LINES

Volume 28 Issue 2	July 2012

STC President's Memo

Jim O'Gorman is the current President of the Society of Telecommunications Consultants. Jim started his consulting career over 40 years ago in the Bell System and held management positions in sales and engineering. He co-founded Communications Engineering in 1988, which is based in the Greater New York metropolitan area and specializes in strategic enterprise telecommunications planning, technology acquisition and project management.

Happy summer greetings to all!

It has been a VERY active year for the Society of Telecommunications Consultants:

Our membership continues to grow with new consultant and vendor advisory council members. We are currently at our highest level of VAC members in years. This is thanks to the relentless efforts of our Past Presidents, Byron Battles and Rick Hathaway, who together send in a half dozen or more leads after each industry conference and the leadership of Chair Denise Munro.

STC influence has reached across the Atlantic with our first European conference this past March, with thanks to Ken Krupp and Agustin Argelich in organizing our joint conference in Barcelona with Ferran Amago Martinez of the Collegi Ofical d'Enginyers Technics de Telecomunicacio Catalunya, Spain.

Our financial outlook has improved dramatically with continued expense management by Cathy Cimaglia and Tom Brannen and new sources of income through VAC sponsorships.

Our new STC web site was also launched this year thanks to Melissa Swartz and her internet team. The site is wonderful and I hope you all use it to 'connect' with each other and provide information about your skills and practices on your profile pages.

Monthly seminars by the Education Committee have had consistently high attendance thanks to Chair Pat Pittmon!

Garrett Myers, along with Wayne Sos, have lead a very enthusiastic Marketing Committee in stimulating more involvement by our less active members and encouraging them to join us at the Baltimore conference.

Our VAC, led by Maggie McAuliffe, has been thoroughly engaged with representatives participating in our various board committee meetings and calls. Chris Vitek has provided the board interface and has helped with the launch of the VAC feedback form which I encourage you to use to help our VAC help us.

LINES, under the editorial guidance of Robert Harris, along with our List Serve, are key examples of why the STC provides the best industry knowledge by the finest group of telecommunications consultants ANYWHERE on the planet!

And of course our Annual Conference in Baltimore, chaired by J.R. Simmons, promises to be an event to remember.

I would like to thank the STC Board of Directors, Cathy Cimaglia and the entire membership for your confidence and support to achieve these accomplishments. It has been a privilege to serve as your President these past two years. I wish you all a safe and happy summer and look forward to seeing you in Baltimore. Kind regards,

Jim

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Welcome New Consultant Members

New Consultant Members

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COMgroup is an independent technology consulting firm providing client services in telecommunications systems planning and communications infrastructure design. Our services include strategic planning, needs analysis, design, RFP creation, weighted evaluations, expense management, data center design, and project management. Our clients range from small single site companies to multi-location international companies.

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STC LINES

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About the STC

The Society of Telecommunications Consultants is an international organization of information and communications technology professionals who serve clients in business, industry, service organizations and government. For over 30 years STC consultants have delivered independent and ethical telecommunications expertise. This objective guidance and support enables clients of STC consultants to benefit from the efficient and effective use of information and communications technologies.

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STC & VAC Boards

Legal and Regulatory Update

By Martha Buyer
Law Offices of Martha Buyer, PLLC

As the STC's Regulatory Attorney, Martha is available to STC consultant members for consultations of up to 15 minutes, at no charge. She can be reached at 716-652-4413, or at martha@marthabuyer.com

Privacy and Wireless
Whole Lotta Shakin Goin On…

The issues associated with individual privacy and telecom which have simmered (relatively) quietly on a back burner are now boiling over front and center as individuals and groups that represent them (read: employers, regulators and litigators) seek to understand their rights and vulnerabilities. At the same time, governmental entities, including Congress, the FCC and the FTC are all seeking a piece of the governing action as advances in wireless technology combined with widespread wireless device deployment challenge not only the status quo, but the limits of privacy law as well.

