

Info Telecom



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BITS AND BITES

Telecom 2005: A Great Success!

Our last conference, *Telecom 2005*, held in Montreal from April 18th to the 20th was a great success. Not only did we beat our attendance record – more than 400 participants in three days – but the evaluations received indicated the highest level of satisfaction ever. The workshop concluding the conference, *The Real Debate over IP Telephony*, was attended by some one hundred participants.

We would like to thank all participants, speakers and partners who have all contributed to the great success of *Telecom 2005*. Attending participants included representatives of no less than 69 businesses and organizations, 24 consulting firms and 73 businesses from the telecommunication industry.

The CRTC Retains Control Over IP Telephony

In a decision awaited by the telecommunication industry, the CRTC published, on May 12, decision 2005-28 on VoIP based local services. In short, VoIP local telephone services will remain under the same regulations as current local services as offered by Bell and Telus in their respective territories. The highlights of the decision are the following:

- ILECs (Incumbent Local Exchange Carriers – like Bell) must submit a request for rates to the CRTC for the VoIP services for numbers in their territory (for example, all 416 numbers in Toronto);
- Cable television operators (like Rogers, Shaw, Cogeco and Videotron) must register as a CLEC (Competitive Local Exchange Carrier) and meet all CLEC requirements;
- ILECs and CLECs must allow equal access (1+) to all long distance providers, just as is the case with local lines; resellers are not subject to this obligation;
- ILECs and cable television operators must amend their Internet access fees to allow resellers to provide VoIP services on an ADSL or cable-modem connection.

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This decision is greatly disputed. Read our editorial on page 3 for our opinion.

911 on Local VoIP Service

The CRTC has just confirmed that 911 services are essential in Canada. In April, decision 2005-21 ordered all VoIP local service providers to implement a basic 911 service by July 3, 2005. The basic 911 service routes a 911 call to the closest 911 service point whereas evolved 911 services also indicate the caller's location.

When dealing with a fixed service, it is relatively easy to provide 911 services. However, the problem with VoIP service is that the location is mobile or can be installed anywhere in the world. In this case, the CRTC would like to see a solution, which would entail the routing of 911 calls to an intermediary control centre before transferring the call to the 911 service centre closest to where the call originated.

Local VoIP service providers will have to acquire the explicit consent of customers regarding the limitations of the 911 service offered and will also have to regularly supply information such as self-adhesive warning labels for their customer sets.

The FCC, the American equivalent to the CRTC, also faces the same problem with 911 service on VoIP. On May 19, the FCC held public audiences on this matter. Two incidences have recently taken place, which reiterate the importance of setting up efficient regulations:

- At the beginning of May, a Florida couple alleged that their baby died because the 911 call placed on a VoIP service provided by Vonage, was routed to the sheriff's administrative office that was closed that day;
- Last February, robbers shot at two Houston residents while their daughter tried, in vain, to place a 911 call on their Vonage set;
- The state of Texas has instituted legal proceedings against Vonage with the allegation that the company never clearly warned its customers of the limitations of its 911 service: the state is asking the court to order Vonage to stop mentioning that they offer 911 service.

Career Change

After a 15-year career with Mitel Networks, Carole Daoust has decided to leave the world of telecommunications and to radically change career. Over the last few years, Carole was responsible for the support program offered to Canadian consultants. Carole has always supported our newsletters and our conferences and we wish to thank her for this much appreciated contribution. Carole was also very involved with the CTCA (Canadian Telecommunications Consultant Association).

Carole has made a broad leap: she left Montreal to become the owner of a magnificent bed & breakfast in Orford, in the Eastern Townships. The *Maison Hôte Bed & Breakfast* has a spectacular view of Mont Orford. If you are planning to be in the area, stop by and give her our regards. Visit www.maisonhote.com to find out more about her little piece of paradise.

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Editors: **Richard Comtois** (rcomtois@comtois-carignan.ca)
and **Marcel Carignan** (mcarignan@comtois-carignan.ca)
Layout: **Julie Joyal** (jjoyal@imprimeriedubois.com)
and **Lucie Gaillard** (lgaillard@imprimeriedubois.com)
Translations and Corrections: **Corinne Cahuzac** (ccahuzac@yahoo.com)
and **Pina Nunes** (pnunes@sympatico.ca)
Circulator Manager: **Lise Gagnon** (lgagnon@comtois-carignan.ca)

Comtois & Carignan

TELECOMMUNICATION CONSULTANTS

10145, promenade des Riverains
Anjou (Quebec) H1J 2V6

www.infotelecom.ca

THE CRTC AND IP TELEPHONY

CONTRIBUTORS



BLAIR ALLEN,
PRESIDENT
ALLENCOM COMMUNICATIONS



HANS BERGMAN,
PRINCIPAL CONSULTANT
TELDESIGN



ROBERTA FOX,
PRESIDENT & SR PARTNER
FOX GROUP CONSULTING



ROGER HAY,
PRESIDENT
ROGER HAY & ASSOCIATES



BETTY HODKINSON,
VICE-PRESIDENT
FUJITSU CONSULTING



LOUIS HOUBART,
CONSULTANT
CONSULT-COM
TECHNO GROUP



DAVID MCKEOWN,
PRESIDENT
VIEW COMMUNICATIONS



MARK PINEAU,
PRINCIPAL
MOBILE SOLUTIONS
FUJITSU CONSULTING



MICHAEL ROZENDER,
PRESIDENT
ROZENDER CONSULTANTS
INTERNATIONAL



ANDRÉE RYCKMAN,
CMC
CONSULTANT



BILL WASSELL,
SENIOR MANAGEMENT
CONSULTANT
UNIS LUMIN

On May 12, the CRTC rendered its much-anticipated decision regarding VoIP local service (read the decision's summary on page 2). Over the last few years, the CRTC has been very successful in managing the telecommunication industry and has created a thriving competitive environment.

In our opinion, VoIP local service has fundamental differences with the local telephone service we know:

- The VoIP market is still in its infancy as compared to the traditional market, which is well established.
- VoIP "local" service is an abstract notion, since the local service can be located anywhere in the world and is "mobile".
- ILECs (like Bell) who will offer VoIP service will be competing with their own local service and in this sense, each time a VoIP service is sold, they will reduce their recurrent income, which constitutes a natural hindrance for ILECs.
- Cable television operators could be the big winners in this new niche due to their tremendous networks and significant customer base. For them, VoIP service is a brand new market;
- "Long distance" is becoming a relative notion with VoIP service.

Local VoIP service is certainly competing directly with traditional residential local service.

The CRTC has decided to regulate ILECs (like Bell and Telus in their traditional territories). VoIP local service is a brand new market and understanding who could become dominant players on the scene is very important. Of course, ILECs are leading the race since they not only control over 90% of local residential lines but also access to these residences. However, as opposed to traditional telephony, cable television operators also have access to the same residences.

In our opinion, the CRTC should regulate both ILECs and cable television operators to give other players a chance to penetrate this new market. Even if other players have a controlled access to ILECs and cable television operators' Internet access, it is difficult for them to compete with the powerful marketing machines of these large businesses.

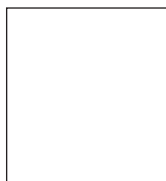
By regulating only ILECs, the CRTC is automatically favouring cable television operators in the conquest of this new market and the result will be the shift of local revenues from Bell to cable television operators.

