



INNOVATIVE INTEGRATED INDEPENDENT

Voice over Internet Protocol: A critical process for an implementation strategy

By Glenn Sexton and Mike Smith

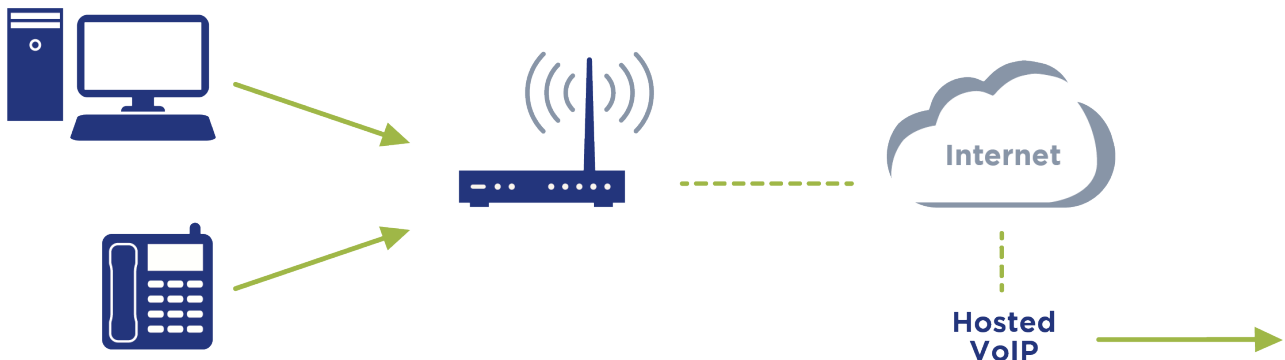
The New Standard

Voice over Internet Protocol (VoIP) is no longer considered an innovative approach for voice communications; it has become the standard for enterprise telephony deployments. It can be a premise-based system in which the owner of the facility actually houses the necessary components, much like the traditional private branch exchange (PBX), or it may be a hosted solution in which the owner contracts with a provider to supply handsets while providing the necessary processing power from a central off-site location.

The current generation of VoIP systems employs standards-based session control and signaling protocols to manage the initiation and completion of calls. The transport mechanism of choice is an IP network, which most businesses already rely on, significantly reducing overall cable and infrastructure costs.

VoIP has grown in demand, and continues to grow, as more businesses realize that the standard platforms of the past cannot incorporate new applications that allow for greater mobility, collaborative solutions, and staff flexibility. VoIP platforms have elevated traditional hardware telephony systems into a software platform, converging many business communications tools into a single unified communications platform. The focus has gone far beyond handsets to encompass overall business workflow.

Simple VoIP vs Business VoIP



In its most basic form, VoIP can be implemented at a small location with a few phones and come live as a plug-and-play option. In small offices or residential environments, hosted VoIP solutions work very well and can offer immediate savings over traditional voice services.

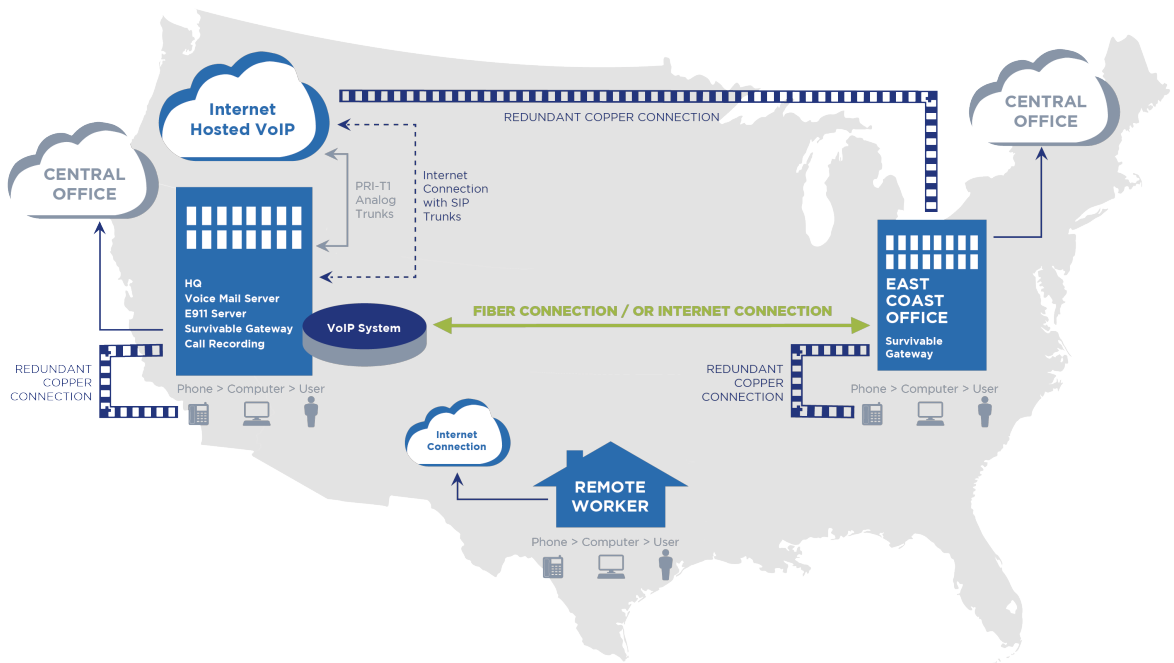
TECHNOLOGY · SECURITY · DESIGN · CONSULTING