Right on the tail of some well-publicized action taken by the Federal Trade Commission, the Federal Communications Commission issued a public notice on May 25, 2012 looking for comments on the privacy and data security practices of mobile wireless service providers (see http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-818A1.pdf). Specifically, the FCC was looking for comments on services provided by wireless carriers. The questions, which were primarily directed to wireless providers, included how and to what extent carrier practices affect customer-specific information stored on mobile devices. Additionally, the FCC asked providers to describe their own activities related to the degree of notice and choice offered to customers, how current information storage practices serve the needs of both carriers and customers,

whether current practices create risks or vulnerabilities for data security, and finally how current CPNI (Customer Proprietary Network Information) rules (47 USC 222) apply to customer-specific information. Comments were due no later than July 13th).

> *Simply because BYOD is "the way things are," doesn't relieve an employer—BYOD or not-- from federally mandated—and enforceable--obligations with regard to company-confidential information.*

The notice was prompted by the discovery that wireless providers have been using diagnostic tools to monitor end user device information for ostensibly diagnostic purposes. While carrier claims may be true, the fact that these entities monitor and maintain even some customer-specific information is troubling at best. While privacy issues were a hot topic in 2007 when the Hewlett-Packard pretexting matter came to the fore (unauthorized users were masquerading as others to secure personal information stored in carrier databases), the discovery that carriers were using location-specific and other diagnostic tools (most notably those of Carrier-IQ), raised additional eyebrows and concerns regarding individual privacy in the electronic age.

Mandatory annual certification by carriers with respect to CPNI, including breaches, has been the direct result of the pretexting issue. The interest in CPNI resulted first in a federal rulemaking, followed by some mandatory annual carrier obligations (even for VoIP providers) in the form of certification that confirms compliance. Following the obligations, the FCC was quick to take feisty and expensive enforcement actions to let carriers know that the Commission means business on this issue. This annual carrier certification requests concise information on security and/or other breaches to private carrier-held

information that occurred during the year, and like Sarbanes-Oxley compliance requirements, CPNI certifications require an original signature and acknowledgment by a corporate officer.

This current FCC inquiry is viewed by many as an attempt to maintain a pivotal seat at the table while new and compelling issues of privacy in the context of mobile carriers are discussed. Given that both Congress and the FTC are working on this issue as well, it is hoped that the FCC's interest and participation keep the FCC at the grown ups' table as critical privacy issues are debated and addressed. In addition, the FCC's involvement at the highest levels also ensures that any formal rulemaking or other actions taken that address privacy issues consider the critical tradeoffs between technological innovation and privacy concerns. To thwart technological innovation at the expense of privacy rights in this critical and growing sector of the marketplace is in no one's best interest.

Another Consideration

As BYOD (bring your own device) also becomes the de facto standard that is used to manage wireless devices in the enterprise, members of the opposing teams (end users and enterprise interests) also find themselves with a potential for significant conflict in terms of rights, obligations and responsibilities. This is particularly prickly from the enterprise side, where the question of what happens to enterprise data when the employee, using his/her own device, changes jobs and takes the device, which is loaded with enterprise-sensitive information, on to his/her next assignment may not have a practical answer. And that's before the obligations of Sarbanes-Oxley kick in, which not only define-- but mandate--obligations regarding the absolute sanctity of financial data and systems.

Welcome New VAC Representatives

The STC's Vendor Advisory Council (VAC) consists of a select industry vendors, manufacturers, and service providers that support the STC's Code of Ethics and its values. The core value of the STC is to promote professional consulting based upon independence, integrity, and objectivity of the highest level to clients.

VAC members range in size from global companies, such as Microsoft and IBM, to small regional telecommunications VAR's serving limited geographic areas, such as Metropolitan Telephone. VAC members are given the opportunity to present to and help educate STC members on their offerings and customer solution's via on-line meetings, as well as during the annual STC conference. Additionally, VAC members assist the STC consultants in management issues escalations and responding to client information queries and request for proposals

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Level 3 Communications provides WAN connectivity, MPLS, and Content Delivery to 500+ markets in North America, Latin America, Europe and Asia over our own robust IP infrastructure. We deliver SIP in North America and Europe, and provide collaboration services worldwide. Wherever you are connecting employees, partners or customers across the globe, the Level 3 network provides a scalable, flexible network platform for continued growth. Nasdaq: LVLT

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Active Business Network provides an online telecom expense management and optimization service. Our customers receive their phone bills electronically, consolidated in TelecomXpress, our easy-to-use web portal. Instead of scanning their paper bills, or spending days rekeying data into Excel, they can immediately spot errors and overcharges, manage departmental approvals, and forward them for payment.