What we will be facing is not a monopoly but a duopoly. You might think that this is still better, but if the intention of the CRTC is to create a competitive market, then they have missed the target.

Since the Canadian market has a sparse population compared to its vast territory, perhaps a duopoly will be the only way to have minimal competition. Should this be the case, then the same opportunities should be given to both parties, by either regulating them equally or deregulating them.



RICHARD COMTOIS,
ASSOCIATE
rcomtois@comtois-carignan.ca
514-351-2248



MARCEL CARIGNAN,
ASSOCIATE
mcarignan@comtois-carignan.ca
450-449-8812

Television and Cellular

Rogers Wireless and Bell Mobility will soon offer a television service on their cellular networks thanks to MobiTV, a Java application already in use by American cellular carriers. Rogers Wireless will offer eight to ten channels for a monthly fee of \$9, excluding data transmission costs. Bell Mobility's offering costs \$10 per month, includes data transmission costs and will have a dozen or so channels available. How will customers respond? To be continued...

WI-FI, WIMAX, EVDO AND EDGE: Standards to Know

RICHARD COMTOIS

If you are to believe the telecommunication industry manufacturers and analysts, the world is now wireless. Standards are multiplying and it would seem that wave band use is limitless.

Let's get back down to earth for a moment: yes, wireless communications are showing an interesting growth, but the main growth remains in cellular telephony used for voice by businesses and organizations while telecommunication managers bear the brunt of the tidal wave caused by Blackberry.

Customers – and industry people – are hearing new terms for wireless standards: Wi-Fi, WiMAX, EVDO and Edge are some of these terms which themselves encompass other standards. They all point towards large bandwidth wireless technologies that any good manager ought to be familiar with.

Table 1 summarizes the main standards.

Wi-Fi

To find out more about Wi-Fi (Wireless Fidelity) standards and the actual capacities of standard 802.11, re-read Roger Hay's article published in our December 2004 issue (issue 12, page 8).

Wi-Fi is greatly used in residences in order to link home PCs to the Internet without having to deal with cabling here and there. It is also increasingly present in businesses although there are issues with implementation due to its high cost, management and security, which was, until recently, faulty.

The 802.11 standard is also increasingly popular in hot spots as High Speed Internet access. Most hotels now have hot spots in their public areas (lobbies, corridors, executive rooms, etc.) and more and more restaurants are installing them to increase customer loyalty (for example, McDonald's has implemented hot spots in some of their restaurants in the United States). Often, this service is free of charge or offered at low cost.



TABLE I

TECHNOLOGY	STANDARD	USE	BANDWIDTH OFFERED (THEORETICAL)	COVERAGE	FREQUENCY USED
WI-FI	802.11A	WLAN (WIRELESS LAN)	UP TO 54 MBPS	UP TO 300 FEET	5 GHZ
WI-FI	802.11B	WLAN	UP TO 11 MBPS	UP TO 300 FEET	2.4 GHZ
WI-FI	802.11G	WLAN	UP TO 54 MBPS	UP TO 300 FEET	2.4 GHZ
WIMAX	802.16D	WMAN	UP TO 75 MBPS	4-6 MILES	LESS THAN 11 GHZ
WIMAX	802.16E	WMAN MOBILE	UP TO 30 MBPS	1-3 MILES	2-6 GHZ
EVDO (1X)	3G	WWAN	UP TO 2.4 MBPS (ON AVERAGE 300-600 KBPS)	1-5 MILES	400, 800, 900, 1700, 1800, 1900, 2100 MHZ
EDGE	2.5G	WWAN	UP TO 348 KBPS	1-5 MILES	1900 MHZ

As all laptops now have an integrated 802.11 card, this type of service is sure to grow although its profitability for providers remains to be proven.

WiMAX

WiMax is an alternate wireless emerging technology, which offers wider coverage than Wi-Fi for customer sites.

WiMAX will be deployed in three distinct phases. The first phase to begin sometime in 2005 will use the 802.16d standard with fixed exterior antennas to service customers in a defined parameter. The second phase will consist of using interior antennas, which are easier to install. Finally, the third phase will make use of the 802.16e standard which will provide a mobile solution for users in a large operating range.

During this third phase, the 802.16 standard will undoubtedly overlap with 3G cellular services, which are presently being implemented.

3G

3G is an acronym meaning the third generation of data transmission on cellular networks. With 3G, greater bandwidth is reached which closely resembles the speeds offered by High Speed Internet with DSL and cable-modem.

In Canada, two technologies are presently facing off. Rogers Wireless already offers EDGE (*Enhanced Data rates for GSM Evolution*) technology, which is a standard that resembles more 2.5G than 3G since its theoretical speeds reach 348 kbps, while in reality, its average speed is two times less. The advantage of EDGE is that it is already available over the entire Rogers Wireless GSM/GPRS digital network.

Bell Mobility – and Telus Mobility shortly – are beginning tests on 3G EVDO (*Evolution-Data Optimized*) technology in the Toronto area and plan on servicing major Canadian urban centres in 2005 and 2006. EVDO is faster than EDGE (30-600 kbps and higher peaks) but coverage will not be as large for still several months, if not years.

802.11n, the Next Wi-Fi Standard

While customers are juggling with the 802.11 a, b and g standards to figure out which one is best adapted to their needs, the next standard, the 802.11n, is being standardized. However, a small break is anticipated, as the approval for this new standard is not expected for another two years. The 802.11n promises speeds of up to 100 Mbps and more, depending on the technology chosen for the standard.

Presently, the greatest use of data networks comes from the small Blackberry sets. Before EDGE and EVDO, users could only hope for speeds of 40 to 60 kbps, comparable to 53 kbps modems which are considered too slow to surf the Internet with a laptop. Cellular carriers believe that with the arrival EDGE and EVDO, habits could change.

Conclusion

The three series of standards grouped under Wi-Fi, WiMAX and 3G technologies are all large bandwidth wireless technologies that meet different needs. Undoubtedly, each will sometimes encroach upon their respective areas, but there will probably be combined solutions, such as Wi-Fi/Cellular sets, which are beginning to appear on the market.

Interalia
Launches the
SBX

Interalia is launching its new SBX model, a limited version of its popular range of XMU+ products, which will be offered at a more affordable price. Focusing on businesses that have a limited need for voice announcement ports (maximum of 8), the SBX can be used for ACD messages, automated attendants, ACD, patience messages, hotel wake-up calls and offer the capability to dial by name.

The SBX is offered in a four or eight port version with 8, 16, 32 or 60 minutes of audio memory.

DOES AN IP ENVIRONMENT MAKE *your Call Centre More Vulnerable?*

MARCEL CARIGNAN

This article refers to an article published in our September 2004 issue: *“Centralization or Decentralization, IP Telephony to the Rescue”*.

One of the main contributions of IP telephony is the centralization of various telephony applications such as voice mail, voice recognition and ACD (Automatic Call Distribution) technology. This new capacity has a positive impact on the Total Cost of Ownership since it reduces investments and costs associated with application management, licenses and updates.

However, in a context where applications are centralized, risk management becomes a crucial point when choosing a technology.

Abundance of Groups

An organization that has operations in various sites may have multiple needs for ACD. The grouping of agents, even if they are located in various sites, is an attractive option when it comes to optimizing resources and improving Quality of Service at many levels. However, an organization may offer several types of distinct services, which require a completely different kind of expertise. Although tasks may be similar, there may be major obstacles to grouping, such as different information systems, different lines of products, different commercial agreements, language, etc. Operations are thus completely independent from one another, only retaining a common need for ACD.

