing, but receive no credit for it because they lack the means to track and inform users of how many threats have been thwarted. On the flip side, service provider executives have insufficient means of assessing the costs of downtime, customer service, processing power, and, perhaps worst of all, restoring "false positives," or the emails that shouldn't be held up.

A service provider-branded graphical user interface enables subscribers to easily view the number of "bad" messages stopped by the global threat network, the service provider's network specifically, and even by the user. Cloudmark research and support teams have noted a fascinating sociological phenomenon, whereby subscribers are anxious to participate in "stopping the bad guys"... a function of the "zap 'em" mentality of now three generations of digital gamers?

Perhaps for the first time, the experience of collaborating, communicating, and congratulating one another will profoundly change the way providers and customers interact. Long term, a growing sense of team spirit may prove to be an invaluable silver lining behind the cloud of messaging abuse for ISPs, wireless, cable, and telephony providers. Short term, however, it will be an area of change, investment, and learning.

Thankfully, providers seem to be uniquely proactive. It would be great if the concerted effort being waged by service providers and subscribers made spam, phishing, and viruses so unprofitable that they all but disappear. That, however, is unlikely, since, as technology progresses to benefit legitimate business, so, too, will it benefit phishers. The key is investment in systems that spot and stop messaging threats as quickly as possible. IT

Jamie de Guerre is Technical Director, Program Management at Cloudmark (news - alert) and a recognized expert in messaging security technologies. For more information please visit the company online at http://www.cloudmark.com.

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The Benefits of a Converged Enterprise Network Management System

As enterprise networks evolve and become more of a service delivery mechanism for real-time enterprise applications, such as IP telephony, converged network management tools need to lead the way.

In the past, the approach to network management has been predominantly reactive. Network devices (switches, routers, and servers) notified the network operators of an issue with the network; then, the issue with the network was diagnosed and resolved. The amount of time associated with diagnosing and resolving the issue ranged from minutes to hours, or even longer. Reducing the amount of downtime is crucial to enterprises, especially in light of the emphasis on real-time applications today. The inability to quickly diagnose voice-related problems on the network can have far reaching implications that impact internal communications and, more importantly, external customer contact and communications.

With the IETF Internet draft Real-Time Control Protocol — Extended Reports (RTCP-XR), if call quality of an in-progress call falls below a defined threshold, the network operator is immediately, and automatically, notified of the loss of call quality. This relieves the extended amount of time required to resolve the issue, which keeps networks running more efficiently. It is imperative that next generation network management applications be able to deliver a truly converged view of the network in order to allow enterprises to quickly diagnose issues related to real-time voice applications to minimize downtime and customer impact.

A converged view provides an end-to-end view of the network. This view (also called the physical view) includes the VoIP (define - news - alert) system components, IP Phones, the data infrastructure (switches, routers, subnets), as well as the physical connectivity between the devices. The status monitoring of devices continues to the converged view of the network. For the first time, the network operator has a complete view of the converged network and the interconnectivity associated with the devices. With a color coded device, status alarm devices in error can be quickly identified and the impact of the error determined, such as the failure of a router and how this would affect the VoIP calls within a given subnet.

Converged networks require the network infrastructure and its overlaid services (VoIP) to be monitored proactively, in a way that identifies issues with the VoIP call quality. An Enterprise Network Management System (ENMS) delivers functionality to monitor all in-progress VoIP calls and receive real-time information from the IP telephony solution on call quality using standards-based technology. ENMS provides enterprises with the ability to have a true end-to-end view of the converged network. ENMS is able to discover and monitor data infrastructure and VoIP system components (call servers, signaling servers, and gateways, as well as the VoIP endpoints).

