

11.3.10 Details on the Voice and Video Telecom Proposed Solution

Current State and Future Vision

Today, the Commonwealth operates an extensive and diverse voice/telephony network along with selected video communications assets and circuits. The configuration has grown from the needs of individual agencies/departments, with limited opportunity to consolidate common facilities and practices across the Commonwealth as a whole. The following table provides a summary profile of the current voice/telephony environment.

VITA Service	Current State Attribute
Local Access (Telephony)	<ul style="list-style-type: none"> • 38,000 Analog Centrex Lines • 25,000 ISDN Centrex Lines • 7,000 Analog Business Lines • Primary Vendor: Verizon (87%) • 74 PBX & 212 Key Systems • 65 VoIP Systems & 2,165 Handsets • 111 PRI & 1,203 Other Circuits
Long Distance	<ul style="list-style-type: none"> • 190M Minutes / Year • Primary Vendor: MCI (95%)
Wireless Cellular & Paging	<ul style="list-style-type: none"> • 14,000 Cell Phones, 17M Minutes / Year • Primary Vendors: Alltel (74%), Nextel (26%) • 15,000 Pagers
Voice Mail	<ul style="list-style-type: none"> • 10,699 Centrex Accounts (17% Centrex) • 9,285 Premises Accounts
Audio Teleconferencing	<ul style="list-style-type: none"> • 308 Ports • 15,000 Conferences / Year • 20M Minutes / Year • Self Managed (VC)
Data Conferencing	<ul style="list-style-type: none"> • 9,400 Minutes / Year

The following table provides a summary profile of the current video environment, based on due diligence effort.



VITA Service	Current State Attribute
Video Conferencing Systems	<ul style="list-style-type: none"> • 40 Fixed Room Systems • 182 Portable / Desktop Systems
Video Conferencing Bridging	<ul style="list-style-type: none"> • 10 Conference Bridges • X Ports • Self Managed • Primary CPE Vendor:
Video Production	<ul style="list-style-type: none"> • 600 Billable Hrs. / Year

The Commonwealth provides basic voice and video services and functionality, at generally competitive unit costs. However, it has not fully capitalized on opportunities to reduce costs through optimization and application of efficient and effective practices, nor has it formulated a path for evolution to IP-based communications and voice/video/data convergence. The Commonwealth Partners' vision is designed to accomplish these goals.

The Commonwealth Partners envision a Voice and Video Services environment that closely aligns both agency-specific and enterprise-wide applications, intelligently leverages the scale of the Commonwealth for cost-effective connectivity, consistently delivers superior levels of service, and provides a challenging development opportunity for network staff. Our extensive experience with voice/telecom network development and operations within large State governments and enterprises allows us to rapidly complete the voice and video network environment take-over and transition that the Commonwealth is seeking, while reducing operating costs and raising critical service levels to the customer.

Solution Description

The Commonwealth Partners will deliver a Voice and Video Services solution that encompasses the following major elements:

