

# A VOIP Application Planning Framework

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**In making the migration, consider these guidelines for VOIP messaging, call answering and mobility support.**

**P**lanning for your voice messaging, call answering and mobility support applications as part of your VOIP migration can deliver important results, including major cost savings and business improvements. (The drivers, options and typical choices for this application planning are outlined in *BCR*, October 2005, pp. 38–39.)

The logical, straightforward steps outlined in this article can be an essential component of your VOIP project plans.

## Step 1: Decompose Your Voice Messaging Systems

The first step is to decompose the applications in your current voice messaging systems. Most voice messaging systems, installed in the 1990s, are an assembly of multiple applications, including:

- **Telephone call answering:** Answering outside callers to enterprise extensions.
- **Voice messaging and networking:** Mailbox-to-mailbox messaging and group lists.
- **User “find me” and notification services:** Alerting for important calls, messages.
- **Auto-attendant and IVR-like applications:** Self-service support for callers.

Preparing an inventory of these applications will allow you to plan the future of each application in a distinct and logical manner.

## Step 2: Identify The “Customers” And “Users”

The next step is to identify the “customers” or “users” for each application. For example:

- **Callers into your business—**Who is calling your company today and who will be calling in the future?

The number of telephone calls and call-answering events has dropped dramatically in recent years due to alternatives such as direct cell phone contact, Internet self-service, email, and instant messaging (IM). For those who do call your enterprise, what experience do you want to offer?

An effective speech-enabled name dialer has become a best practice for caller service. A “find me” service, used entirely at the caller’s option, can dramatically improve customer service and business process speed while also reducing the number of voice call answer messages that are stored, retrieved, archived and managed. You may want to consider new applications that can be designed into your new VOIP call answering systems, such as committing a callback time to the caller, by referencing the specific called-party’s (user’s) calendar for free time.

■ **Callers from within your business—**Is call answering used between internal locations (instead of sending voice messages)? You can check your PBX and voice mail logs to determine how much this is occurring. If so, for what business purposes is it used? Is the caller checking or adjusting a meeting start time? Is the caller shopping for an expert resource at office and mobile numbers? Could the purpose of the call have been accomplished with a voice mail or email message?

Alternatives such as IM can eliminate the need for many “status” calls. Linkage of cellular and desk phones into a “one number” arrangement, possibly with the “find me” option, can allow these intra-enterprise calls to be completed more often, cutting costs and accelerating business. The emergence of “presence” indicators, which show whether the person is even available for a call, can cut the number of calls and the resulting call answer messages even further.

If most internal callers simply intend to leave a message, consider more end user education on how to use your company’s messaging networks, rather than wasting the time and money to call,

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possibly disrupting the called party in the process. The goal is to minimize the need for this intra-company call answering service, replacing real-time network capacity with low-bandwidth voice message network packets and reducing the cost of your VOIP systems.

■ **Employees sending voice and fax messages to other employees' mailboxes**—This can be a critical area. Your enterprise's employees are paid to accomplish specific transactions, tasks and projects. You want to do every profitable thing you can to ensure their success. In most companies, messaging with easy, automatic reply has shifted in whole or in part to email. However, voice messaging continues to have powerful aspects:

—Voice messages are faster to create, can be created instantly from any phone, and can be retrieved from almost anywhere, even when data networking is not available;

—Voice messages have more personal impact, since the voice contains information and inflections not possible in text-based messages. The "President's broadcast voice message" used by most organizations is one example of this important application.

Try to understand the ways that employees are using voice messaging and how their use of voice messaging links to business transactions, processes, tasks and projects. If possible, try to understand the employee voice messaging needs on a departmental or job basis, in preparation for Step 4 below.

■ **Employees retrieving and responding to messages (call answer and internal)**—Usually, rapid message retrieval and response is required for the call answer messages from callers into your business and many of the internal messages from other employees.

Focus on the ways that your enterprise's employees want to be alerted to new messages. As you shop for new VOIP messaging, seek out systems with easy-to-use filtering and prioritization rules to link the importance of the message or the sender to the method of alert or notification. Also, seek out VOIP messaging systems that can track the time it takes to respond to messages, providing feedback to help improve customer service levels.

In addition, consider the range of options for voice message retrieval. Message display and access on the user's PC is proven to improve responsiveness and productivity. It is also becoming feasible and common to have both the notifications and the voice messages delivered directly to the user's wireless data device or cell phone.

### Step 3: Quantify The Analysis

Get the relevant facts for each of the decomposed application categories. The current usage data will show how the messaging systems are being used. This will provide a basis for forecasting the VOIP messaging capacity. It will also provide pointers to the need for new applications such as speech

attendants, PC or wireless data message notification and retrieval, presence indication, or response time statistics.

■ How many calls are being answered in a typical day or week?

■ How many calls come from outside callers and how many from employees?

■ How many voice messages are created and sent?