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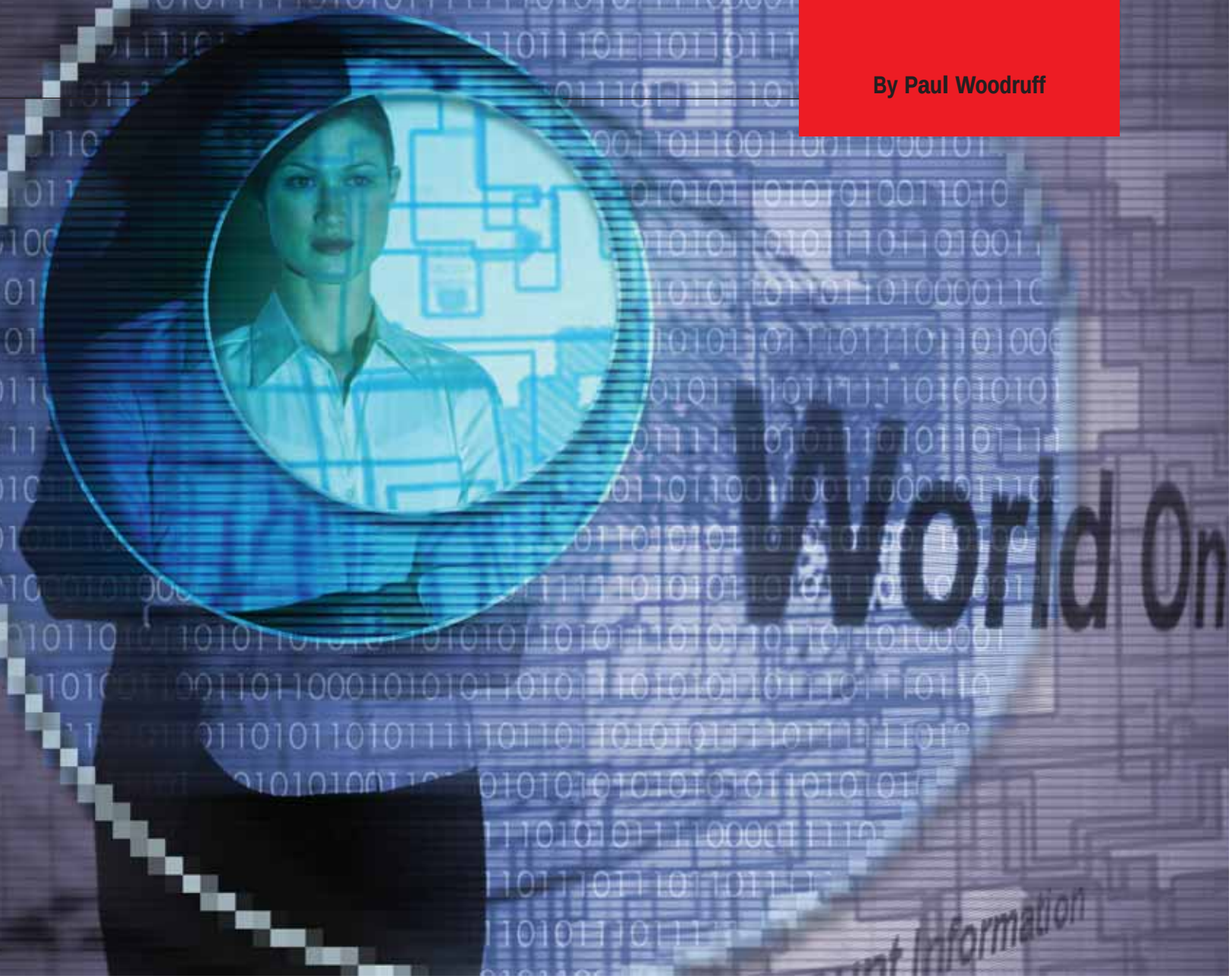

By Paul Woodruff

In the near future, enterprises of all sizes will be expanding IP telephony deployments.

The rate of evolution, and whether this evolution begins in the WAN or the LAN, will vary from enterprise to enterprise, as will the acceptance of the technology and the degree to which applications are integrated. But, the net result is the same: what we traditionally think of as separate voice and data networks will be comverged and run over a single IP infrastructure.

Even though voice is sometimes characterized as "just another application," the fundamental aspects of voice conversations place requirements on the network that are quite different from data applications. These requirements boil down to providing toll quality voice, which is measured in terms of clarity and loss.

Users assume that voice quality over an IP network will be as good as traditional voice. Another assumption is that IP telephony works well on network transport infrastructures designed for low latency and high reliability. However, IP telephony deployed over a poorly designed network results in poor voice quality. Making IP telephony work goes beyond tuning the data network infrastructure. For instance, the appropriate voice coder/decoder (codec) must be chosen for converting analog voice to digital voice.