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Evolve IP is a Cloud-based Technology Provider that offers businesses a better way to buy and manager their applications, infrastructure, and security solutions. We help organizations outsource technologies that are not within the budget, skills, or focus of their IT resources. Evolve IP customers upgrade these technologies without capital expense, accomplish more with enhanced features, increase stability and control with an award winning portal, and reduce their carbon footprint; which, in turn, allows them to focus on their core business and reduce costs.

Legal & Regulatory Update   *(continued from Page 3)*

I recently heard STC consultant Michael Finneran speak about BYOD policies. While I was initially concerned that his policies concerning the use of these devices didn't spend enough time on the legal ramifications of a BYOD environment (what lawyer wouldn't jump to the same conclusion?), I'm beginning to think that based on the limited amount of available commentary on the topic, that a much larger issue is how the publicly traded entity, and the otherwise-regulated enterprise (including those covered by HIPAA and other existing regulations) balances the legal obligations of existing privacy and other regulation and the practical reality of a BYOD world. If you're looking for easy answers to this conundrum, I don't have them. I just think that it's critical that we all start thinking about how these two realities must evolve to coexist.

Telecom Consulting for International Clients by Ken Krupp

Ken Krupp has over 25 years experience in global telecommunications. He began his career as a contact center manager for an international airline. Ken consults in all areas of IT Telecommunications: full service bill auditing, VoIP, cellular technology, contract negotiation and contact centers. He has experience working with carriers, service providers and corporations in 28 countries on 6 continents. Ken has traveled to over 65 countries and speaks several languages.

Every day we see headlines about currency negotiations with China, unemployment in the European Community, deflation in Japan, enormous growth in Brazil, China, Russia and India. Although some countries or economic zones are at different stages of economic recovery, there is no doubt that we are, at the beginning of the 21st century, all part of a global economy. As IT/telecommunications professionals we must now adapt to this global economy with a global philosophy.

Whether we are consultants with a wide range of clients or corporate IT staff, our work will reach out beyond borders. Maybe the enterprise will be headquartered in the US with branches, factories or distribution centers overseas. Alternatively, the head office might be overseas, with numerous facilities or divisions in North America. Many of the issues with international consulting are the same issues as with domestic consulting, but there are some unique issues when dealing with multiple countries. Just as in North America, whether it's voice or data, landline or wireless, understand your contracts. Audit the inventory and know what the client has. Know the carrier account team. Know what the spend amount is and set goals and limits. Renegotiate with existing service providers and seek competitive bids.

CONTROL is the key word, both for your domestic as well as overseas engagements. When engaged in international projects, special attention must be given to language, currency and cultural differences. These three factors are critical to securing and sustaining control with an international project. When combined with a good TEM product, they will guarantee success for the consultant and the end user.

Language might be the first and biggest hurdle you need to overcome with international service providers. Assuming you are not fluent in the country's language, make sure at least one person on the carrier account team speaks English. If not, ask them to identify a resource that you can turn to for questions. This resource in turn can communicate issues or requests to your assigned team. It is often possible to get a contract in English.

You'll find that terminology can be very different, but the actual product is the same in principle. For example, in the UK an exchange line is a POTS line; E1 is a T1, but with 30 channels instead of 24, 2 Mb instead of 1.5, voice or data. The following table illustrates just some of the distinctions in telecom terms.

