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KPN selects Siemens as VoIP vendor

KPN, the Dutch incumbent network operator, has chosen **Siemens** as the IP partner for its fixed network and mobile activities in Western Europe. The contract, which is valued at approximately 100 million Euros, will run for five years and will help **KPN** in setting up a completely new IP network.

Siemens will supply network elements and application platforms primarily based on its IP convergence architecture, Surpass. The Surpass portfolio of products from **Siemens** allows for migration of traditional TDM-based networks to IP-based networks, and also enables a Greenfield IP based deployment. Over 60 fixed-network operators have already deployed Surpass solutions. Customers include **British Telecom (BT)**, **Chunghwa Telecom**, **Omantel**, **OTE Greece**, **SingTel**, and **Sonera**.

Once the IP convergence solution Surpass is implemented, **KPN** will be able to offer services across different networks. The new services include VoIP, video conferencing and instant messaging, which in time should run over both the fixed and the mobile network.

Siemens was up against **Lucent** and **Ericsson** in competing for the contract. What made the contract even more difficult for **Siemens** was the fact that **KPN** had no legacy TDM switches from **Siemens** (EWSD switches) in their PSTN network, while **Lucent** and **Ericsson** already had their legacy switches in **KPN** network.

Despite that, **Siemens** won the deal.

Perhaps a factor that led **KPN** to choose **Siemens** was the fact that their existing TDM network cannot be migrated to a completely new architecture which also runs over the IMS (IP Multimedia Subsystem) platform for the fixed mobile convergence network. IMS, which has been a success in the wireless world, is considered future proof, especially by those wireline carriers looking to converge fixed and mobile networks. They are betting on IMS as a common architecture for the converged network. In the case of **KPN**, there may have been some limitations with the TDM equipment of existing suppliers (**Lucent** and **Ericsson**) in migrating to conform to the IMS standard.

Incumbents in Western Europe are facing competition from alternative operators including the cable companies that are pushing very aggressively to launch VoIP or VoCable services. In the Netherlands there are several cable operators that have already announced VoIP services together with video offerings. **KPN** plans to defend its market share through the new IP network. Another major reason for **KPN** to start offering IP based services is to reduce operating expenditures.

KPN will be able to offer VoIP and video services for both residential and business customers. On the mobile side, **KPN** will be able to offer services like push-to-talk, presence and instant messaging. The service provider will also be offering IP Centrex to business customers. For the IP Centrex feature set, **Siemens** has an

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KPN Contd.

in house solution which the vendor will be supplying to **KPN**. VoIP related network elements that **Siemens** will be supplying for the project include media gateways, softswitches, call server control function (CSCF, which is the heart of IMS architecture), media server, voice mail solutions, IADs and soft clients. The contract with **KPN** covers both Class 4 and Class 5 features through the **Siemens** softswitch. **Juniper** will

be supplying routers for this project for the IP infrastructure part.

KPN hopes to start the services in March 2005. Overall migration will be completed over the next few years. The service provider aims to have more than 1 million subscribers within the next 2 years migrated onto this new network.

Cablevision's VoIP subscriber base crosses 250,000 mark

Cablevision has announced that its VoIP service had surpassed the 250,000-customer milestone. The cable company has been adding approximately 1,000 new customers on average per day within Cablevision's New York metropolitan area alone. **Cablevision** started offering VoIP across the New York metro area during late 2003.

It said its standard monthly price for VoIP would remain unchanged at \$34.95 in 2005. Available only to Internet access customers, VoIP service offers unlimited local, regional

and long-distance calling across the U.S. and Canada. The service also includes seven custom calling features: enhanced voicemail, call waiting, caller ID, caller ID blocking, call return, three-way calling and call forwarding, in addition to access to directory assistance (411).

Cablevision is CALEA compliant and supports other regulatory features such as the E-911 service. VoIP calls are carried over **Cablevision's** own network instead of the public Internet.

Industry analysts expect over 1 million households to switch to VoIP service, a number that is expected to jump to more than 12 million by 2009, or 10 percent of all U.S. telephone users.

Net2phone signs agreements to secure local phone numbers covering 80 percent of the US

Net2Phone announced that it is now able to offer local phone numbers in more than 80 percent of the United States to service providers and users worldwide. The company has signed agreements with RBOCs and other local service providers to get inbound phone numbers in all the regions where the company is servicing its service provider customers.