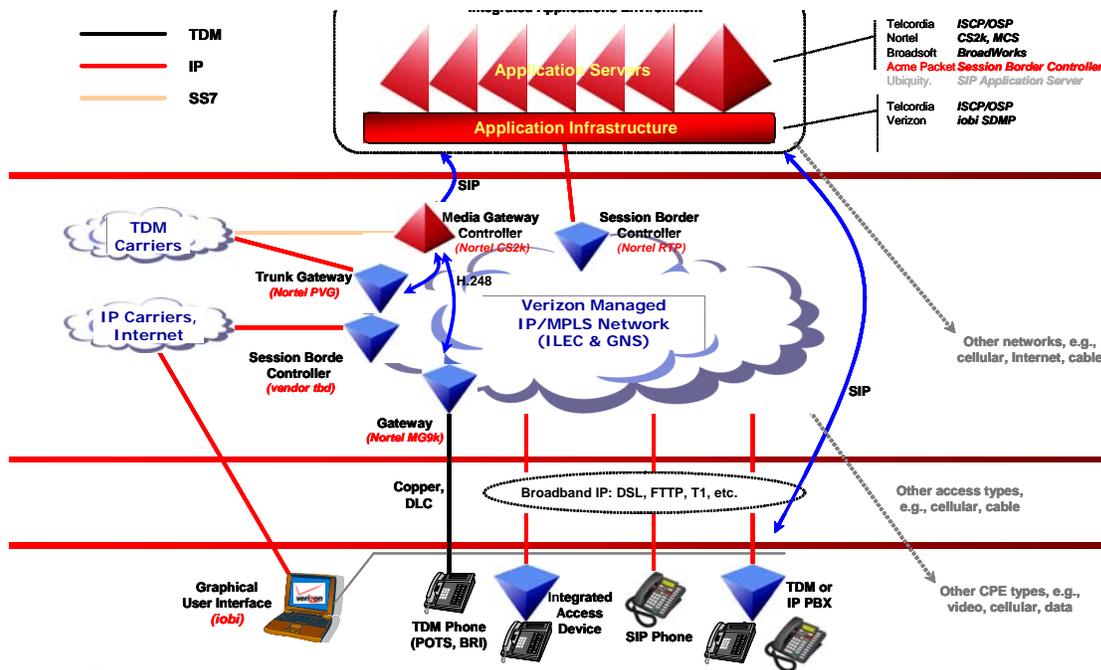
- **Assume responsibility for the Commonwealth's voice and video services** and operations
- Identify and **address opportunities for improvement**, including consolidating or eliminating duplicate facilities and standardizing services and operations
- Implement **common telecom management tools** (or interfaces to carrier-provided tools) for usage and cost tracking, reporting, asset/circuit management, usage and fraud detection/control, billing/charge-back, etc.
- Identify and target specific rates and charges for **re-negotiation with vendors**
- **Deploy alternative services and innovative technologies** (e.g., IBM's ViaScribe voice recognition technology) that offer incremental functionality to address critical agency needs, while maintaining commensurate cost-effectiveness levels
- Implement a **business-case justified migration strategy** for the deployment of **IP Telephony** and Voice-Video-Data Convergence
- Provide **services in accordance with target service level requirements (SLR)** under a simplified per-unit service pricing model

The target architecture for Voice and Video services at the Commonwealth is built upon IP-based standards and technology, including Voice over IP (VoIP) and IP Telephony (IPT). As described in the following section, a rigorous and disciplined approach will be applied to ensure that migration to

this target architecture is deployed over time while adhering to sound business/ROI justification criteria.

In view of the Commonwealth's already heavy use of Central Office-based telephone services (i.e., Centrex), the transition to IP-based target architecture will likely involve a hosted IP Centrex service as a central component of the solution. Verizon, a member of the Commonwealth Partners, has begun to offer such an IP Centrex offering, and will extend its coverage across the Commonwealth, enabling Commonwealth sites to be added as business-case and service availability criteria warrant a migration.

The underlying network architecture for a hosted IP service such as that offered by Verizon is illustrated in the following diagram. During the Transition Phase, the Commonwealth Partners will work to refine this conceptual architecture, adapt it to specific Commonwealth needs and locations, and establish an appropriate migration plan.



Source: Verizon

Transition Phase Development and Solution Implementation

The Commonwealth Partners will focus on several critical tasks during the Transition period, including:

- **Current state assessment and inventory** – complete/refine/update Due Diligence results
- Provide **voice network connectivity support for the Service/Help Desk** deployment in far-western Virginia
- **Review and transfer of carrier contracts**, to the extent that this proves advantageous to the Commonwealth
- **Voice and video services and solutions optimization**
- Evaluate specific opportunities for **deploying complementary innovative technologies in support of customer needs**

- Formulate a business-case justified **strategy for migration to Voice over IP (VoIP) and IP Telephony (IPT)**

The following paragraphs provide additional description on the last three points.

Regarding **service optimization and cost reduction**, the Commonwealth Partners believe there are significant opportunities to streamline voice and video services, consolidate operations and management, and drive efficient use of telecommunications and video services by Eligible Customers. Although voice telecom costs under VITA already benefit from competitive contract terms, we will evaluate opportunities for selective cost reduction/optimization across all relevant service segments, including a competitive rate review. In our experience with large governmental and corporate organizations, there are many mechanisms by which to gain additional economies in the use and operation of these services. These mechanisms cut across dimensions of technology, policies and procedures, management systems and processes, and user education and change management. Our team will evaluate opportunities for service optimization and cost reduction using a comprehensive analysis framework such as the one illustrated below:

Telephone Services		Telephone Cost Reduction Initiatives
Mobile	Cell Phone	<ul style="list-style-type: none"> • Optimize voice device selection protocol • Optimize users available minutes SVC plan • Introduce reimbursement caps on cellular plans • Reduce roaming charges by targeting high-roamers • Develop and communicate “Best Practices”
	Calling Cards	<ul style="list-style-type: none"> • Cancel and reissue only selected calling cards
	AV Conferencing	<ul style="list-style-type: none"> • Use conference feature on regular phone instead of setting up a bridge when attendance is small
Inbound Toll-free		<ul style="list-style-type: none"> • Optimize call routing to avoid multiple call transfers • Incentives for customers to use web/email services
Long Distance		<ul style="list-style-type: none"> • Selective country call blocking • Optimize call routing through lowest cost carriers • Limit number of telecom service providers (carriers) • Renegotiate LD rates • Introduce awareness programs to reduce usage
Local		<ul style="list-style-type: none"> • Pay-per-call blocking • Increased use of electronic messaging • Increased use of voice messaging vs. direct dialing • Audit of telephone lines not in use