U.S. Term	International Term
POTS Line	Exchange Line
T1	E1
1.5 MB	2 MB
Trouble Ticket	Fault Alert
T1	J1 (Japan)
Outbound Dedicated LD	DDI
Toll Free Number	Free Phone/Green Line

Billing and CSRs are not what you're used to seeing. Just like contracts, some countries' CSRs and invoices might also be available in English in addition to the national language. Countries such as Finland, UAE, Bahrain and India provide billing information in English that is just as comprehensive as the national languages. Bill dates may be different depending on the country (September 2, 2012 might appear as 2/9/12, 2/IX/12, 2 September 2012, or 2012/2/9). Also, don't expect service dates to necessarily coincide with bill dates. It is common to see quarterly bills as well as monthly.

As consultants, we're familiar with the terms RFP, RFQ and ROI. For international services add ROE (rate of exchange) to your consulting vocabulary. Currency is a big factor, and exchange rates should be managed closely. This can vary slightly, minute by minute or day by day, or might vary drastically over one month. For example, the USD fetched .6910 Euros in January 2010 but by September the ROE was .787. If my AP system is based on USD, a 50,000 € cell bill was equal to $72,500 in January vs. $64,000 in September! €, £, $, A$, S$, ¥ are critical pieces of information. It is not uncommon to see $502,01 as a balance due, with no reference to the country's own dollars, or 502.01, with no currency reference at all. Then there's the official, 3 letter code, EUR, GBP, USD, AUD, SID and JPY respectively.

Taxes (VAT, GST, IVA, etc.) can range from a few percentage points up to 20%. The scheme is usually simpler than in the US but the reclaim process is very complex. Taxes are often refunded when bills are paid in other currencies and/or other countries. Some industries might also qualify for designated tax exemptions.

The good news about all the complexities is that it creates many opportunities to cut telecom costs, if you monitor the environment closely. You must thoroughly manage the full menu of services, which I call the telecom quadrant: **voice / data, wireless / wireline.** As a consultant, your experience in the US, along with attention to the little things, can be "translated" to international consulting. It's amazing how the process can be so similar and familiar, but in other ways, starkly different.

The Radio Access Network (RAN) Enters the Enterprise

By Ivan Sindell

Ivan Sindell is past president of the STC, a project manager and technologist who tries to understand fundamental communications changes and their potential for his government and carrier clients, as well as, his colleagues in the STC.

As the carriers expand their networks to keep up with increasing demand for wireless data access, consultants and enterprise IT decision makers need to understand the potential impact on the enterprise infrastructure. As a consultant, are you prepared to offer your clients advice and wireless solutions as carriers extend their reach, even into the enterprise domain? Are the CIOs, CTOs or IT directors you work with aware of the impact to their operational and business models, as nearly every device becomes wireless and many devices become mobile?

This technical note summarizes current wireless network developments and their potential impacts on our customer's environments in terms of the technologies, the appropriate uses, and readiness for use. Most significantly, regardless of carrier, the network extension technology or even its ownership, the carriers will demand management access to those extensions as a prerequisite for allowing them on the carrier's network. The carrier may not own the access point, but they will want visibility to it, and consequently access into the corporate IT domain.

The problem that carriers are facing and that is driving the carrier networks into the enterprise is wireless user demand for data. Figure 1 below is Ericsson's prediction of Mobile Data Growth of about 10 times over that next four years.
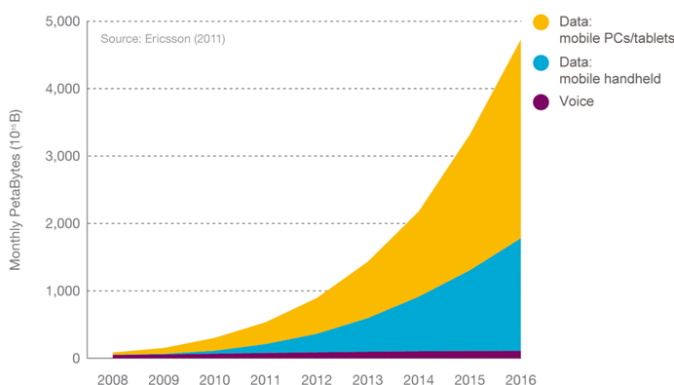