While the days of assuming that IP telephony is synonymous with poor quality are gone, it remains incumbent upon the VoIP service and technology providers to convince potential users of its high voice quality. This, of course, is in stark contrast to traditional voice networks, where basic quality is assumed and there is no requirement for proactive voice quality monitoring.

Real proof of quality is quantitative and, to address this need, new capabilities, called Proactive Voice Quality Monitoring (PVQM) tools are being developed. These tools allow accurate measurement of voice quality at the IP client, providing continuous passive monitoring to ensure satisfied users of IP telephony solutions. PVQM goes far beyond the capabilities of traditional voice networks, providing a call-by-call analysis that alerts network management personnel to potential trouble spots before users are even aware that a problem exists. Because PVQM monitors call quality from the IP client itself, it provides true end-to-end quality assessment.

PVQM also has an active monitoring component to enable predictive analysis of potential degradation in voice quality. Potential problems can be addressed before users experience any actual call quality problems. Linking voice quality management with infrastructure management further simplifies the troubleshooting and diagnostic tasks associated with maintaining toll quality voice services. These PVQM capabilities provide the tools to take voice quality management beyond traditional telephony to a level that will become the norm for next generation voice networks.

The business implications for PVQM are tremendous. On one level, this capability removes a major barrier to IP telephony implementations by answering the question whether IP telephony sounds good, literally. More importantly, PVQM actually provides the enabling technology and metrics to include voice quality as a key parameter in a service level agreement (SLA), whether the corporate telecommunications department offers an SLA to internal users, or a service provider offers an SLA to external customers.

IP telephony is quickly growing in popularity because of the tactical and strategic advantages it brings to enterprise networks. From the tactical perspective, operations costs are contained and toll bypass can provide significant cost savings. More importantly, from a strategic perspective, IP telephony is an enabling technology that facilitates better customer relations and more productive employees via applications like collaborative computing, next-generation contact centers, and integrated messaging.

Nevertheless, in some circles, the willingness to move to this technology is stifled by concerns about voice quality. While the community of people who believe that IP telephony quality is good continues to grow, the "show me" concerns must still be met. Which is exactly what PVQM does.

What's more, PVQM goes beyond addressing this objection. It doesn't just

Wireless: The Higher Bandwidth Alternative

By Jim Hong

In the highly competitive telecommunications arena that exists today, Internet service providers (ISPs) and telecom companies are continually expanding their reach and offering more services to stay afloat and thrive. Demand for higher bandwidth applications, such as VoIP, streaming video, and video conferencing is increasing and service providers are scrambling to equip their networks with the proper infrastructure to meet this demand. In an effort to expand their networks reliably and efficiently without compromising existing service, many providers are turning to wireless as a viable alternative — especially across spaces that are too difficult or too expensive to bridge with wires. Whether the requirement is to migrate from an analog to a digital network, communicate between buildings, link networks in a campus setting, or provide services to a rural or developing community, service providers are increasingly turning to broadband wireless for its ease of use, economic feasibility and adaptability for further expansion.

Traditionally, service providers have relied on leased lines to handle an increase in IP traffic. Now, many are choosing to handle traffic with microwave rather than laying new cables or incur expensive monthly lease charges. In another interesting move, they have decided to encode their microwave transmissions as IP data streams rather than convert to an analog circuit switch just to cover an air gap. This decision to switch to IP traffic end-to-end offers several clear cut advantages, such as reduced infrastructure complexities, lower equipment costs, higher throughput, and greater ability to overcome path obstructions.

Wireless Ethernet, in particular, offers providers multi-megabit speeds with significantly better performance than the T1 switch circuit networks. In addition, wireless bridges offer unique and powerful technologies to overcome the signal attenuation, fading, dispersion, and polarization that degrade all radio signals. Examples of these technologies include:

- *Multi-Beam Space-Time Coding* — Minimizes signal fading caused by path obstructions or atmospheric disturbances.
- *Advanced Spectrum Management with i-DFS (Intelligent Dynamic Frequency Selection)* — Self-selects the frequency over which it can sustain the highest data rate at the highest availability.
- *Adaptive Modulation* — Continually optimizes modulation to transmit the maximum amount of data across the path while maintaining the highest levels of link quality.
- *Spatial Diversity* — Combats ducting and multipath fading via space-diverse antennas at one or both ends of a link.