Also termed as Virtual Phone Numbers, the service will enable **Net2phone** to serve more cable operators in a wholesale arrangement of VoIP, as the expanded list of phone numbers significantly enhances service providers' ability to deliver voice service in their regions with local phone numbers.

With virtual numbers, people overseas can have US numbers and service providers in the US can extend their services to different regions without having to establish physical presence in those regions.

The benefit of having a virtual number for a consumer is mainly mobility. The number can be forwarded to any other phone line or wireless number. Virtual numbers, however, have certain shortcomings. For instance, if a subscriber based in New York with a Los Angeles phone number calls the emergency 911 service, the network will be confused as to why a Los Angeles phone number is soliciting help in New York. It is regarded as a serious issue. (See "Extending 911 privilege to VoIP callers" article in this issue)

Extending the privilege of 911 service to VoIP callers

Emergency 911 service has significantly improved following the digitization of telecommunications networks. The most significant enhancement has been the automatic display of physical location of the caller at Public Safety Answering Points (PSAPs), which deal with such calls. This Enhanced 911 service (E911), that makes use of nationwide databases, has resulted in greater efficiency in emergency response.

With the growth in Voice-over-Broadband services, certain unique challenges have evolved.

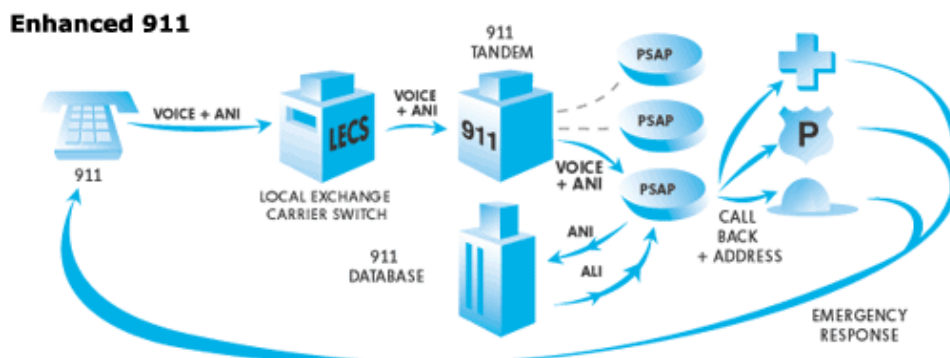
There are certain LECs who offer VoIP services, similar to their wireline services. These LECs sell VoIP by assigning a telephone number called a geographic number. For a subscriber who is assigned a geographic number, providing 911 service is not a problem because 911 calls are processed using the existing wireline 911 network. However non-LECs, such as ISPs providing Voice-over-Broadband service, typically lack direct access to 911 systems.

E911 works in the following sequence: The carrier switch that serves a subscriber's phone sends out an Automatic Number Identification (ANI) signal to the network. The 911 equipment then reads the ANI information and routes the number to an appropriate PSAP. PSAP requests and receives the caller's physical address or Automatic Location Information (ALI) from databases.

Besides the technical reasons why VoIP providers cannot send 911 calls to PSAPs the way traditional wireline carriers can, there is an issue related to the business or funding model in 911. The way the E911 network is funded in wireline networks in the US is that each time a phone is installed, there is a certain tax on that phone line that helps pay for E911 services local to that area. With VoIP there are no current regulations surrounding E911, so there is no way for PSAPs to get funding to be able to assist VoIP callers.

Access to 911 depends on the type of service the VoIP provider offers its subscribers. If the service provider is assuming that its customer is at a static location, it can use outsourced services such as those offered by **Level 3** and **Intrado**. In the US, cable companies provide broadband access to a house and they view these subscribers as being static, not mobile.

VoIP E911 solution for static users works in a similar way as the wireline E911. The **Intrado** solution, for instance, determines exactly which PSAP should get the call. The softswitch deployed by the service provider sends a message (related to the emergency call) to **Intrado**. The **Intrado** solution checks its databases to determine the last known location of that customer, and then determines which PSAP should take the call, based on their internal databases of regional PSAPs. The **Intrado** solution then returns to the softswitch routing information that allows them to get the call to the correct PSAP.



