Best Practices for VoIP in the Contact Center
Part 2: Important Steps for a Successful Implementation

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With your VoIP implementation plan in place, the relationship you've built with your IT department and vendor will really come into play. Take advantage of this teamwork to get the most value out of your project.

Voice over Internet Protocol (VoIP) has reached a new level of maturity in the contact center industry. We can now shift the conversation from "Why should I do VoIP?" to "When and how should I move to VoIP?"

Because VoIP is such a rich, deep, and complex topic, defining best practices for planning, implementation and support requires more than one article. Our first article addressed how to plan for VoIP and the important decisions to make regarding virtualization, technical design, functional capabilities and other factors. This article, the second in the series, focuses on implementation. We hope it will help those who are on their way to implementing VoIP — or anticipate that they soon will be — take all the right steps to be successful.

BUILD A DETAILED PROJECT PLAN

Building a project plan marks the transition from planning to implementation. Oftentimes you can leverage the vendor's project plan as a starting point or for input in building your master, internal detailed project plan. Be aware, however, that the vendor's plan is generally very limited in scope, and you will probably need to document your detailed plan before the vendor's is available.

The project plan links all the key players. Table 3 in Part 1 of this article series detailed the cross-functional team members and their roles. Each team member has critical functions to perform to ensure a successful migration. While IT probably knows it needs to prepare the network, and telecom probably knows it needs to prepare the facility for installation, and operations knows it needs to prepare the staff for process change, the detailed project plan is the only way to reveal dependencies among the

Table 1: Traditional Voice and Data Network Characteristics

Voice (circuit switched)	Data (packet switched)
Temporary, dedicated connection	Permanent, shared connection
Continuous	Bursty
Time sensitive	Delay tolerant
Error tolerant but quality sensitive	Error sensitive
Mission critical	Traditionally tolerates downtime

▶Achieve Business Value Out of the Gate

Achieving business value isn't easy, especially right from the start. Sometimes it is tempting to implement "as is" to minimize the overall impact of change, with the goal to really apply the new system capabilities later. This approach is dangerous, as it is even harder to change after implementation, and companies often lose resources and momentum after cutover (and, therefore, never achieve the changes and optimal business value). Pursuing operational change after implementing new technology that replicates the old approach will require an ongoing commitment or a whole new project and team. Using a formal change management process can mitigate the impact of the overall change. Our recommended best practice is to embrace the change and maximize business value during initial implementation.

various tasks so these many efforts come together at the right times.

FIRST AND FOREMOST – PROPERLY PREPARE THE NETWORK

There are many things that lead to a successful implementation but there is one item that is *THE* primary enabler of success — the data network has to be properly prepared to carry voice! Often, IT feels its data network is ready for VoIP or

it can be with minimal changes. This position must be backed up by detailed assessment and testing. In reality, IT may need to make key changes and upgrades to make the network "VoIP ready."

A comparison of traditional voice and data network characteristics (see Table 1 below) reveals why moving voice onto a data network should not be trivialized. A network built for the behavior of data packets is not adequate for carrying voice as data packets.

The differences in voice and data characteristics drive the following requirements for VoIP:

> We need quality controls that prioritize voice (quality of service, or QoS).

> We need to monitor and manage performance (latency, jitter and packet loss) to acceptable levels.

> We need to use different protocols (RTP/UDP vs. TCP) that emphasize speed over accuracy.

> We need highly reliable, scalable, secure networks.

> We need standards for voice that are adopted by all (with session initiation protocol, or SIP, being the "winning" standard in today's market).

The addition of voice places new demands on the IT team even though many of the same principles for effective network and systems operation apply in creating secure communications and a scalable, reliable network. Voice traffic sizing must consider whether the voice is

compressed or not. This decision generally applies across the WAN but not the LAN (most LANs today have adequate bandwidth so don't require compression). Users accustomed to a "five nines" reliable voice environment expect their voice communications to continue to be available at all hours, in all circumstances. As we emphasize below, assessments, testing, and ongoing monitoring are keys to success.

Most likely, you will be putting voice on a converged (data and voice) network. Regardless, with VoIP you will be putting voice onto a network designed for data. Since voice and data communications have completely different characteristics, IT must monitor and manage the network differently to assure control of the voice packets for optimum delivery. Most companies apply QoS strategies to ensure tolerable delay in packet arrival (latency), variability (too late, too early or out of sequence) in packet arrival (jitter), and packet loss. For better network management and control, many change their network service between sites (across the WAN). Multi-protocol Label Switching (MPLS) is typically used as it enables voice packet prioritization.

Some companies take a more conservative approach and use a

> It is difficult to schedule enough time during implementation for testing and training, so be careful these crucial steps do not get lost in the rush to meet milestones.

Key Steps in the VoIP Implementation Process

Implementation Stage	Critical Steps
Develop detailed project plan	> Synchronize the efforts of vendor, IT, telecom staff and operations > Define tasks with due dates and dependencies
Prepare network	> Assess (vendor or third party) > Upgrade (routers, switches, capacity, etc.) > Validate (vendor)
Design	> Design skills and routing (across sites, media) > Review and modify work flows • Define interactions within or outside the contact center • Automate manual processes (e.g., sending & receiving faxes) > Review reporting for adequacy of standard reports; design custom reports as needed > Design prompting and self service (switch resident and/or IVR) > Determine the role of CTI in routing, screen pop and self-service and design screens, flows, integration architecture, etc. > Assess change to develop agent/supervisor training
Install	> Prep facilities — hardware, power, cables > Install hardware/software on site
Develop/ Configure	> Configure call flows in the system > Configure other parameters and elements in the system > Develop custom reports > Develop prompting/IVR — menus and self-service > Develop CTI workflows
Integrate	> Integrate switch, IVR, CTI if necessary (may be bundled) > Integrate with desktop and backend systems as needed > Integrate adjunct applications
Test	> Vendor tests — system operability after installation > User tests — functionality, usability, performance, load, failure/recovery, etc. • Call flows • Network capacity and resiliency • System redundancy and resiliency
Train	> Train administrators and users
Rollout	> Pilot (in production, with limited group) > Phase cutover (by site, group, function, etc.)

separate voice network to avoid either voice or data traffic suffering under load. This approach can solve network capacity projection concerns. It can also simplify the testing required. However, it comes at a greater network and resource cost.