While the benefits to the service provider are clear, it is also important to note that the customer wins, too. By integrating a wireless network into existing infrastructures, providers can offer customers with an even higher level of service they have come to expect. Wireless links are extremely reliable, working 99.999 percent of the time and at higher speeds — a key benefit customers

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Service providers cannot lose sight of the importance of maintaining excellent customer service.

will gladly pay extra for. In addition, higher bandwidth networks enable the service provider to offer its customers premium service packages that include VoIP and other sophisticated multimedia applications.

This rapidly developing technology of point-to-point broadband wireless can give providers both new service opportunities as well as a growing revenue stream. However, while the rush is on to switch from traditional networks to broadband wireless, careful planning must take place. Service providers cannot lose sight of the importance of maintaining excellent customer service. Avoiding unplanned interruptions, providing dependable connections in even the most challenging environments and anticipating the growth of their network, in part created by an increase in IP traffic, is crucial. In a process known as 'path planning,' it is imperative to follow the steps leading up to the placement of the wireless hardware (e.g., software-defined radios) to ensure their accuracy and reliability.

Successful path planning starts with the right tools. A good software program that enables tracking latitudinal and longitudinal points is an essential component of this process. Ideally, each architect or engineer involved in the path planning process will visit each site where the Ethernet links will be installed to collect GPS waypoints. In addition, this onsite visit will ensure that the planners capture additional and important details such as obstructions and interference sources. Once this data is collected, it can be entered into this online path profiler software that will enable an accurate and reliable viewpoint of the optimal placement of the radios. When used in conjunction with a service such as Google Earth (which visually pinpoints a certain location), the user should already have enough information to confirm the specific location for the radios. All that is needed at this point is adjustments of antenna heights and sizes, to account for any obstructions that may be in the Ethernet link's path. This comprehensive path planning process allows for incredibly accurate modeling for desired throughput and link availability.

Economy, reliability, availability, security, and performance of a service provider's network are the fundamental factors that will mean the difference between staying ahead of the competition or lagging behind it. The wide array of wireless network solutions available to providers today, and the rapid adoption of these technologies reflect a significant paradigm shift that will continue to shape the industry now and in the future. IT

level the playing field; it changes the rules of the game by demonstrating that IP telephony call quality is both quantifiable and actionable. By passively monitoring call quality, potential trouble spots are identified and can be corrected before users notice a problem.

This takes voice service delivery to the next level. IP telephony is not only demonstrated to be as good as traditional voice, but the capability for guaranteeing quality is taken to the next level. PVQM not only removes a barrier for IP telephony deployment, it clears the way for enterprises to move full speed ahead with converged networks for the 21st century.

Converged networks enable the network operator to quickly trace the route of the active call and view all devices, making their status, fault, and performance information readily available in a single console. This provides, and enables, a single point of contact for an enterprise to manage its converged network with all necessary tools and data on hand to quickly identify and resolve issues.

As VoIP deployments reach critical mass, the requirements for maintaining voice quality become essential to the end user's Quality of Experience. ENMS proactively monitors voice calls and offers the ability to quickly identify quality issues in real-time. The tools embedded in ENMS allow organizations to quickly react to quality issues as well as identify the source of the issue, allowing corrective action to be taken, resulting in a decrease of time-to-resolution and improved operational efficiency of the organization. IT

Paul Woodruff is General Manager of the Enterprise Network and Service Management business unit within Nortel. (quote - news - alert) For more information, please visit the company at http://www.nortel.com.

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Taking the Risk Out of VoIP:

Best Practices for Convergence Success

The benefits of convergence — including reduction of telecom costs, the advantages of managing of one network instead of two, and greatly simplified provisioning of services to remote locations — are so compelling that most companies can't afford not to deploy VoIP. At the same time, however, it's essential to ensure that implementation of a converged environment doesn't jeopardize either voice services or other business critical IT applications.

That's why companies pursuing the benefits of VoIP (define - news - alert) must take steps to ensure that their converged networks deliver target performance levels and continuous availability of both voice and data services. Several factors make it particularly challenging to ensure end-to-end service levels in converged environments.

- The complexity of converged network infrastructure;
- The significant differences in the way the diverse applications running in the converged environment, including legacy software, Web services, and VoIP, tolerate network impairments;
- Limitations in the IT organization's ability to measure, analyze, and/or predict the end user's quality of experience with each of these applications; and
- Limited resources with which to plan, build, and manage the environment.