■ How many of the messages are one-to-one messages? How many use group lists?

■ How frequently is each special auto-attendant application or mailbox being used?

■ How many notification calls, pages or SMS-type messages are sent each day?

■ How many email messages are being accessed by telephone through voice mail?

This information should be available from the reports generated by your current voice mail and PBX systems. You may also find it useful to get similar data on email and IM usage, wireless email (e.g., BlackBerry), and cell phone usage for the users.

Using the information you collect, do your best to forecast the future capacity needs for voice messaging. The most common factors that influence the capacity needs are:

■ Changes in the volume of call answering or messaging traffic per employee.

—Increases can occur because of changes in business practices, such as routing all customer and employee calls to your business numbers instead of to cell phones or home offices. Most VOIP PBX systems have very effective tools for "extension to cellular" from the office DID number; and most VOIP messaging systems have very effective "find me" applications to assure optimum caller services.

—Increases or decreases may occur due to increased teleworking.

—Decreases can occur when email, instant messaging, presence indicators or Web self-service replace voice calls.

■ Changes in the number of employees supported. These changes will include:

—Increases that occur as the company grows and expands.

—Decreases that may occur because of downsizing, outsourcing or business efficiency improvements.

The projected net change in call answering and messaging traffic per employee can be multiplied by the change in the number of employees supported, to forecast the need for voice messaging capacity and functionality.

### Step 4: Anticipate Business Process Changes

Most enterprises have a backlog of planned business process improvements, and all enterprises are constantly seeking new business process improvements. Many enterprises must respond to changing regulatory requirements, such as the Sarbanes-

**Business process considerations may include regulatory issues**

**Consolidation is usually the right ROI move—but make sure there aren't other priorities**

Oxley requirements in the financial services industry.

In planning your future VOIP messaging, try to determine the major business process improvements or changes your company will face in the next 3–5 years. Confer with your enterprise's business process owners to get their advice and support. A year-by-year table of anticipated changes might be useful for this purpose. Examples of business process changes related to VOIP messaging might include:

■ *Conversion of job functions to software applications, self-service and Web portals.* If your enterprise is progressively converting transactions and processes to software-based solutions, you will see a major decline in voice messaging needs. This trend is already visible in most enterprises in purchasing, HR, order entry and service management. The trend is likely to continue and even accelerate.

In these changes, the digitized versions of voice and fax messages are likely to be filed with the related transactions, rather than being transcribed or discarded. In some applications, an automatically generated voice message might be an effective way to inform or alert a mobile employee of pending transactions.

■ *Increasing use of mobile devices and emergence of smart clients.* Many enterprises see the mobile smart phone and wireless PDA as the "endpoint of the future." Also, in the next 2–3 years, products such as Microsoft Live Communication Server will arrive in the enterprise. Trends such as these will give users clear visibility into the "presence" of the knowledgeable resources they need, at the moment they need them. Presence information will be integrated into business applications and Web portals mentioned above.

■ *Compliance with regulatory requirements.* Expectations for enterprise accountability and transparency are increasing. Since information technology makes it possible to track and review business communications, regulators require that this be done. Messaging systems will be expected to log and index messages and track message disposition.

As you prepare your estimate of business process changes, remember the planning axiom: "There is a tendency to overestimate change in the short term and to underestimate change in the long term." If you are looking 3–5 years ahead, it is important to include the more dramatic possibilities for change in your thinking.

**Step 5: Construct Your VOIP Messaging Choices And Solutions**

Armed with the information above, you are ready to construct (or design) your VOIP messaging investments. The process can be straightforward, though detailed work and expertise are required. The range of choices is outlined in the aforementioned October 2005 *BCR* article.

Be sure to ask and answer the following four questions (A through D) when constructing your new VOIP messaging solutions.

(A.) *Did you discover any compelling application needs or business process improvement opportunities in Step 2 or Step 4 above?*

If so, work with your business process teams to include the messaging system changes in pending process improvement projects. If a new project is needed, create the proposal for action and work with your management to justify and authorize the proposal. For example, you might want to:

■ Store voice messages in the enterprise's email system (often called "unified messaging"), so business process changes or regulatory compliance methods applied to email will also apply to the voice mail messages.

■ Provide a rules-based "find me" service for your users to improve customer responsiveness and transaction speed.

■ Provide basic or advanced speech-enabled call answering/auto-attendant to lower costs, provide round the clock coverage and better customer service. In some cases, the speech attendant may include the "find me" application.

■ Implement visual voice and fax message access for your users on IP phones, IP softphones, PCs, cell phones and PDAs. Delivery of the messages to the endpoints as .WAV or IP files may further speed processes and lower messaging system port costs. Select those endpoints and functions that make the most sense for your process needs.

Compelling applications such as these may only be required for some of your users, so it may not be necessary to add them for all users or on all messaging systems.