In a context where the application is centralized, it is possible to implement functionalities regardless of where the resources are located, the importance of the group, or the size of the site (from 5 to 10,000 agent positions).

Vulnerability: What Should Be Considered?

All traditional technological architectures are vulnerable to system, telephone line and power failures, among others. The centralization of ACD technology involves an additional risk that is twofold: WAN failure and impact on more resources. The aforementioned elements must be considered if your organization wishes to benefit from the centralization of IP telephony application. We are obviously referring to **local survival**. In such a situation, what would happen to call distribution

where agents are located?

- Would call distribution still be automated?
- Would calls be cut and lost?
- Would manual intervention be required to recover service?
- Which voice menus will be available to callers (your customers)?
- Would patience messages and music-on-hold be available?

During a failure (application, network or other), basic telephony as well as automatic call distribution must still be available. This holds even more true if the call centre generates revenue or offers critical services for your customers. Understanding the impacts of a failure is essential.

• Automatic Call Distribution

Calls must be distributed to agents. Depending on the system architecture offered by manufacturers, some systems fully maintain local distribution and continue complying with group and skilled-based routing. Others will simplify call distribution and features such as skilled-based routing, prioritization or call identification will be lost. Other systems have no solution or require the installation of a local back-up application that must be maintained in an operational state.

• Loss of Calls

During a network failure, all calls received by the network are lost. Even, if the call was received locally, it could still be lost. Knowing this information is crucial to better evaluate available technologies.

• Manual Interventions

Quite possibly some manual interventions will be needed locally so that calls may be distributed once again. Agents may have to re-log into the system or some programming may be needed to temporarily support the operation. The automation of these procedures is desirable.

• Voice Menus

Organizations are increasingly opting for voice menus in order to limit the amount of telephone numbers published, to reduce the number of useless transfers and to allow callers to choose the service they need. Although the use of voice menus is present in all call centre technologies,

each is a little different and all are possibly vulnerable. Some technologies offer the menus locally so that operations are not affected during a WAN failure. Others conserve their menus centrally and do not have an equivalent local function. Should this be the case, you must determine where calls will be routed by default.

- Patience Messages

When all agents are busy, the caller listens to one or more patience messages, which informs him that all agents are busy and that his call will be answered as soon as an agent is available. A central system failure will not affect messages that are broadcasted locally by the system. However, some systems use external equipment to broadcast default messages. Other systems offer no alternative than the installation of a local application for back-up purposes in case of failure.

- Music-on-Hold

Centralized music is for the most part quite rare in an IP telephony environment, due to the impact it would have on network traffic. However, many call centres use music-on-hold to keep callers informed (instructions, special offers, etc.) It is necessary to know if the technology chosen will allow the management of several sources of local music depending on local needs.

- Other Considerations

If voice menus and patience messages are broadcast by the central application, the additional traffic generated on the WAN must be evaluated. In fact, the central control of distribution instructions generates very little traffic on the network since it involves signalling. However, each call generates traffic on the network while choices on the voice menus are being made and while the caller hears a patience message informing him that all agents are busy. For example, if twenty people are simultaneously on your network and each call generates 50 Kbps, then 1 Mbps of bandwidth is continually being used on your network. Additional recurring costs must be calculated for this type of technology compared to one that would broadcast messages locally.

- Call Distribution

One of the possible advantages of a centralized technology for ACD is that you can configure local line recovery. By using call re-routing functionalities offered by your service provider, you can re-route your important calls to another site (local or long distance) and use your WAN to route calls to agents. Although this will impact the local lines where calls are being re-routed, it is still preferable to a loss in revenue. This type of re-routing can be entirely automated which will limit the impacts on your customers during the entire failure.

Conclusion

IP telephony offers interesting opportunities in a call centre environment. However, each manufacturer offers a different architecture as well as different functionalities. Make sure you understand these differences before choosing a technology, since finding out later will be of no use to you. And remember that you will have to live with your choice for a long time.

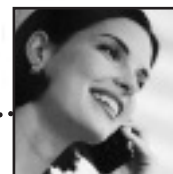
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Quebec, Ottawa & Maritimes: Sebastien Di Meglio
(514) 278-9639 sdimeglio@interalia.ca
Ontario: Frank Papaloni
(905) 568-9930 fpapaloni@interalia.ca
Western Canada: Cliff Nywening
(403) 288-2706 x 111 cnywening@interalia.ca
Travis Dickinson
(403) 288-2706 x 106 tdickinson@interalia.ca

ScanSoft Buys Nuance

The voice recognition market is consolidating. Two of the most important players will become one. ScanSoft will purchase Nuance partly using an exchange of stock and a cash payment. The transaction should be finalized in September 2005.

Our sources say that Nuance will be the name retained for the new company, which in fact was the most well-known name of the two. Some time back, ScanSoft purchased the Montreal firm LocusDialog. Its Montreal office is still one of ScanSoft's main branches in the world.

DOES ANYBODY Really Want our Money?

ROBERTA FOX

Over the last few months, we have been reading many articles in the IT, telecom and business publications about the focus and interest on working with, and selling products and services to Canada's small and medium businesses (SMBs). Software development companies like Siebel and Peoplesoft have created new products specifically geared to the SMB sector that were traditionally only focused on large enterprise organizations.

Telecommunication Carriers and System Integrators are developing and launching new network-based services specifically geared to SMBs. The traditional computer and telecommunications manufacturers are aggressively developing and marketing their SMB products through a broad range of channels ranging from office supply companies, and big box computer chains, through to traditional Value-Added Resellers (VARs), and local neighbourhood computer dealers.

It seems like all of a sudden the whole technology industry wants to gain more of our wallets related to our technology spending. Many of these companies seem to think that we are the only customers spending money, and depending on which report you read, we are!

We have also noticed from our analysis that a lot of money is being spent on advertising geared to the SMB market. This has been through bill inserts, mass market distribution in consumer publications, full page ads in leading business publications, etc. Unfortunately many SMBs do not read, react or respond to advertising methods that are traditionally geared to large distributed multi-national organizations.

As SMBs, we also do not fit traditional purchasing processes geared to large enterprise IT organizations. By that we mean that most of us do not have extensive IT and telecom departments with experienced, knowledgeable resources that have time to call or fax our requirements to a sales professional, spend time to sit down and discuss the various alternatives, and finally get a proposal with technology alternatives and pricing considerations for review.

Most SMBs prefer to be self-service type of purchasers. We want to find out about various product or services alternatives, either via a paper catalogue, on the web, sending an email, or even sometimes by talking to a real person. Many times this type of comparison shopping is done after regular business hours as we are running our businesses "during the day". Guess what... most suppliers don't offer extended hours for sales and service type questions, disregarding whether it is a quick phone call or an email inquiry.

Once we figure out what we want to buy, we then want to be able to easily purchase the appropriate product or service. Sometimes this is by calling in

orders, faxing them or sending an email. We also want various alternatives on how we want to pay for our one-time or monthly purchases. We want to be able to have our orders paid by a variety of options ranging from company credit card, billed on an existing monthly invoiced account, invoiced or sometimes even COD depending on how we are managing our operating cash flow.