One of the best ways to overcome these challenges is to leverage virtual network test bed technology. With a virtual network test bed, IT organizations can carefully assess their environment's VoIP readiness before blindly embarking on a network upgrade mission. They can also experiment with a variety of remedies for any problems they discover. Equally importantly, such a test bed is invaluable for continuously and proactively safeguarding VoIP and data application performance over time as utilization grows, as new applications are introduced into the production environment, and as the business morphs and expands.

The Virtual Network

Virtual network test beds enable application developers, QA specialists, network managers, and other IT staff to observe and analyze the behavior of network applications in a controlled lab environment that accurately emulates conditions on the current and/or planned production network. Ideally, this emulation should reflect all relevant attributes of the network, including all network links and their impairments (physical distance and associated latency, bandwidth, jitter, packet loss, CIR, QoS/MPLS classification schemes); the number and distribution of end users at each remote location; and application traffic loads.

In addition to allowing technicians to analyze the behavior of critical applications under existing and projected network conditions, a virtual test bed also enables "ears on" assessment of VoIP call quality. In other words, actual phone equipment can be connected to the emulated environment so that technicians and/or end users can experience first-hand what calls will sound like between any two points on the network at any time of day. This kind of real-world acceptance testing greatly reduces the possibility that end users will balk at call quality after huge investments have been made in a VoIP rollout.

Seven best practices for convergence success

The following seven best practices specifically highlight how IT organizations are using virtual network technology to ensure both the success of their initial VoIP implementations and their long-term ability to sustain high service levels, despite the risks associated with data/voice/multimedia convergence.

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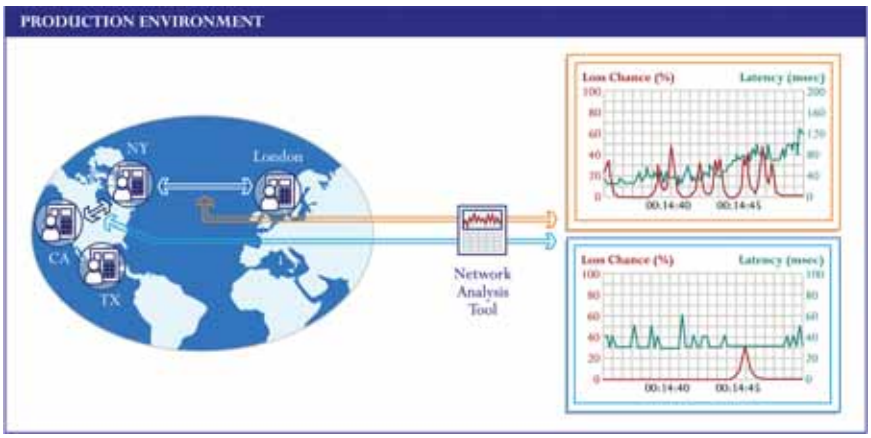
By Amichai Lesser

1. Capture conditions on the network to define best case, average case, and worst case scenarios

Conditions in a test lab can only reflect conditions in the real-world environment if they are based on accurate, empirical input. That's why it's best to "record" conditions on the production network over an extended period of time and then "play back" those conditions in the lab to define best, average, and worst case scenarios. These recorded scenarios will reflect the full range of real-world conditions on the specific network across which the company's applications and services will ultimately have to perform.

2. Use the virtual network to trial VoIP in the lab under those real-world scenarios

Once an accurate set of scenarios have been defined, they can be re-created in the test environment, so that the behavior of VoIP and other applications can be assessed under those all possible environmental conditions. A phone can be associated with each location, so that the quality of calls between any two points can be evaluated under the same conditions as exist on the production network. A call generator can also be added to the virtual network to generate synthetic VoIP traffic and perform regression testing. At the same time, technicians can use PCs to assess to-the-desktop performance of data applications running in the same environment.



3. Analyze call quality with technical metrics

Once VoIP traffic is running in an appropriately defined virtual environment, the team can apply metrics, such as MOS, to determine where voice quality is acceptable and where it is not. Typically, there will be a close correlation between network conditions — such as delay, jitter, and packet loss — and call quality. In fact, given the highly

dynamic nature of today's networks, voice quality may vary substantially during the course of a call.