(B.) *Does server consolidation make sense as part of your VOIP implementation?*

In many cases, VOIP changes the enterprise network topology, with larger switching systems in HQ and regional sites connected to smaller local sites and home offices via IP gateways, IP phones and IP softphones. Often, this change in network topology proceeds on a regional basis, or as the result of a merger or acquisition. In some enterprises, consolidation also includes a decision to "host" the consolidated switching and application servers at a network-based service provider's facilities.

If VOIP server consolidation is your situation, plan to centralize and consolidate your messaging systems into those HQ and regional sites. There is usually a major ROI associated with VOIP and VOIP messaging server consolidation.

However, be sure to use the information from Steps 2, 3 and 4 to check for reasons not to consolidate. For example, you may not want to consolidate very active local auto-attendant applications (e.g. branch banks, insurance offices, local government offices) that would be difficult to manage centrally and would add unnecessary traffic to the IP network.

If consolidation is planned, consider storing voice messages in the email system, since the email systems have often already been consolidated in those same HQ and regional sites.

While the consolidation of messaging systems is natural during or after the conversion to VOIP, there are numerous examples of messaging server consolidation on TCM (T1 QSIG) networks today, so you need not delay this ROI-positive move if VOIP is not imminent.

**(C.)** *Can you make incremental improvements to your existing messaging systems?*

In many cases, you can supplement your existing messaging systems to provide many application improvements for callers and users. A speech attendant application with “find me” capabilities is a good example of such a change. Also, visual client access can be added to most existing voice messaging systems.

So if there is no immediate justification for a major change-out, upgrade or server consolidation, then examine what is possible with additions to your existing systems.

An incremental approach to delivering more functionality can have several benefits. It buys time until the VOIP migration is complete, until new releases are available for the evolving VOIP messaging systems, or until the emerging wireless mobile devices and smart clients become generally available.

**(D.)** *Should your messaging solution be PBX-independent?*

Most large enterprises own a variety of PBX models and brands. With the rapid evolution of VOIP systems, new versions and brands of these systems are likely to be installed in an enterprise network that also retains older VOIP and TDM PBX models. If this is your situation, select a VOIP messaging solution that will attach to multiple PBX types and models. The supplier’s current capabilities as well as past performance and future roadmaps will give you a good indication of the degree to which the messaging solution is PBX-independent.

This does not mean that the messaging system must be purchased from a company that’s not in the PBX business; several major VOIP switch producers make PBX-independent messaging solutions. But it does suggest a scan of the independent messaging providers, who focus on efficient, economical attachment to multiple PBX and VOIP telephone brands.

However, there are cases for purchasing a messaging solution that is closely coupled to or even embedded in the VOIP PBX. This might make sense as part of a VOIP switching system investment program when there is little or no need for voice messaging or message networking between sites (ref. Steps 2 and 3) or when the primary application is simply local call answering and auto-attendant as part of a VOIP switching system investment program.

Your answers to questions A through D should provide guidelines for:

- The applications you need to consider **(A)**.
- The topology of the system, i.e., consolidated or distributed **(B)**.
- The scope and timing of an investment **(C)**.
- The robustness and PBX-independence of the message solution **(D)**.

Your responses should help you decide what system elements to choose from the wide array in the market and determine the pace at which to implement the messaging solutions.

Of course, economic considerations influence your implementation. If your company wants to defer or smooth capital expenses, then the incremental improvements could be the best answer (question C). But if your company is ROI-driven and is aggressively pursuing productivity gains and business improvements, focus on the application area (question A). And, if you’re ROI-driven independent of business process changes, then look at server consolidation (question B).

With an implementation approach driven by your analysis and your answers to the four questions, you need not be anxious about end of sale, end of support, or other lifecycle announcements from messaging system vendors. If you are moving rapidly on applications or consolidations, you will likely complete your messaging system upgrades well before these events would have any effect. If you are taking an incremental improvement approach, you’ll be able to extend the life of your current systems, buying time as the new generation of messaging solutions mature.

The key to the incremental approach is to find products that interoperate with the newer generation products, providing a “bridge” to the future. And if your enterprise is primarily focused on VOIP, then your analysis of the need for a PBX-independent messaging solution will be a guide as to what type of messaging modules to include.

### Conclusion

As you proceed with your VOIP application planning, this five-step framework, with the four questions (A through D) in Step 5, will guide you in identifying and quantifying your enterprise’s requirements for VOIP messaging and will help you in selecting an optimum path to improved business results□

*Editor’s Note: The author invites feedback about this article and about your VOIP application planning and implementation experience. Email to [marty@parkerbiz.com](mailto:marty@parkerbiz.com).*



**If you can’t justify a wholesale changeout, plan an incremental strategy**

### Companies Mentioned In This Article

- Microsoft ([www.microsoft.com](http://www.microsoft.com))
- Research in Motion ([www.rim.com](http://www.rim.com))