Our next challenge is to be able to have access to the status of the delivery of our order so that we can make sure someone is available to receive and sign off when delivered. This is because many of us don't have "retail" type operations where the doors are always open and someone there. (This is particularly true for smaller, distributed professional services type firms like FOX GROUP where our office manager works from our office and her home office depending on school schedules, workload, etc.).

Last interesting point for your food for thought... there is an incorrect belief that small business major purchasing decisions are only based on lowest price. From our research, this is not true for all types of products and services.

SMBs purchasing decisions are influenced by a variety of factors including:

- Access to detailed product specifications, features and pricing information
- Being easy to do business with when you want and how you want
- Relying on referrals from our peers and even competitors
- Supporting suppliers that have business located in our local communities or at least actively participate in our various activities in our local communities.

It is a little know fact that many small businesses prefer to deal with other small businesses, particularly for service oriented activities. This is due to the belief that we will be treated better, receive better service, and quite importantly many of us strongly believe in supporting fellow small business owners.

So What Does It All Mean for the IT and Telecom Industry...

Start acting like a small business, think like a small business and service us like a small business, and you will get more of our money! We believe that your enterprise customers will thank you for being simpler to deal with too!

*Roberta Fox is a Senior Partner, FOX GROUP
& Managing Editor, grayfox INSTITUTE.*

Roberta is also a member of the CTCA. Roberta can be contacted at roberta.fox@foxgroup.ca or 905.294.2821 ext. 1001.



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Microcell, with
Wi-Fi service fees
charged directly to
their monthly bill.

Users can also use
credit cards for
payment.

CELLULAR NUMBER PORTABILITY: *Beware of the Allure!*

LOUIS HOUBART

Cellular telephones were first designed to work on the only two networks existing at the time. Dissatisfied customers had the option of going to the competitor to get their phone reprogrammed to their service. However, the user did have to change cell phone number.

With the 1996 arrival of PCS (Personal Communication Services), service providers differentiated themselves from the competition by rolling out networks that used distinct technologies. This new technological barrier limited the migration of customers from one network to another: in addition to changing number the user also had to change phone.

Our southern neighbours took an important step towards competitiveness in November 2003 when cellular number portability became available, just as it had been for local telephone numbers since 1998. Just one year after the implementation of this service in the United States, 8.5 million users had decided to change provider, which represented a little less than 20% of all users.

Many wondered if portability would eventually be offered in Canada. Last April 21st, the CWTA (Canadian Wireless Telecommunication Association) announced that service providers had reached an agreement on this subject. But why such an agreement?

Prevention...

In its 2005 budget speech, the federal government requested that the CRTC establish the portability of cellular number as soon as possible. The CRTC is planning hearings this fall regarding the matter. Canadian cellular carriers have simply preferred to be prepared for the unavoidable.

The American Experience

Don't believe that all your troubles will be over due to number portability. The following are a few examples of what the FCC, the American equivalent to the CRTC, had to face. What will happen in Canada could resemble what took place in the United States. You might just understand why nothing is yet set in stone. The CRTC still has to define the rules of the game. Here are a few notes:

- First of all, numbers are assigned to geographical regions. Therefore, if you leave Toronto for Montreal, you can't keep your Toronto number.
- If you leave your current provider and still keep your number, you might have to get a new set since there is a technological barrier even on networks using the same technology.
- If you have a contract with your provider, you must wait until the end of the contract or pay to terminate the contract before its term.

- All users will possibly see additional costs tagged to their bill. In the United States, these additional fees varied between a few cents to more than one dollar a month: here the CRTC must still decide.
- Your new network can also charge you an activation fee.
- The billing information you give to your new provider must be identical to that given to your current provider.
- The transfer time from one network to another should have been approximately 2.5 hours. However, in some cases, it took more than four days to complete the transfer.

One Example

If you are a professional using a PCS that does more than just allow you to talk (BlackBerry) and you still have 15 months left on your contract, hastily changing provider could cost you a bundle.

The cost of your decision could vary between \$100 and \$500 if you are under a three-year contract, depending on your current provider. Costs will be higher if you are not under this type of agreement.

Your Entrepreneur

Number portability should however be interesting for businesses. Customers with an array of cellular phones may want to have an agreement with two carriers offering different technologies and coverage areas. Managers could then move users to the network that best meets their needs.

Even in the case of a sole carrier, portability will put all carriers on equal footing when it comes to renewing corporate contracts. Despite the inconveniences related to changing carrier, the main obstacle, which was a change in number, will disappear.

Conclusion

Number portability is a good thing in itself, but there will always be issues that must be taken into consideration.

As for the rollout of this new service, we will have more information over the coming months. A study on the subject should be published in September and the CRTC should be making a decision by the end of 2005. Portability should be available in Canada in 2006.

Louis Houbart is an independent consultant with 25 years of experience in wireless communications. He has been a trainer since 1988 and has written several courses on the subject. Louis has become a regular contributor to Info Telecom. He can be reached at 450-467-4858 or at lhoubart@aei.ca. Louis also publish a monthly e-newsletter, Wireless Briefly.

WIRELESS BROADBAND Update

MICHAEL ROZENDER

Expect lots of new mobile high speed data, internet & video applications... but, there's one big surprise around the corner!

I had the recent opportunity to join in a brainstorming and forecasting session with some of the leading luminaries from the wireless carrier, broadband chip set manufacturers and end users of these rapidly evolving technologies.

The air was full of Wi-Fi, WiMax, 802 this, 802 that, (over half the alphabet is now used for extensions!), 3G, 4G and the arcane debates as to the future of the GSM/GPRS/EDGE/UMTS camps versus those in the CDMA/1X/EVDO world. We were starting to feel a collective migraine coming on, when our leader wisely turned the discussion to the use and application of these wideband and broadband technologies to deliver the value that we all experienced and loved when we moved from dial-up to high speed wired Internet services. With the acronyms and protocol standards talk sidelined, our discussion turned interesting, real fast!

When we add wireless connectivity and mobility to the high speeds many of us take for granted with our wired DSL, cable or Tx's, the applications that were described as under development or ready-to-market were awesome in their number and sophistication. We heard descriptions of integrated location-based services with permission granted intelligent agents delivering high-resolution images of products and services that you specifically request to know about. Compare that to today's annoying SPAM!

Search engines streaming your favourite news, weather, sports, business updates to your PDA at a low bit rate subscription as compared to costly, open circuit, "something for everyone" communications got nodding approval from all at the table. But then, we were pulled into the weeds on the 64 thousand dollar question: how are these services and features going to make money for the software, hardware and network service providers? Hasn't broadband wireless experienced a rocky history with financial failures much more frequently than success stories? As in most industries, the consensus was that BW needs a "cash cow" application... a strong, recurring revenue stream that will support the niche market and the sometimes short-lived multimedia applications that often flame out as soon as the next big thing comes along.

The cellular folks sure know what that is today, especially in North America. While data communication continues to grow, and is becoming lucrative, (especially in Japan, South Korea and Western Europe), **voice** remains today's cash cow in the North American cellular industry.

In the wireless LAN world, public and private service providers seem to be trying every conceivable combination of financial model to make the service

pay: Wi-Fi with your coffee or burger, free access with ad sponsorship, hotel/resort/airport/train station hot spots as a drawing card, hourly, daily, monthly paid subscriptions, etc. Some of these business models are working, but many aren't, and the market is turning to the consolidation and aggregation of key players.