4900 SW Griffith Drive, Suite 250 | Beaverton, OR 97005
503-246-8585 | www.NIS.Consulting



INNOVATIVE INTEGRATED INDEPENDENT

With small business and residential services, internet and voice can come in a simple package, and sophisticated applications are rarely required. Everything comes in a box: a cable modem/router that plugs into the provider's network service, and an IP phone that plugs into a modem as well as the PC.



Unfortunately, there are few similarities between the basic small office or residential VoIP solution and those that are specified and configured for an enterprise solution, which can require systems of 100 or more phones per site and encompass multi-site environments, as well as complex integration of multiple applications. This includes consolidating messaging and scheduling functions, and even document and screen sharing, as part of the VoIP platform—often incorporating links to the current generation of Microsoft productivity tools.

Essentials and New Technologies

Most organizations have grown accustomed to a standard set of features associated with their voice system, including the ability to:

- Place an inbound call on hold, complete with music or announcements
- Pick up a ringing phone from another extension

TECHNOLOGY · SECURITY · DESIGN · CONSULTING

4900 SW Griffith Drive, Suite 250 | Beaverton, OR 97005
503-246-8585 | www.NIS.Consulting



INNOVATIVE INTEGRATED INDEPENDENT

- Forward a phone to another extension—within the building, to another location, or to a mobile phone
- Remotely check and navigate voice mail
- Place a phone into “do not disturb” mode

While it may be tempting to simply replicate these existing PBX features in a new VoIP system, that option essentially repackages 30-year-old technology in a new wrapper. You will be investing significant dollars for zero technical advances and sacrificing productivity. Most leaders agree that with any major transition or capital expense, it is in your best interest to incorporate innovative convergent technology strategies in the mix; the same is true of voice communications.

As with any new system, it is critical to do a thorough assessment and analysis that takes a comprehensive view of both your current business needs and your future expectations. Consider all the applications and features available, whether or not you are currently using them, and thoroughly evaluate the options to determine whether leveraging additional collaborative applications through a pending voice upgrade brings additional value to the business workflow.

Ensuring You Get What You Need

Once the assessment is complete, the next important step is to clearly put your VoIP specifications in a Request for Proposal (RFP) or a simpler Request for Quote (RFQ). RFPs allow potential vendors to be creative in their responses as you are asking for a proposal, rather than a hard quote based on an exact set of components and design criteria. The RFP process tends to elicit greater participation as the respondents are offered the opportunity to provide input for value-added services, whereas an RFQ is often seen as a fulfillment document with limited options for a respondent to provide additional goods or services.

Both documents need to be crafted carefully to assure that they:

- Meet your needs
- Detail your requirements
- Meet the legal requirements of your procurement authority
- Include provisions for options and component pricing in simple terms (i.e. cost for an additional single item)

Ensure that you do not unknowingly accept a bid from a less-qualified participant by spending the time to create well-crafted RFP or RFQ documents. At a minimum, an RFP or RFQ should include:

- **Features and functionality.** This is the bedrock of any RFP or RFQ process. By crafting documents that can reasonably create a baseline for all responses, the differentiators are easily highlighted and evaluated.

