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# **IT Business Brief**

**IP Telephony: Then and Now**  
by Kevin Lopez

**Voice**

May 7, 2003

## ***A note from the founders***

As we've criss-crossed the country over the past couple of years meeting with enterprises of all sizes, we've heard a recurring theme: "We love the idea of VoIP, but there isn't a sufficiently good business case." And as time goes on, this theme becomes increasingly frustrating because we believe that there is indeed an excellent business case for most enterprises to move toward VoIP. But you might have to take a few more chances, look a little more deeply, and be a bit more creative than you have for some prior technology upgrades.

This case study by Kevin Lopez, manager of telecommunications at Grant Thornton LLP, a global accounting and business advisory firm, shows how by taking the proverbial bull by the horns and moving forward, Kevin was able to realize a reduction of more than 30 percent in monthly long-distance toll charges for his company. Additionally, the company was able to enhance the standard calling features of their telephony network.

We've often blatantly stated that the strategic benefits of IP Telephony, such as enabling unified messaging and providing a platform for next-generation contact centers, provide the strongest business case. Nevertheless, this analysis shows that the tactical business case can be extremely strong, making IP Telephony implementation a no-brainer for conservative as well as progressive enterprises.

- *Steven Taylor, Distributed Networking Associates / Webtorials.Com*



**Jim Metzler**

[jim@itbusinessmedia.com](mailto:jim@itbusinessmedia.com)



**Steven Taylor**

[steve@itbusinessmedia.com](mailto:steve@itbusinessmedia.com)

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### **Cofounders**

Jim Metzler

[jim@itbusinessmedia.com](mailto:jim@itbusinessmedia.com)

Steven Taylor

[steve@itbusinessmedia.com](mailto:steve@itbusinessmedia.com)

### **Design/Layout Artist**

Debi Vozikis

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Contact Jim Metzler

or Steven Taylor for

advertising information

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## IP Telephony: Then and Now

- Kevin Lopez

The downturn in the economy and empty ROI promises were impeding my ability to get the best technology at the best cost—that is, until IP telephony arrived. The technology actually lived up to its hoopla, providing a hard dollars-and-cents payback to my organization.

My company, a worldwide accounting and business advisory firm, has realized cost savings of more than 30 percent in monthly long-distance charges since installing IP telephony in 51 sites. We are also benefiting from new phones with stellar features and the mobility afforded by IP telephony, which doesn't require reprogramming when users change locations.

Standing on this end of the IP telephony boom, it's amusing to think back to its early days. During the conceptual birth of IP telephony, there was a rush of vendors, all claiming unique product or service advantages. Optimism was strong, but the quality of the products hadn't caught up to the industry promises.

Even so, my organization was receptive; the concept of integrated voice and data was hard to argue with. However, there were initial concerns about bandwidth requirements and other technical issues. At the time, my company had 40 offices nationwide, all operating on a standardized platform we'd recently implemented. We were prepared to go the next step: to have all the offices operate with a single, consistent look-and-feel. A strong IP wide-area network

(WAN) foundation was already in place, and this was a key to our success.

### Building the Business Case

Creating a business case was a matter of selling our senior management on cost reduction, new capabilities, and internal development. Our initial focus centered on long-distance savings, inter-office calling, and creating a five-digit dial plan to enable our internal teams to contact each other in a quicker, easier, and more economical manner.

When we discussed possible add-on applications—such as unified messaging, speech-driven directory services, and call accounting—the conversation quickly turned from “if” we should implement IP telephony to how fast could we get it in place. While meeting to discuss requirements, create a plan, and set expectations, though, a number of challenges reared their heads.

Realizing how quickly we could paint ourselves into a corner by not thinking ahead, for example, we planned a separate, “telecom-only” IP addressing scheme that allowed for business growth, which would require additional telecommunications connections.

We then set out to calculate out bandwidth needs for IP calls. But we quickly discovered that we really didn't have any way to gather the information necessary for capacity planning. At the time, there was no call accounting or traffic measurement tool that would tell us how frequently employees made internal calls. To combat a lack of concrete information, we outfitted ourselves with larger circuits, dedicated separate permanent virtual circuits

(PVCs) to voice, and implemented basic quality-of-service (QoS) policies.