We all agreed: what the wireless broadband industry needed was a **killer** application that would support the market and reduce the "churn" of subscribers coming and going. The surprise is, it may be right under our noses.

Voice over IP technology has changed the telecommunication industry. Adding voice packets to data streams on IP networks is taking the wired communications industry by storm. Extending these wired networks with wireless LANs has also become mainstream in homes, businesses and industries. The concept of adding voice over these wireless extensions, (why not? ...it's already in the air and it's "free") was first met with the objection that WLANs were never designed for voice.

Indeed, like Ethernet, the collision detection and avoidance protocol mechanism, make for a choppy phone call. However there now are proprietary solutions to add voice packet prioritization and the forthcoming 802.11e standard that will make devices interoperable. Still the objection gets raised: "Why use broadband networks for voice?" Narrowband is technically sufficient, and the coverage footprints are much greater. This conventional wisdom is all about to change, especially with the rollout of WiMax in the next few years. Thousands of simultaneous broadband wireless users throughout most major cities will be a reality.

As broadband wireless extends to embrace full metropolitan coverage, we will see the carriers and service providers leap to take advantage of it, if for no other reason than to protect their lucrative customer base for wireless voice services. Wi-Fi handsets are already on the market, allowing in-building mobility over WLANs. Combo cellular/Wi-Fi units will be introduced shortly that incorporate hand-off switching to cellular networks outside of the WLAN footprint and vice versa.

So, what is the coming **broadband** wireless application surprise? Yes, it sure sounds like it could be... **voice!** A year ago, I never would have guessed!

Michael Rozender is the founder of Rozender Consultants International, an independent consulting firm based in Oakville, Ontario. His practice focuses on organizational and communications strategy and tactical planning for enterprise clients, with a focus on wireless broadband technologies. Michael is a member of the CTCA and can be reached at 905-815-9414 or at mr@rozender.com.

Telus Mobility Announces its 3G Service

Telus Mobility has confirmed its intention to launch its EVDO service, a new 3G technology, in some markets across Canada during the third quarter of 2006. Bell Mobility is already offering this technology in Toronto and should expand to other major urban centres in 2005 and 2006.

WLAN Sales Decrease

During the first quarter of 2005, WLAN (Wireless LAN or Wi-Fi) equipment sales for businesses have dropped by 6% according to a research study by the Dell'Oro Group. This is the second quarter in a row that the market indicates a decrease. As for the residential/SOHO market, the last quarter also indicates a decrease but only after having had a very strong fourth quarter in 2004.

Shaw Launches its Local VoIP Service

Shaw Communications is becoming the second Canadian cable distributor, after Videotron, to launch a local VoIP telephony service. Since last February, the Shaw service is offered in Calgary and will expand to other Shaw serviced regions by the end of the year.

This local VoIP phone service costs \$55 per month for cable customers and \$65 for other customers. The rate might seem high but it's a full-featured service and includes unlimited long distance in North America, Call Display, Voice Mail, Call Forwarding, Three-Way Conferencing, Call Waiting and evolved 911 services.

TELEPHONY RECOVERY: *What Are Your Options?*

ERICK MORIN

As discussed in our article, regarding telephony recovery plans, published in June 2004 (Info Telecom #10), chosen solutions are as important as the functions and critical services they are designed to protect in the business. Not implementing measures is equivalent to saying that these services do not have a critical role in the survival of your business during a crisis. Although few businesses can claim to fit this category, many businesses do not cover this aspect of telephony for various reasons.

What Type of Coverage is Appropriate for my Business?

Since companies do not always have recourse to consultation services to design a telephone infrastructure, the purpose of this article is to provide some guidelines that will lead you down the right path in order to develop and implement certain solutions.

First and foremost, we'll take a look at what needs coverage in case of a telephone service failure. Why the term « telephone service » instead of telephone system? This term encompasses all components linked to telephone systems used by your employees. These include:

1. Telephone system and daily operations;
2. Remote sites linked to the main telephone system;
3. System power supply;
4. Local lines;
5. Business' private network;
6. Information systems;
7. Various applications (voice mail, voice recognition, IVR);
8. Management systems such as Call Detail Record (CDR);
9. Business' call center(s) and their management systems.

This article will present solutions for the first five elements. The last four elements (information systems; various applications (voice mail, voice recognition, IVR) management systems (CDR); and the business' call centre(s) and their management systems) will be the focus of a subsequent article.

1. Telephone Systems and Daily Operations • Programming Backup

The first utilization precaution is quite basic: ensure that your provider gives you a copy of the

most recent programming of your telephone system and that it is stored in a location other than your telephone equipment room. In case of fire, having your backup in the same building would not be very useful.

• Password

Your password belongs to you, no matter who the provider is. If the provider refuses to give you the password and threatens to put an end to your contract, he definitely does not deserve your trust. *Change provider as fast as possible!*

• Backup Telephones in Case of Failure

Incoming Calls (Main Business Number):

Install a certain number of analog single-line telephones as well as jacks in rooms designated for recovery. In case of the telephone system's failure, the trunks will automatically be connected one by one to each of the sets. Of course, you will need as many employees as there are phones to answer the calls and take messages.

System Recovery on Each Floor:

If you have trunk lines, assign the available lines to prime sectors of your operation on a well-identified telephone (preferably of a distinct color) with its phone number and a list of all the other numbers prominently displayed as well as the procedures to be followed. In case the telephone system fails, the lines will connect automatically one by one to the analog sets.

To make a call using the public network, dialing "9" will not be necessary since the lines must be converted from a GS (Ground Start) to a LS (Loop Start) in order to allow you to place a call. Two conversion methods are available: automatic conversion using equipment located in the telephone equipment room or pressing a conversion button on the recovery phone. Both methods yield the same result. The functioning of this recovery procedure must be verified regularly through simulation and the procedure must be adequately documented for users.

The disadvantages of this type of set for large-scale PBXs is its different functioning mode in case of failure as opposed to normal operations (no need to dial "9") and its incompatibility with PRI accesses (PRI/Megalink).

There is another solution that is also very functional. It consists of installing a small key system and distributing the sets throughout the building at critical locations without neglecting to connect this equipment to the backup battery system. Very often, when businesses upgrade their equipment, these small systems are done away with. Why sell them at a low price when they could serve a new purpose that will be greatly appreciated in case a failure occurs? Choose a set on which you can program a certain number of extensions with the functions or departments displayed on the buttons.

You will thus have a small private network accessible at all times that is easy to use in case of emergency. In addition – and why not – you can add external lines (fax lines, for example).

- **Redundancy of Principal Components**

Principal and vital components of your telephone system such as the CPU (Central Processing Unit) and the power supply are redundant (in stand-by mode) so that if one of the two elements fails, the other automatically takes over recovery without affecting telephone communications.

Depending on the type of system and the manufacturer, this functionality can vary greatly in price. Consequently, the service that you wish to protect must really be considered critical for the business. When drafting an RFP for the modernization of a telephone system, you can request this functionality if it represents a high-level of protection for your business. Thanks to initial discounts granted, the price of this option can be very interesting.

- **Diversity of Systems**

If your organization is located in a campus-type environment, this is the perfect opportunity to develop a recovery plan by developing a telephone architecture revolving around two completely integrated systems. You will thus be able to develop a recovery plan for all your buildings (critical stations) using both systems.