4. Validate call quality by listening to "live" calls

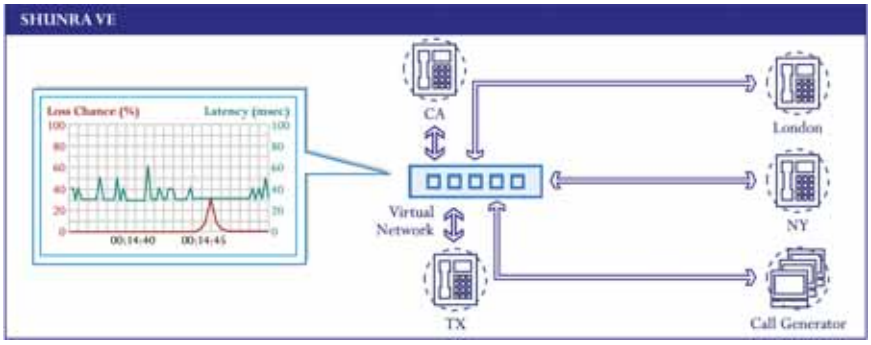
Technical metrics alone can be misleading, since it is the perception of call quality by actual end users that serves as the ultimate test of VoIP success. So, the virtual environment should be used to enable the team to validate first-hand the audio quality on calls between any two points on the network under all projected network conditions. Using a call generator in conjunction with the virtual network, a tester can become the "nth" caller at any location. This information is typically documented on voice mail systems and is included in the call itself to ensure accurate documentation. For example, the tester might say, "Hello. This is a message from the 101st caller from California to Texas under the average case network scenario."

5. Repeat as necessary to assess and validate remedies

Discovering a problem with call quality is one thing; fixing it is another. Often, the obvious answer to a problem — such as adding more bandwidth or resetting DiffServ variables — doesn't actually produce the desired effect. With a virtual environment, however, these various fixes can be tried and tested without disrupting the production network. Better yet, this "try before you buy" approach enables the company to avoid making technology investments that may not, in fact, be necessary. Testing in the virtual environment should, therefore, be an iterative process, so that all quality issues can be fully addressed and the rollout of VoIP in the production environment can be performed with a very high degree of certainty.

6. Bring in end-users for pre-deployment acceptance testing

Voice quality is, ultimately, a highly subjective attribute. That's why many



VoIP implementation teams have found that it is worthwhile to bring in end users for acceptance testing prior to production rollout. This greatly reduces the chance of the dreaded "VoIP mutiny" syndrome, where end users balk at call quality, despite the best efforts of IT and despite the fact that call quality meets common industry standards. Predeployment acceptance testing is particularly important when the financial investments made in VoIP-enabling the network are significant.

7. Continue applying these best practices over time as part of an established change management process

To maintain VoIP quality over time, IT organizations must incorporate these best practices into their change management processes. This is essential for ensuring that changes in the enterprise environment — the addition of new locations, the introduction of a new application onto the network, a planned relocation of staff — will not adversely impact end-to-end VoIP service levels. Such changes can easily affect VoIP performance in totally unexpected ways, so the only safeguard against the interruption of critical voice capabilities is to test call quality under the new projected conditions in the lab using a virtual network.

Cost-justifying the virtual network

Of course, IT organizations face a wide range of investment decisions as they seek to evolve their enterprise computing environments to meet the needs of the business. So, IT organizations that want to acquire virtual network test bed technology in order to support their VoIP implementations need a strong basis for cost-justifying that acquisition.

In general, improvements in VoIP implementation alone can provide ample justification. By accurately assessing the network's VoIP readiness, a virtual network test bed enables IT organizations to predictively discover and proactively remedy any potential problems. A virtual test bed also saves money by validating proposed remedies, thereby avoiding unnecessary purchases of bandwidth or equipment. In addition, project teams can use the virtual network test bed to accurately compare competing vendors' solution and make the smartest buy.

However, such a test bed typically offers many high-ROI uses above and beyond VoIP. These uses include more network-aware software development, more intelligent network capacity planning, improved troubleshooting, and smarter execution of server moves and data center consolidations.