Finally, the different codec types we could use were a major point of discussion. Should we take the path of allowing more calls and sacrifice voice quality? Or should we keep voice quality and consume bandwidth quicker? We chose a happy medium, basically keeping the best possible level of voice quality, applying the best codec fit, and letting our QoS rules help us along the way.

By investing months in planning and preparation for the project, we felt very strongly that we had found all the pieces to the puzzle and were ready to begin deployment at each site. The entire installation process from ordering the circuits to installing the hardware took about four months. It was a complete success, thanks in part to numerous planning sessions and dedicated vendor teams.

### Training Challenges

In blazing new trails, we are often finding situations that we must work through as an organization and address with different types of solutions. Some situations might require a software tweak, while others that arise might reflect an internal training issue. We have begun cross-training our voice team, for example, to learn IP and routing to better serve and monitor our new network.

My team grasped the concepts of data networking very well. The biggest issue is how data staff perceives voice networking. Traditionally, the data perspective is that if a device reboots or fails, it will come back up. End-users have come to expect the data network to be down temporarily from time to time or that their PCs might not work for

an hour. However, users don't have the same patience for a call not being completed. This is a daily battle.

On the network side, we discovered a scarcity of tools with the ability to monitor on the voice level. The voice network and the data network have two entirely different error thresholds and what may run fine on the data side can bring a voice network to a halt. We are in negotiations now for a voice-monitoring tool that measures our thresholds based on voice QoS. The tool will help us pinpoint errors, proactively troubleshoot network slowdowns, and predict traffic patterns. It also interfaces with our TDM telephone systems, allowing us to use it as a common tool for programming, user interfaces, and notification of issues to our support team.

We sit today with 51 offices, all connected via our internal IP network using five-digit dialing. In 15 second-phase pilot offices, voicemail traffic is routed over the same network. As an add-on to the initial project, we plan to remove all remote voicemail systems nationwide in favor of four systems in regional hub sites. This configuration will yield significant cost savings and simplify the transition to our unified messaging platform.

Our participating offices are running messaging over this network, and the remaining offices are scheduled to finish migration early this year. Our most recent addition is a full IP telephony system in our newest office in Illinois. We plan to use this system as a model for future deployment of new office equipment. The IP telephones have robust features, such as a log for incoming and outgoing calls, Web browsing, and mobility to new locations without the time and expense associated with

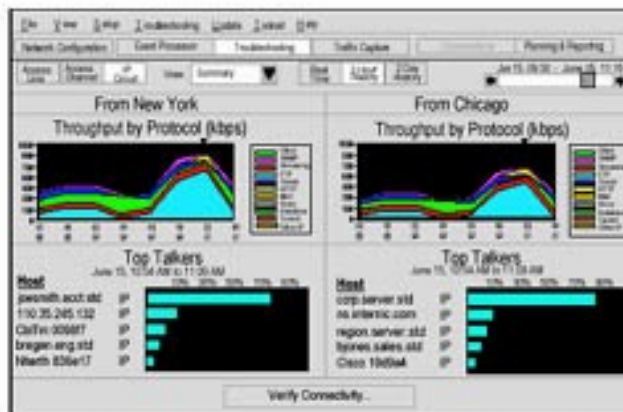
reprogramming. The system features are as good or better than the older systems, and because it is rack-mountable, we've saved office space.

After a few months of cost comparisons, we knew we had done the right thing for our organization by implementing IP telephony. When you can provide brand-new productivity-enhancing application capabilities, ease of use, and growth potential while saving the firm more than 30 percent in long-distance charges, you can't help but consider that project a winner.



**Kevin Lopez** - National Manager of Telecommunications for Grant Thornton, LLP. Kevin has worked in Telecommunications for over 13 years holding various technical and analytical positions. Working the past four years for Grant Thornton, LLP he created the voice standard, implemented 5-digit dial over an IP network and created a full voice network with key applications such as Unified Messenger, Phonetic Operator, Call Accounting and E911. Kevin.Lopez@GT.com

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