2. Remote Site Linked to the Main Telephone System

- **Interconnected Architecture with 2 Integrated Systems**

For little money, phones (analog or digital) physically installed in building A can be linked to building B by copper cable and vice-versa. Telephones installed in critical locations will enable you to receive incoming calls and make outbound calls until the end of the failure. Ideally, these two systems will be connected and completely integrated to each other so that inbound and outbound communications may take place in a seamless manner. This configuration calls for a diversity in inbound lines, which we will discuss further on.

Depending on the scale of the systems (number of sets), the installation of a networked voice mail system on the second site could be considered, which would manage the distribution of communications and minimize the impact that system failure may have on messaging.

- **Survivable Modules**

A survivable module can also support site B. As opposed to the preceding solution based on a second telephone system integrated to the first, a survivable module cannot be installed alone.

Videotron's Local VoIP Service: A Strong Start!

After just a few weeks — they launched the service on January 24 — and despite the fact that this service was only offered in Montreal's South Shore (and Laval since the end of March), Videotron Telecom's local VoIP service already had 23,000 customers at the end of April. And this number doesn't count another 2,500 trial customers who, after their 6-mth trial period, decided to keep the service.

Videotron plans on gradually extending its services to reach its other customers. We can expect that the number of customers will quickly increase once the service is offered on the Montreal Island.

A survivable module must be connected to a telephone system. It can be connected by a fiber link, a wireless gateway or any appropriate WAN. The module remains operational in case of failure or break in the WAN link since it keeps in memory certain operational data. Programming data is automatically updated at regular intervals.

The survivable module must be configured so that it covers the level of service required in case the link with the main system fails. You must therefore define the type of services that must be supported according to user and customer priorities:

- Internal communications on-site;
- Communications with the main site;
- Communication with the public network;
- Access to extensions through an automated attendant or Direct Inward Dialing (DID);
- Message taking;
- Call center functionalities.

Some systems maintain a link with the main system through a secondary link (for example, fiber optics or wireless gateway secondary link). However, the cost and the relevance of maintaining this link are elements to be considered in your decision. Remember that you could always reach extensions of the main site through public network lines or the automated attendant.

Usually, communications with the public network are routed via the main system. In this case, you must ensure that a certain number of local lines are connected to the survivable module. In case of failure, the module will route outgoing calls through these lines.

As for incoming calls, some systems offer a basic automatic attendant function. You can route the flow of calls to a local receptionist or direct them to an automated attendant.

Taking messages is a little more problematic and this is where the sophistication of systems differentiates one from another. The voice messaging system is located in the main telephone system and calls are usually routed through a link that has now failed. Consequently, the voice mail system must route the call directly to a voice mailbox. Users will not be notified of the message's arrival. Management must ensure that users check their voice mail at regular intervals in order to take any pending messages. However, the impact that this will have on available lines and on those of the main system means that this constant voice mail verification will have to be limited to critical sites in the business.

Temporary attendants who will transfer calls to an extension can also note down messages for unanswered calls.

Some manufacturers offer voice mail systems in the fall-back module but generally the cost of this solution does not justify the investment. This solution could be viable if its installation considerably reduced the traffic between the module and the telephone system.

If a survivable module is programmed to service a call center or a group of agents and calls are routed to them via DID lines, all functionalities and center data will automatically be lost. In order to minimize this impact, cascading lines could be programmed to a specific location on agent sets in order to simultaneously receive calls and let agents answer them according to availability. With PRI service (like Bell's Megalink), the DID number will have to be programmed to redirect calls to the main number of the cascading lines in case links between systems are not available or do not answer.

Planning for additional lines in case of failure is a good move but do not forget about associated recurring costs. Consequently, consider using these extra lines for faxes or low transmission rate modems as an attempt to render them more viable.

3. Power Supply

When we speak of a power supply, we imply a UPS (uninterruptible power supply), a battery system and/or an emergency generator. Normally, the power supply must service all the components of the telephone system including the PBX itself as well as all sets (TDM or IP), network or fiber switches installed to connect systems to each other or to connect IP sets in certain cases. Power is also needed for the voice messaging system, digital voice announcer, management systems, internal wireless telephone systems and external wireless gateways as well as other similar components.

What should be covered and for how long? The ball is your court. During a power failure, are your computers functional? If yes, how long will they be functional and how much time do your employees need to temporarily shut down daily operations?

Do you have incoming customer calls? If your customers are located in your region, they may be affected by the same power outage. If not, they will have absolutely no idea that you have an outage even if it is announced via the media (for example, the major power outage that affected the Toronto region was an absolute disaster for many companies who were receiving customer calls from other Canadian provinces)

If you have a generator you might think that a battery system or UPS is not necessary. Quite the contrary: their role is misunderstood. Your generator will supply power to elements that are connected to it after a certain delay. Consequently, the UPS fills in the gap and avoids a loss in calls.

Secondly, the problem must be approached differently. The generator's mission is to provide power to important systems in your organization, as it is part of your recovery plan. What happens if this plan fails for any reason? Do you have a plan B? This is where UPS comes in.

Another important point concerning a UPS is its location. Since it is installed between the incoming power and the telephone system, it regulates the system's power supply flow. Power fluctuations exist on our electrical network for various reasons and especially more so after a power outage. Consequently, the UPS protects the life span of our systems and investments.

Generally two hours are sufficient to meet needs. When acquiring a UPS you must make sure that the equipment may be upgraded by simply adding batteries. For example, a hospital can purchase a UPS that can last up to four hours and ensure that it can be upgraded to last up to eight hours by simply adding batteries. Of course you will incur extra costs for this additional protection but it is vital, especially if you plan to subsequently increase its capacity.

For small telephone systems, the cost of a battery system is under \$1,000. For large-scale systems, costs can vary between \$5,000 and \$25,000 depending on the power required and the coverage requested.

If you have already planned on purchasing a UPS for your IT network and that UPS also has the capacity to cover your telephone system, why not combine these needs. You will save on the acquisition cost and add at the same time an element of robustness to your telephone system.