Figure 1 Ericsson Wireless Data Demand Growth

This has required a two-fold change in the network. Carriers have responded with huge capital expenditures for HSPA+ and LTE deployments as they struggle to keep up with users demands for ever more downstream and upstream data. All carriers are now installing or planning to install equipment that uses Long Term Evolution (LTE) Advanced to vastly increase the wireless capacity. This same increase in data has required a new backhaul media and architecture of Ethernet over fiber to the cell tower, but this will not be enough. Still unable to meet demand, Carriers are extending their Radio Access Networks (RANs) into the public and private enterprise space through Small Cells, WiFi and Distributed Antenna Systems (DAS), architectures.

Figure 2 illustrates how the carriers are replacing copper with fiber to improve backhaul.
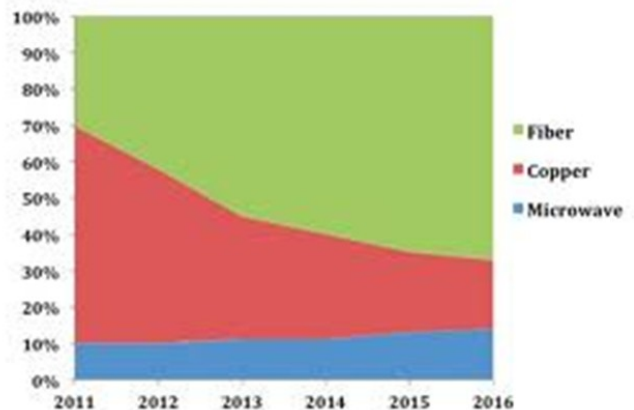
Figure 2 Fiber Necessary to Increase Backhaul Capacity

Built into LTE (Advanced) and its coming successors are the technology, network architecture and management solutions that will allow the network to be extended and managed to efficiently mitigate these capacity demands by off-loading data from Macro cells onto Small Cells, DAS and WiFi.

The carriers mix of standard RAN network elements and new network elements is the concept of Heterogeneous Networking, (HetNet), meaning a mixed multilayer network that will be managed by the carriers as Self Optimizing, Self Organizing, and finally as Self-Healing Networks (SON). These complex networks that use a mix of Radio Access Technologies (RAT) are being woven together to provide the radio and backhaul capacity necessary to satisfy business and personal demand. It is also these same extensions and management solutions that I believe will impact the enterprise customer's telecommunications systems and operations directly and soon.

On May 9, 2012 FierceWireless reported from the CTIA show, that Kristin Rinne, Senior Vice President of Network Technologies at AT&T Labs , described AT&T's . LTE Advanced deployment status and future as follows:

"AT&T Mobility's ... network will begin adding new network functionalities--such as HetNets and SON-- before year's end, with VoLTE to follow in 2013.... One

RAN in the Enterprise (Continued from Page 6)

of the functionalities AT&T intends to employ is heterogeneous networks (HetNets), featuring small cells, which can add density to the macro layer with low-power nodes. AT&T will begin deploying small cells in earnest later this year based on the needs of high-density areas. AT&T would eventually like to deploy multimode small cells that encompass LTE, HSPA+, WCDMA and Wi-Fi. [AT&T] will initially need to deploy most of the components individually.

Another advanced feature AT&T is employing is SON. AT&T is very bullish on its capability in our network… HetNets, SON and carrier aggregation are all standardized features of 3GPP Release 10 LTE Advanced. AT&T is moving to deploy several LTE Advanced elements by 2013, not only because they offer increased data capacity and speeds but also because they improve the intelligence of the network", said Rinne.

Figure 3 Small Cell Data Off Load Capability

AT&T's Rinne: Small cells, SON and VoLTE coming in 2012, 2013 - FierceWireless **http://www.fiercewireless.com/ctialive/story/atts-rinne-small-cells-son-and-volte-coming-2012-2013/2012-05-09#ixzz1urGOkzAy**

You may be surprised at how far along these deployments are. Verizon's network is more completely rolled out than AT&T's and these aspects are further developed by VzW as well. Here are brief overviews of these approaches. They are not at mutually exclusive and you may expect to any combination of them be used in any specific situation.