A virtual network testing environment is thus a wise investment both for ensuring the success of convergence initiatives and for the improved performance of IT on the whole. By integrating network emulation into its total technology portfolio, IT can reduce risks, avoid wasteful spending, and bring a new level of predictability to service levels across an ever changing enterprise that depends every day on both voice and data applications. IT

Amichai Lesser is the director of product marketing at Shunra, (news - alert) a pioneer in predicting the behavior of services across today's complex networks. For more information, please visit the company online at http://www.shunra.com.

VoIP MARKETPLACE

CEO Spotlight

Nathan Franzmeier
CEO
Emergent Network Solutions

emergent. NETWORK SOLUTIONS, L.P.
emerging communications

In the CEO Spotlight section of *Internet Telephony®*, we recognize the outstanding work performed by exemplary companies. Each month, we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with Nathan Franzmeier, CEO of Emergent Network Solutions. (news - alert)

GG: What is Emergent's mission?

NF: Emergent desires to be the market leader in providing "emerging network" solutions to the tier 2-3 market, specifically, in the following categories: Network-wide session control — which includes SBC and CSCF (IMS-compliant) solutions — and residential/enterprise broadband solutions — which include our E-REV solution portfolio.

GG: What is your vision for Emergent and how is the company positioned in the next-generation telecom market?

NF: Emergent has been providing "next gen" solutions for the emerging market since it's inception. We believe that the market is converging on the IMS architecture as the accepted strategy for delivering services into networks across the various access topologies (wireline, cable, mobile, WiFi/WiMAX, etc.). We believe, specifically, that the market will be shifting to mobile/wireless devices as the general mechanism for interacting with each other, the network, and the world. Emergent is positioning itself to provide solutions into this market with the view that, while infrastructure components are a requirement, they will be eventually commoditized and the focus will be on delivering application functionality.

GG: Now that it appears that growth and opportunity are the trends in the VoIP industry, what possible hurdles do you see that might upset this momentum?

NF: Obviously, the regulatory environment could have a huge impact, but we don't view this as likely. Another concern is that, as the network matures, we believe there is a move to change the fundamental nature of the network from an essentially blind, benign transport mechanism to one that is not only aware of what is going through it, but either is only grudgingly willing to grant access to certain traffic or is outright antagonistic towards it. As the technology matures to implement a wider scope of network management and control, we don't believe this will be limited to generally agreed upon targets, such as spam.

> I don't think consumers care about the technology. They care only about what can they do easily (applications) and how much it costs.

This will be presented as providing QOS and security for paid subscribers — which it will, but it can also be selectively used against those providers who were just counting on "reliable pipes."

GG: What are some of the technology areas where Emergent is increasingly focusing, and why are these areas important to the future of your company?

NF: As stated earlier, we have shifted our focus to delivering IMS-compliant infrastructure elements — specifically, CSCF, MGC, and SBC functionality. Simultaneously, we are increasing our application portfolio, as we believe we can use our technology (ENTICE) to both build infrastructure and deliver applications into existing infastructures.

GG: Describe your view of the future of the IP telephony industry.

NF: I shared some of this earlier, but I believe that the industry is evolving towards an intelligent network topology, where applications can be delivered on any device on any network. IP appears to be one of the fundamental technologies for realizing this vision, but, ultimately, I don't think consumers care about the technology. They care only about what can they do easily (applications) and how much it costs. Our goal, as a solutions provider, is to harness this technology and make it easy to use and manage for both the service provider and the consumer. IT

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CEO Spotlight

Vijay Kulkarni
CEO
GL Communications Inc.

In the CEO Spotlight section in *Internet Telephony*®, we recognize the outstanding work performed by exemplary companies. Each month we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with Vijay Kulkarni, CEO of GL Communications Inc. (news - alert)

GG: What is GL Communications' Mission?

VK: Our mission is to provide test and measurement equipment capable of analysis and emulation at a detailed and comprehensive level; far greater than that provided by conventional test equipment, and to provide this capability for TDM, VoIP, (define - news - alert) and wireless networks. This is easier said than done for the fast paced telecom industry, where today's technology may be out of date tomorrow. Nevertheless, our mission is to provide test and measurement equipment that is powerful, graphical, visual, yet easy to use.

GG: What is your vision for GL and how is the company positioned in the next generation telecom market?