4. Local Lines

- One Building

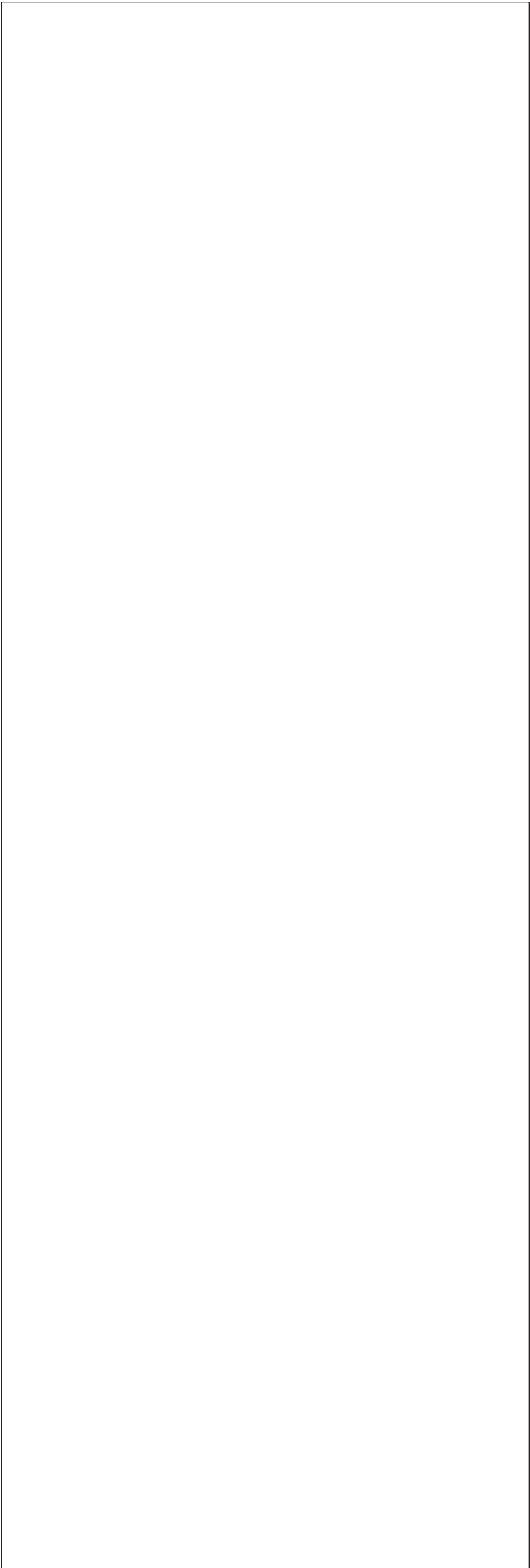
Two types of circumstances can cause the loss of communication on your local lines:

- A partial failure, either a failure in your telephone system or a partial loss of local service (carrier);
- A major failure in your telephone system or a total loss of local service.

A typical customer in the first case is one who has only one PRI DS-1 access (Megalink). If failure occurs due to your equipment or due to the carrier, you lose 23 lines at once. Not all companies have the means or the need to install a second DS-1 access.

It is therefore recommended to install a few cascading analog lines in order to make and receive calls. The PRI service must be programmed to automatically route calls to this group of analog lines. These lines are programmed to terminate at the reception or at the automated attendant. Of course, you will not have the same capacity as you would normally have, but you will still be able to ensure a minimal service. Your employees must be notified to take calls quickly in order to free the lines for other incoming calls from your customers.

In the second case, we have a major failure that could be caused, for example, by a fire in your building. If you have an office in another building, call your local line carrier and transfer your lines



Avaya Launches Communication Manager Version 3.0

Avaya is launching a new version of its IP telephony software, Communication Manager 3.0. Among its new capabilities, the software supports application development by other developers and includes a SIP-compatible conferencing application that supports up to 300 attendees and a SIP Softphone. Version 3.0 offers several choices to ensure the survivability of different sites serviced by a unique centralized system. This shows the trend amongst manufacturers to increase the reliability of their remote systems.

to this office. Make sure you inform them of the situation and provide them with procedures to follow with regards to customers. If you do not have a second office, you can get your lines transferred to a call center that will take your messages. Customer calls will be returned at a later stage by your staff.

• Diversification of Lines in Two Buildings

Your staff is located in two buildings relatively close to each other. Your local service originates at the same CO. You must take advantage of this situation in order to design a local service that is robust for your business.

In this scenario, a telephone system is located in each building. They are totally integrated to one another (either by fiber optics or by a wireless gateway or any other performing media) in order to share certain common services such as voice mail and automated attendants.

Availability to the public network will be diversified over two inbound accesses on the telephone systems of site A and site B, as follows:

Site A

- The telephone system will be equipped with a digital PRI access (23B+D). If the system is busy or does not answer, the public network to the second access will automatically rout calls.
- Site A's telephone system will be connected and completely integrated to site B's telephone system. It will reroute calls to site B sets when incoming calls are received on a site A access.

Site B

- The telephone system will be equipped with a digital PRI access (23B+D). If the system is busy or does not answer, the public network to the second access will automatically rout calls.
- Site B's telephone system will be connected and completely integrated to site A's telephone system. It will reroute calls to site A sets when incoming calls are received on a site B access.

If failure occurs in one site or the other, incoming and outgoing calls will always have a route.

5. The Business' Private Network

In this case, we can have different types of networks or scenarios depending on the number of sites that are connected to each other. This example refers to two offices connected by a fiber optic network. The following recommendations could also be applicable to more than two sites.

An organization has two offices in the same municipality and the telephone systems are completely integrated. It seeks a seamless and affordable solution to ensure voice communication recovery.

If the distance between both offices is relatively short, a pair of copper wires can be rented from the carrier for less than \$50 a month. A DS-1 link can be simulated on which 23 channels will be routed like a PRI access. Of course, the capacity can be increased by renting as many links as required. This is DSL technology and it requires a modem to be connected to the telephone system at each extremity. This solution will cost approximately \$3000 for both modems excluding telephone system accesses.

If the organization is looking for a seamless and affordable solution in order to ensure voice communication recovery but it also wants to route data communication at a good rate, other solutions can be studied.

For example, the acquisition of an Ethernet secured wireless gateway (a non-licensed system running at 5.8 GHz) could be considered. According to the needs at hand, this will allow for multipoint or point-to-point communications. The gateway must have a capacity of at least two DS-1 interfaces to link telephone equipment and one 10/100 Base-T interface for the WAN with a minimal capacity of 30 Mbps for the entire VPN.

For this solution, the budget ranges from \$20,000 to \$25,000, excluding accesses for the telephone system and the LAN. Since we are dealing with a recovery link, it is recommended to use distinct elements (interfaces) from those used for your main link or you run the risk that your recovery solution might also fail.

Conclusion

Many elements must be considered to give your telephone system the appropriate robustness. Implementation, verification procedures and documentation must be a part of the solution. Remember that it is always less expensive and always more profitable for an organization to deal with measures that are preventative rather than curative.

Erick Morin is an independent consultant and President of EMC Consultants. Erick is also member of the CTCA (Canadian Telecommunications Consultants Association) and has over 25 years of experience in the field of telecommunications. He can be reached at 418-628-2442 or by email at erick_morin@videotron.ca.