A best practice is to have a thorough network assessment by your chosen vendor or a third party that specializes in network assessments. This assessment will identify changes required to your network for capacity and functionality, and may lead to switch and/or router upgrades or replacements. Your vendor needs to validate network readiness once you make the required upgrades. The data network must be load and quality tested prior to cutover as well as part of the ongoing network management.

Bottom line: For VoIP implementation success, the IT/networking staff has to guarantee that the network is secure, scalable and reliable to a degree to which it has not been accustomed for data communications.

DIVE IN — DESIGN, DEVELOP/CONFIGURE AND INTEGRATE

Each design step, without exception, requires cross-functional involvement and a commitment of the appropriate time and resources. Onsite design sessions with active participation from IT, Telecom, Operations (including call center and other business users) and vendors will contribute to a successful implementation. (Make sure consultative design sessions are included in the vendor statement of work, or SOW.) Also, trainers need to be involved in the design meetings so they can develop and deliver training prior to cutover. The following list details some of the top-

ics to discuss in these meetings:

> Routing for virtualization
> Call-flow design
> IVR usage
> Role of CTI
> Desktop applications — call/phone control/unified desktop/screen pop
> Multimedia contact routing

One of your main responsibilities is to manually document call flows, work flows, switch configuration and IVR set up into flow charts and spreadsheets so the vendor's design engineers can "translate" the design into the new solution. This is a demanding process and is the source of business value at cutover when changes are made to the existing configuration. The tradeoff is ease of design and translation if you keep everything the same versus achieving business value sooner when you approach the design as a "green field" opportunity for improvement.

Before the vendor can install the solution onsite, you must prepare the facilities. Many vendors offer a site survey as part of the design process. The vendor will detail necessary upgrades to racks, power, heating/cooling, ventilation, space and additional cable requirements. Work closely with your vendor to ensure that the implementation is not delayed due to unprepared facilities.

The vendor will then use the design session outcomes to configure your solution within their system. Include knowledge transfer and onsite time in your vendor SOW if you intend to manage your own system going forward.

The complexity of the integration process depends on the solution you have chosen. If you are implementing a suite solution with all components pre-integrated, the primary issue will be the overall integration with your legacy data sources and any additional adjunct applications. If your solution is a mix of components, the vendor may be providing the components and the integration. Otherwise, if the solution includes separate vendors, IT and the telecom staff (and potentially third-party integrators) will have a major integration effort to implement the total solution.

WHEN YOU'RE NEARLY READY TO LAUNCH — TEST, TRAIN, PILOT AND ROLLOUT

Once the project team has designed the solution and the vendor has installed and configured the system, the next step is to test the system. It is crucial as part of the planning and design to determine where and how a testing and a training environment will be set up. Both environments need to be "live" early enough to allow for adequate testing and training. The vendor will begin with system operability and will test that the solution "works" as designed, that all the components "talk" to each other, and that any integration for which they were responsible was successful.

Once the vendor has determined the solution is ready for user testing, you will test all call flows in detail including all IVR applications (self-service). Develop a test script that includes every call path for every call flow option and conduct all appropriate test types and scenarios. IT and telecom staff will need to test the network capacity and resiliency of the entire configuration. Vendor involvement in this testing varies but at the very least they should be standing by to solve problems discovered in testing and stand behind their design.

Representatives from training identify changes during the design session for supervisor, agent and administrative staff that will require training prior to cutover. Changes for the front-line staff may be significant — more than getting familiar with a new phone. There will most likely be a completely new desktop interface and functionality. The vendor will often be responsible for administrative training and train-the-trainer for supervisors and agents. Sometimes the vendor will deliver training materials and hold the initial training sessions for the frontline staff. Define the training approach in the vendor SOW.

It is difficult to schedule enough time during implementation for testing and training so be careful these crucial steps do not get lost in the rush to meet milestones. Additionally, the training cannot be so early that the frontline staff forgets prior to going live.

If organizational structure, systems and time allow, cutover can be more successful in a phased approach where any problems can be identified prior to a complete rollout. It is ideal to start with a small pilot group that tests the solution in production, with real customers. Once the pilot is successful, it is time for rollout generally by site, group, or function (rather than the "big bang" approach). Mitigate risks by cutting over during off-peak or closed hours.

COMPLETE THE VOIP IMPLEMENTATION PROCESS

With the system in production across groups and sites, the company should start to reap the business value from its new VoIP technology. However, as with any new technology and operational change, it may take a few months for things to settle in and for the teams to work out all the kinks. Then, support becomes

critical to optimize technology application to business needs.

VoIP is a different world that creates new issues and opportunities for IT, Telecom, and support functions in the contact center. We will address this issue in our final article in the series: best practices for supporting and effectively applying the new VoIP environment. •

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