Small Cells

There is a great deal of media coverage about 'small cells' and these sometimes get lumped together as a generic term for Pico cells or Femto cells. Some manufacturers and analysts see many thousands of them deployed in ways that would fundamentally alter the network deployment. At the DAS in Action Conference in Atlanta a speaker provided this definition that makes things clear: a small cell is a base transceiver station (BTS). This means it will be small and sometimes portable with all the features of a cell. Small cells are not yet fully defined, that is you cannot go out today and buy a fully developed multi-protocol, multi-frequency BTS in a suitcase. In high density urban areas it is being deployed with antennas, backhaul and power (with back-up). Figure 3 provides a description of the benefit of small cells (Pico Cells), vs. Wi-Fi vs. Femto cells.

WiFi (802.11n 3x3)

WiFi is now the ubiquitous infrastructure for enterprises, as well as the home and some carriers (AT&T particularly) have even installed WiFi hotspots in very dense urban environments to offload their macro-cell network. 802.11n 3x3 can now support hundreds of megabits of capacity. At one level 802.11 is a simple Ethernet pipe over the air. As
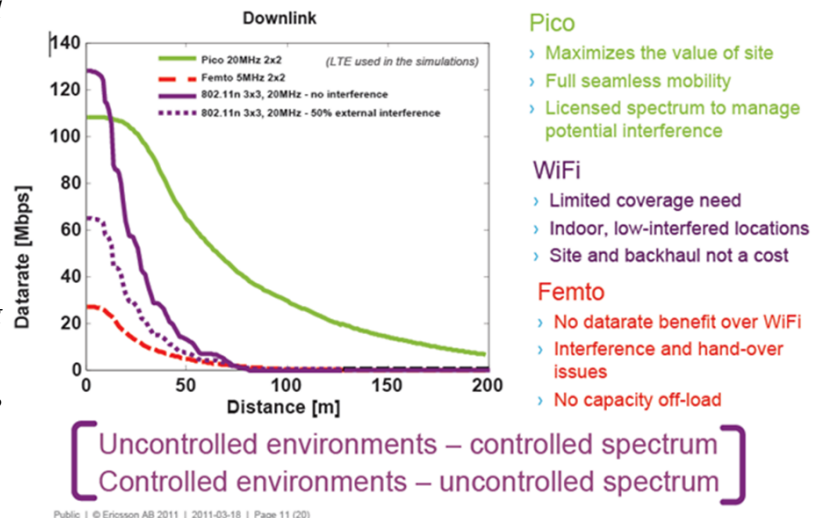
carriers move into this space they require not just normal management/security options, but also the kind of end user device management and call control that any other of their technologies provide customers. You can see some aspects this, also in figure 3.

Distributed Antenna Systems (DAS)

Distributed Antenna Systems provide coverage for one or more carriers' wireless services in defined areas, such as inside of buildings, stadiums, throughout a campus, even in tunnels and mines. In the past, the technology was used for installations of equipment that received a carrier's over the air signals and amplified them with a system of amplifiers and cables. This type of DAS provided coverage in those parts of a building that did not have adequate coverage from the existing towers. This idea has evolved to providing data off-load from one or more carrier's networks. These architectures are complex since they require the DAS to produce signals that are stronger than signals fom cell towers only within the defined area of the DAS They need to ensure sufficient fiber backhaul bandwidth to support the wireless usage of the facility..

None of these solutions are mutually exclusive. Attempts are being proposed to combine DAS and WiFi. No generally agreed approach has been accepted, but there are points that are being discussed, such as shared cabling and/or shared equipment racks. However it not possible at present to share antennas because DAS amplifiers are more powerful than WiFi access points. WiFi antennas are directly attached to the access points and distributed antenna systems amplifiers are attached by long runs of coax.

Impact on the Enterprise

Even without complete agreement on these developments, the

Getting to Know You

Your Name:
Nancy Gates

Company Name:
ShoreTel

Where are you located?
ShoreTel is headquartered in Sunnyvale, CA. I am a virtual worker located in Florida.