VK: We have seen telecom technology evolve from Analog to TDM to ATM, to Packet. We have seen access speeds increase from hundreds of bits per second to millions of bits per second, and services undergo a sea change from transporting conventional telephony to high-speed data, video, and content on demand. As a test equipment vendor, we must keep pace with this evolutionary change. Currently, our test equipment portfolio is very strong in Analog and TDM domains. Our VoIP product suite is also very strong. We are making inroads into the ATM domain and will soon be offering product mixes for higher rate interfaces and a full complement of products for 3G networks. Our recently launched protocol analyzers for CDMA, GPRS, and UMTS have met with great success. Also, in the pipeline are products that will address the burgeoning Ethernet carrier market.

Another area that we have traditionally been very strong in is "voice-band and voice quality testing" and "protocol analysis" across TDM, VoIP, and Wireless domains. This continues to be core competency and we intend to extend this to the higher rate interfaces such as OC-3 and GigE.

GG: Now that it appears that growth and opportunity are the trends in the VoIP industry, what possible hurdles do you see that might upset this momentum?

VK: VoIP now has momentum, both mass and velocity. No doubt there are barriers, but these will be overcome in due course. VoIP has had a bumpy ride, primarily because it has been compared or contrasted to the quality and reliability of the traditional telephone network. Most of these issues were and are due to transport over the public Internet and consequent quality problems or due to lack of broadband access. As these growing pains are overcome and broadband access becomes prevalent, VoIP will come into its own, through features such as wideband audio and video and wireless access to VoIP. Users will become addicted to the ease of "instant connectivity" much like the simplicity of calling via mobile phones. This is only a matter of time. Along the way security issues will need to be addressed much like spam and viruses are addressed today. Regulatory and law enforcement issues will also need to be addressed such as E911 and wire tapping.

None of these barriers will stop the VoIP freight train!

GG: What are some of the technology areas where GL is increasingly focusing, and why are these areas important to the future of your company?

VK: IP and wireless are attracting our greatest attention because they are becoming the dominant technologies. We are developing hardware that interfaces at higher access rates such as GigE and OC-n rates. In the IP arena, we have a new product to test IMS features and functions, called SIPGen. We are also introducing video testing capability over IP.

In the wireless domain, we continue to expand on our 3G protocol suite, investing in both hardware and software.

GG: Describe your view of the future of the IP telephony industry.

VK: There is no doubt that IP is the wave of the future, whether on wired or wireless networks. Wired access speeds are increasing to broadband and ultra broadband speeds via DSL, cable, and fiber. Wireless access speeds are also increasing whether they are cellular, 3G, WiFi, WiMAX, or satellite.

Against this backdrop, "killer apps," such as mobility, Web, e-mail, voice, and IM have exploited communications technologies and are changing the way we communicate in our lives. The next "killer app" that will consume the bandwidth that technology has to offer could be gaming, IPTV, streaming video and audio, two-way video, video attachments, or wideband audio. Nobody knows for sure, but IP technology will play a significant and central role.

Another driving factor is the desire for "content on demand" from anywhere and at anytime. To achieve this, users require constant connectivity or instant connectivity. This, in turn will drive ever larger repositories of content. Globalization of these trends will create demand for bandwidth and information on an unprecedented scale. The future is fantastic. IT

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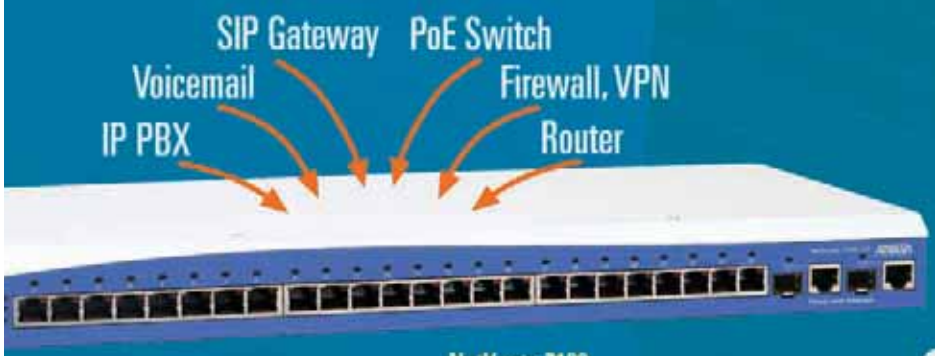

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