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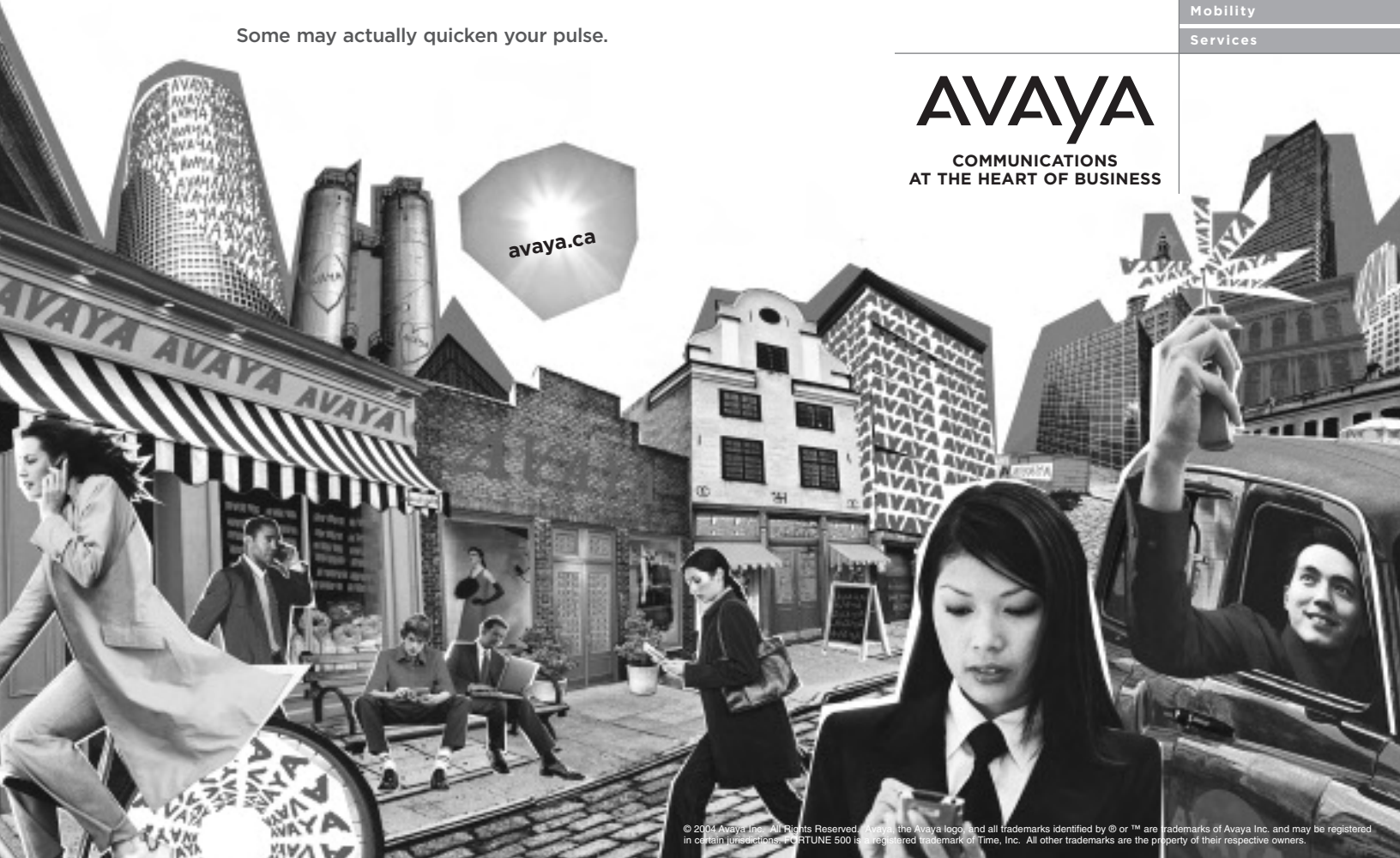
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**Bell Mobility:
10-4!**

After the launch of Telus Mobility's service "Instant Talk" last January, Bell Mobility is launching a similar service called "10-4". This service is similar to Telus' well-known Mike service and allows to instantly connect with a group of people at the touch of a button. Bell's service costs \$15 per month when added to an existing package.

**Rogers Offers
Wi-Fi at
Second Cup**

Rogers Wireless has begun to offer a Wi-Fi Internet access service in some Second Cup cafes in Canada. The service can be billed to a Rogers Wireless account or be paid for by credit card.

VOIP & CONVERGENCE... THE NEW WILD WEST *for the IT and Telecom Industry?*

ROBERTA FOX

As many of you know, we have been involved in testing and using VoIP and converged technologies from numerous manufacturers and network providers since the late 90's.

When we were re-organizing our technology test lab, Stephen Lawson and I had what we believe was an epiphany moment!

Stephen is our Vice President of the Enterprise side of the practice, working with end-user of IT, data and voice technologies. He brings 25 years of IT and applications experience to the practice as a programmer, architect and former IT Director. I bring 22 years of datacom and telecom experience to the firm as a field engineer, systems architect, Network Manager, CIO and consultant.

We were standing looking at the remaining equipment on the racks. We started discussing what we would be bringing in next to test, who and what skills would be required to install and configure the next VoIP/converged solution and what it would mean to the firm and our clients. Our ah-ha's were threefold.

1. The equipment we had used eighteen months ago took about three feet of rack space. Today's configuration take one shelf and about 10 inches of space.
2. The cost of the current equipment and software installed is about \$60,000 list price. Three years ago, the list price was over \$195,000.
3. Either one of us can now install and configure the VoIP server and supporting applications.

In the past, Stephen would do the server and IT applications part for our test projects. I would come in and install and configure the voice and connectivity parts. In most other organizations, you would have had three people, one for the servers and computers, one for voice, and one for LAN and WAN connectivity for a total solution.

With the current converged VoIP server and applications, either one of us can make additions and changes to the "system". Why? The reasons again are threefold.

1. The VoIP "systems" are combined onto a server with a common IP transport protocol and web browser interface, accessible from any workstation within our secure network.
2. The "systems" have a common help library similar to other IT servers so that a person who is unfamiliar with the systems can use the help functions to "walk them through" the install.
3. Last, and most importantly for most organizations, this system we presently use has two vocabularies, one in "IT" speak, and one in "telecom" speak.



We can switch the language back and forth, and the common terms are in the language that each of us is familiar with.

What does this all mean to the IT and Telecom industry?

For the Telecom Service Providers and Integrators (Voice & Data)

We believe that the major impact to the Telecom and IT industry will be that they will have to re-tool their technology resources with extensive cross-training in telecom and IT. Telcos will have to teach their voice people about IT solutions. IT companies will have to teach their professionals about voice and data.

INDUSTRY TRENDS

They will both have to develop pre-staging configurations to define the common configurations of client environments so that the on-site time and resource requirements are dramatically reduced. They have to make it easier and faster for installs. The days of a voice and IT technical person being on-site for an install are not longer affordable... to the customer or the supplier. (We certainly saw this happen in our various VoIP test lab installs).

Providers should also seriously start to examine the ease of installation and configuration management as a major factor of one manufacturer compared to another, and not just features and price as in the past. Systems that are easier to install and maintain provide the opportunity for the providers to reduce their install costs, and perhaps gain margin as these, potentially, become a value-added service.

For the Telecom & Datacom Manufacturers

Technology manufacturers will be required to continue to move away from proprietary management and information systems with telco/datacom "jargon" and move to more common IT-like vocabularies with on-line help systems built in, similar to server installations.

Pre-configuration "templates" of common customer configurations will be required to reduce the time and effort for installations. For customers

that do their own installations, the availability of canned configurations will be a major competitive differentiator between one manufacturer and another.

For both manufacturers and service providers - channel programs, partners and strategic relationships will be required to change and evolve. The firms that can provide installation and maintenance services for voice and IT will be the ideal channel partners for manufacturers and network service providers.

The real question is... Are any converged solution providers out there yet? If so, where? We look forward to your comments.


We would be pleased to provide you with current test lab configurations and results. We also welcome the opportunity to run your next generation solution through its paces from a human factors and change perspective.

*Roberta Fox is a Senior Partner, FOX GROUP
& Managing Editor, grayfox INSTITUTE.
Roberta is also a member of the CTCA. Roberta
can be contacted at roberta.fox@foxgroup.ca or
905.294.2821 ext. 1001.*

Mitel License Online

Since last May, Mitel has been offering its customers software licenses online. This new procedure replaces the former manual process and will greatly reduce delays for its customers. Online licensing will first be available for the following products:

- 3300 ICP
- Entrepriase Manager
- Your Assistant
- Teleworker Solution
- Emergency Response Adviser
- NuPoint Messenger, version 9.0.



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