Source: Bellsouth

Intrado's VoIP E911 solution has been available since February 2003. Customers include **Vonage**, **AT&T**, **Verizon** and **Qwest**. Through its eleven customers, **Intrado's** VoIP E911 solution reaches almost quarter million subscribers.

VoIP E911 solutions from **Intrado** and **Level 3** solve problems for static VoIP users. However, if a VoIP service provider is offering its customers mobility, the E911 service then becomes rather tricky.

E911 service in VoIP mobility environment needs to address certain unique problems. In the legacy wireline services the address where that wire runs into, is known to the service provider. In the VoIP world a user can plug (IP Phone / VoIP adaptor / softphone) into any LAN or Wi-Fi network and place calls through the VoIP service provider's IP network. So the first problem is to know who and where the caller is. The other problem is which PSAP should get that 911 request. Having decided which PSAP takes the call, the problem then becomes how to actually get that call to the PSAP. The ultimate issue is how to deliver the right location information into the PSAP.

The use of virtual numbers throws in another challenge. For example, if a customer in New York chooses to have a Los Angeles phone number (non-native to New York), it does not follow the local dialing plans and therefore if the customer puts a 911 request through from that phone, it will greatly confuse the New York wireline 911 network because it will have no idea why it is getting a call from a phone in Los Angeles.

Who and where the caller is, occupies the center stage in emergency services for VoIP callers. The solution may include having the customer inform their VoIP service provider each time they change their location. In the future, it may involve phones

that are GPS enabled. It may involve any number of other technologies for identifying location. This is the area that is likely to be solved within the next couple of years. But it will be solved in a multitude of methods. It is unlikely that there will be one single solution.

Right now the industry is left with callers identifying where they are themselves. Most of the VoIP companies recognize that having the caller self-identifying their location is not at all adequate as people are forgetful about providing such information.

Intrado has proposed a message standard for data protocols between public safety agencies and carrier networks to address VoIP mobility, which the vendor hopes to offer within 2005. Standardization of protocols is a key component in facilitating the delivery of 911 calls from new voice and data networks.