TECHNOLOGY · SECURITY · DESIGN · CONSULTING

4900 SW Griffith Drive, Suite 250 | Beaverton, OR 97005
503-246-8585 | www.NIS.Consulting



INNOVATIVE INTEGRATED INDEPENDENT

- **Five-year total cost of ownership (TCO).** Your analysis should go beyond the initial investment and include the next five years. Maintenance costs and ongoing fees are often less-obvious culprits that push the budget boundaries.
- **Reference checks.** No one will hand out a bad reference; but you can look for the breadth and depth of the vendor's experience in complex environments. Ask for a reference with challenges and find out how the challenges were addressed.
- **Stability.** Knowing how suppliers view your potential VoIP system integrator will tell you a lot about their general business acumen, and if they act in a responsible way toward the community which provides their support.
- **Local presence.** There can be risks in accepting the lowest responsible bid if the firm is located all the way across the country. Evaluate the risks and craft your bid documents accordingly to limit risks. Consider mandating a maximum response time to address problems.
- **Vendor's project management.** A VoIP project of any magnitude requires an on-site presence to manage the process. The project manager's curriculum vitae must be acceptable, and there should be a strict commitment to support the entire project. Bid documents should clarify what the minimum acceptable qualifications are for project management and installation personnel.
- **Thorough meeting and reporting schedules.** Make sure the bid documents clearly define the expectation for on-site meetings and weekly status reports. Ask the vendor what type of expectations will be in place from your internal resources to complete the project on time, and plan accordingly.

Other Important Considerations

Network Configuration: As with most technology applications, the physical and logical network must be properly designed and configured for the technologies in place. VoIP systems leverage existing data cabling to operate. This typically means power over Ethernet cabling with appropriate bandwidth to support the desired functionality. Category 5e cabling is the minimum recommended for VoIP implementations and various logical network considerations should be addressed for proper voice traffic routing.

Enhanced 911: Upgrading voice services to VoIP allows your business to provide expanded location information to emergency responders. It is important to understand the best practices for implementation to ensure responders arrive at the correct location. At minimum you must confirm that 911 calls are correctly identified by the PSAP. Call the non-emergency line for your local dispatch center to schedule a time to test this, this is especially important in multi-branch environments with calls traversing a network to a central location.

TECHNOLOGY · SECURITY · DESIGN · CONSULTING

4900 SW Griffith Drive, Suite 250 | Beaverton, OR 97005
503-246-8585 | www.NIS.Consulting



INNOVATIVE INTEGRATED INDEPENDENT

The System is Installed. Now What?

One of the most frequently overlooked steps in technical projects is the acceptance process. Specifically: How long should one wait and what performance metrics should be satisfied before the system is accepted and final payment is tendered?

Many entities stipulate a retainage between five and ten percent of the total cost of the system. This is very important, as it provides the financial leverage to encourage vendors to address any outstanding issues. Full payment typically signals complete acceptance to the vendor.

Make sure that a punch-list process is part of the acceptance phase. At the minimum, it should include:

- Time and date of inspection or observation of deficiency
- Detailed description (pictures may be beneficial)
- Entity responsible for resolution
- Anticipated resolution date
- Current status of item (i.e. Open, In Progress, or Completed)

Subsequent punch-lists should note if the item has been addressed, and its status updated accordingly. Final acceptance should occur only when all punch-list items are corrected.

Be sure documents address follow-up responsibilities to which the vendor is contractually bound. These should include:

- Help desk – from day one. Providing a vendor on-site with technical expertise to address all issues.
- Additional training – 30 days after initial startup. As people begin to use the system, questions will arise.
- Unit pricing good for a minimum of 90 days following acceptance.
- Unconditional one-year warranty period on all components, including hardware, software, and installation.

Consider the Maintenance

Like a five-year balloon payment on a loan, maintenance costs can quickly escalate to incredible proportions. Therefore, bid documents must include comprehensive language concerning warranty and maintenance, and the difference between them. All systems should have a minimum of a one-year parts warranty from the manufacturer, and longer is better. All maintenance



INNOVATIVE INTEGRATED INDEPENDENT

contracts, including extended maintenance, should be included as part of the five-year TCO analysis.

While maintenance is not outside the skill set of most companies, it can be complex, time-consuming, and beyond the available bandwidth of your staff. Many clients wonder if a maintenance contract makes sense. The answer depends on several factors, not the least of which is how much time and expertise your staff possesses. If your vendor charges \$175 an hour with a four-hour minimum to download and update software, it may well be worthwhile to have one of your staff perform routine updates.

Get Unbiased Guidance

In many business environments, the time and effort required for assessment, procurement, integration, installation, and maintenance of a VoIP system can overwhelm existing staff. This is why engaging the services of a consulting firm that understands the unique technology and options around the VoIP space is often the most efficient and cost effective option.

In particular, choosing an independent consultant—one who is familiar with multiple VoIP options but has no preconceived bias toward a particular brand or manufacturer—is to your advantage, to ensure that you get the optimal solution for your available budget.

At NIS, we do not accept commissions from vendors or manufacturers, nor do we sell any equipment. As a fully independent consulting firm, we offer unbiased advice and expertise in all areas of communications technology, including VoIP.

TECHNOLOGY · SECURITY · DESIGN · CONSULTING

4900 SW Griffith Drive, Suite 250 | Beaverton, OR 97005
503-246-8585 | www.NIS.Consulting