Short description of your practice (elevator speech):
ShoreTel is the provider of brilliantly simple Unified Communication (UC) solutions based on its award-winning IP business phone system. We offer organizations of all sizes integrated, voice, video, data, and mobile communications on an open, distributed IP architecture that helps significantly reduce the complexity and costs typically associated with other solutions. For more information, visit shoretel.com.

How long have you been an STC member?
I first joined the STC back in the fall of 1994 when I was ---- um, 15.

What is the biggest challenge you face today?
As with most of us in the VAC, the biggest problem we face is justifying our programs and being able to demonstrate ROI to senior management. It has been particularly difficult in a down economy. But, the good news, is I think we're about to see the light at the end of the tunnel.

What is the biggest benefit you have received from your STC membership?
The biggest benefit I have received from STC membership is twofold: From the business standpoint, I have developed some excellent relationships with many of the consultant members that I think will benefit both ShoreTel and the consultants. From a personal standpoint, I have made some wonderful and supportive friends within the consultant community over my years of membership in the STC.

What are you reading right now?
I just finished Michael Crichton's last book "Pirate Latitudes". It's a definitely a book that holds one's attention.

What do you do when you're not working?
When I am not working, I sing with the Master Chorale of South Florida. Next season we'll be performing with the Cleveland Orchestra, and this season sang back-up for Andrea Bocelli. I also paddle with and train a dragon boat team that competes in the Masters' Division, which means that everyone on the boat has to be over 40. It's really fun paddling with the more "mature" crowd!!

What is your favorite food?
As a native Iowan, my favorite food is a nice juicy Iowa corn-fed steak.

How many kids/grandkids?
I had my children the easy way. I married a man with 3 children.

If you could go anywhere right now, where would you go?
I'd go back to Turtle Island in Fiji.

What is your favorite sports team?
The Iowa Hawkeyes and the South Florida Master Paddlers dragon boat racing team

Your Name:
Patricia A Pittmon (Pat)

Company Name:
Stonegate Consulting LLC

Where are you located?
Scottsdale, AZ

Tell us about your practice:
After 46 years in the industry I have a varied background that include the Carrier side (IXC and CLEC), hardware manufacturing and customer side (GM and AMEX) I have a unique perspective that I bring to clients. I do general telecom consulting. My main focus lately has been in the auditing sector where I audit the carrier bills for business clients and find incorrect billing and refunds.

What is your favorite summer activity?
Using my pool and trying to keep cool. Arizona summers are very hot.

What superhuman power would you want?
None. I thought I wanted to have a crystal ball to see the future but I've since decided that wouldn't be very good.

What would you do if you won the lottery?
Are you kidding, at my age I would quit work and enjoy myself.

What is the most unusual gift you have ever received?
A frog.

RAN in the Enterprise (Continued from page 7)

impact could be significant. Here is a summary of what is agreed to date:

- The Carriers want to control any new network adjuncts as if they were on their networks; they want to make them Network Elements of their networks.

- This will impact Enterprise Networks because it brings the carrier into the enterprise network domain.

- WiFi is the Enterprise wireless infrastructure; if carriers want to use this capability they will end up controlling and partially managing at least a portion of the enterprise's domain. This is also true to a greater degree of HeNB Home Enhanced Network Base Stations (HeNB) or femto cells.

- Distributed Antenna Systems can be owned by the enterprise and are therefore in the Enterprise network infrastructure for their employees and customers, but they can also be carrier owned or third party hosted which bring other parties onto the network.

As more devices become wireless and mobile, we need to be prepared to offer our clients advice and solutions. Whether machine to machine (M2M), or person to person, devices will be using communication to the cloud over a flat IP infrastructure rather than "on-site vs. off-site" data. Carriers will extend their reach onto our customers' premises. Consequently, we all need to understand the new wireless infrastructure's potential effect on information technology systems. This should significantly influence planning and procurement, starting now.

Think about it, I look forward to your feedback.