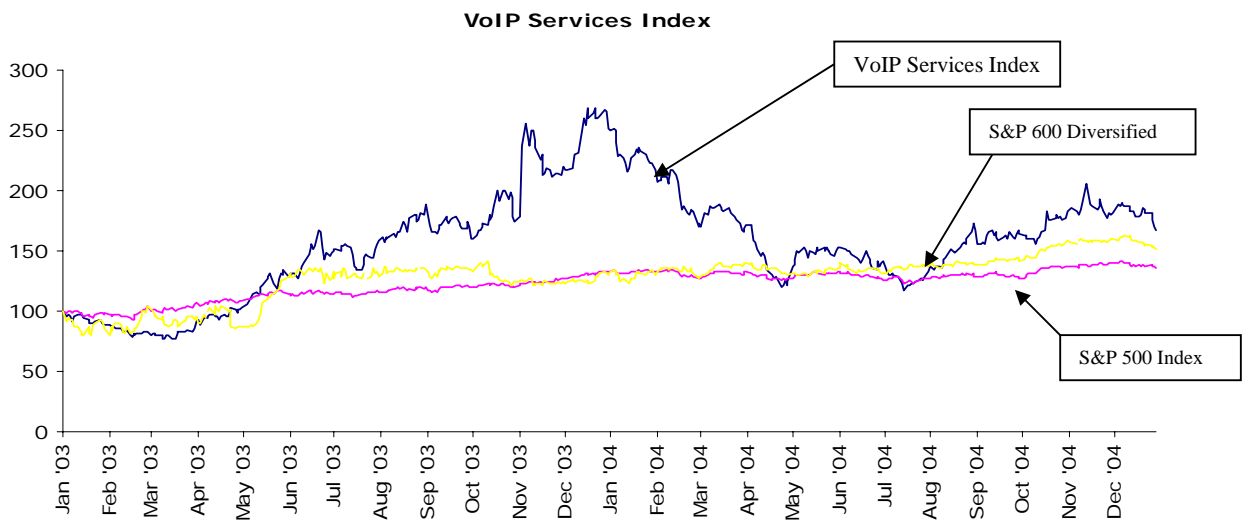
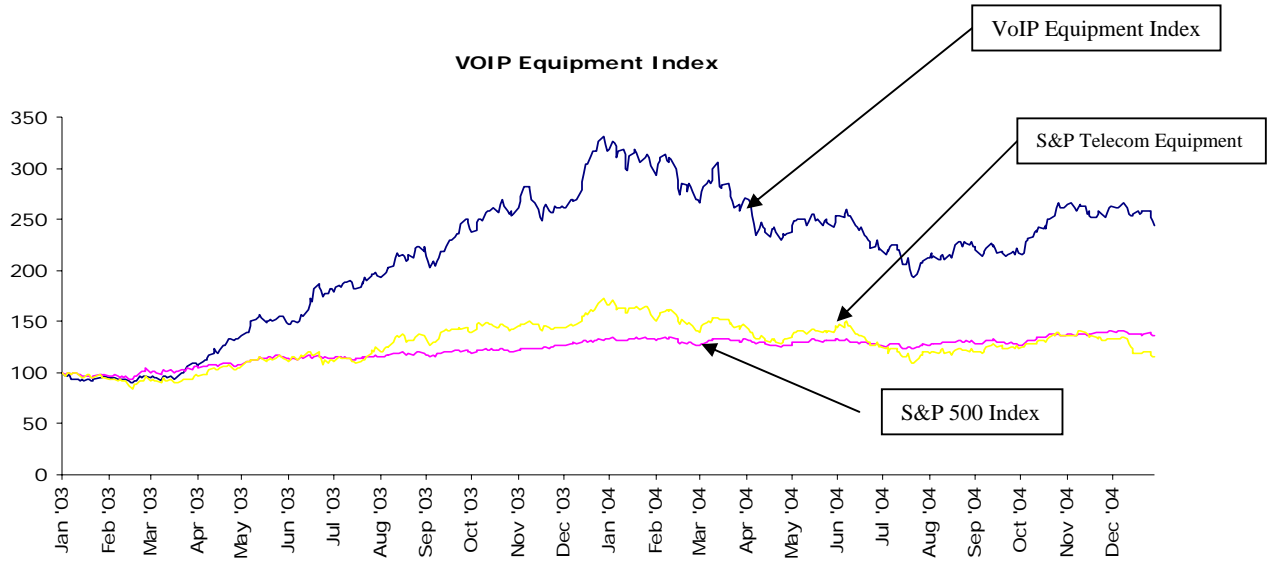
There are several governmental agencies working on VoIP E911 issue around the world. The evolution of emergency communications in VoIP is well underway. Right now 911 service is not required to be provided by VoIP service providers. However, there is a strong possibility that FCC will be issuing some guidelines within next six months.

The European Union is also working to present unified emergency assistance guidelines for all union members. That at present is caught up in various committees trying to determine the appropriate way to address the issue. Some of the European countries have shown preference to modernize the telephony infrastructure by combining the wireless and wireline networks. So the mix of technologies is contributing to the complexity of deploying the E911 solution there.

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Financial developments December 2004

Company	Products/Services	Development	Details
Net2Phone	VoIP Service	Quarterly results	Revenue of \$20.3 million, net loss \$8.2 million
TippingPoint	Packet inspection	Acquisition	Acquired by 3Com for \$430 million.
Global Crossing	VoIP Service	Financing	Raised \$404 million in financing by the subsidiary, Global Crossing (UK) Finance Plc.
Arelnet	Gateways	Acquisition	Acquired by Airspan Networks for \$8.7 million.
MTM	Storage solutions and VoIP solutions	Funding	Raised \$12.5 million in A-3 preferred stock financing.
Chantry Networks	WLAN equipment	Acquisition	Acquired by Siemens. Amount not disclosed.
BCN	Nextgen IP routing	Acquisition	Acquired by Cisco for \$34 million in cash



	Average Returns				
	VOIP Services Index	VOIP Equipment Index	S&P 500	S&P 600 Diversified	S&P Telecom Index
Annualized LTM	(31.89%)	(22.85%)	3.20%	16.70%	(30.63%)
30-day Mean Return	(10.63%)	(5.47%)	(1.81%)	(3.71%)	(15.36%)

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