Illustrative

In the area of **innovation**, the Commonwealth Partners will seek opportunities to introduce technologies that can cost-effectively yield functional, performance, productivity, and other benefits aligned with the business requirements of the Eligible Customers. A prime example is IBM’s Access Suite ViaScribe Voice Recognition Application Solution, which can provide business benefit to the Commonwealth in several potential areas, including:

- In Help/Service Desk environments, by reducing training costs and improving CSR consistency.
- For “Train-the-Trainer” requirements, this service will allow us to provide real-time, multimedia (audio, text, documents, and video) training materials establishing consistency and reuse.

- Enable capture and caption of text from Webcasts and streaming video for important events (e.g., Governor's speeches)

Regarding **network migration and data/voice/video convergence**, the Commonwealth Partners brings considerable experience in the formulation of business-justified strategies for migration to IP-based communications for both government agencies and enterprises. IP Convergence is typically conceptualized as the consolidation of real-time voice, video, and data services onto a single IP communications network infrastructure, and includes cases such as the following:

- Voice over IP (VoIP) – Telephone-quality voice is digitized, packetized and sent to a destination on an IP network. There are several flavors – VoFR, VoATM, VoE.
- IP Telephony – IP-enabled telephone handset and switching system(s) that can utilize IP services such as DNS and automatic call routing.
- IP Voice Trunking – This concept is most typically implemented for the bypass of toll calls utilizing traditional telephony carrier networks.
- IP Video – Sensing required Quality of Service, packetized real-time and on-demand video traffic is transported using intelligent IP routing techniques.
- UC / UM – Unified Messaging / Unified Communications

Our team will evaluate the present and future needs at the Commonwealth, and the suitability for IPT/Convergence solutions, and will formulate a gradual and business-case justified strategy for migration to Voice over IP (VoIP) and IP Telephony (IPT) that takes into account:

- Agency application and functionality needs
- Embedded technology base
- Economics of IPT/VoIP relative to current local services (Centrex) that are priced very competitively
- The experience the Commonwealth Partners team has accumulated in deploying ROI-based IPT solutions within State government and other large enterprises,

We will use evaluation criteria and a framework such as the one below (which illustrates the different scenarios for IPT deployment along with the corresponding types and relative magnitude of savings/benefits achievable for each scenario) to initially identify attractive opportunities for IPT migration.



Deployment Scenario	Greenfield	Replacement			
		Centrex	Branch	Old PBX	New PBX
Reduced network infrastructure costs – converged voice and data network cabling, elimination of branch office PBXs	\$\$\$	-	\$\$\$	\$	\$
Lower maintenance and support cost due to increased staff productivity	\$	-	\$\$	\$	\$
Simplified provisioning and network management, easy addition of new sites	\$	\$	\$\$	\$	-
Lower Move/Add/Change (MAC) costs	\$	\$	\$	\$	\$
Toll-bypass, on-net calling for free		\$	\$\$	\$	
Increased user productivity – unified services, existing voice services easier to use, remote access for business travelers	*	**	*	**	-
Capability to provide new services and applications, web-telephony integration	*	**	*	*	*
Lower future expansion and upgrade costs	*	*	*	*	-
Overall User Benefit	Highest	High	Highest	High	Medium

\$: Financial Benefit
* : User enhancement

After initial screening, the candidate migration cases are subjected to rigorous business-case justification assessment, to ensure that a favorable return is achievable through the adoption of these technologies. An illustration of the practical evaluation considerations we apply in this process is depicted in the table below. This example includes a subset of the major questions, as well as the corresponding specific screening questions that follow. Similar assessment questions are applied for operational and technical aspects of the customer environment.

Customer Environment Assessment Questions	Detailed Evaluation and Screening Questions
<i>What are your primary business drivers for IP Telephony?</i>	How do your current voice and data networks (converged or otherwise) meet these drivers? What is the opportunity cost of not going to IPT given your current infrastructure? How was this calculated?
<i>What are the current SLAs for your data network?</i>	What modifications have to be made to your data network service provider contracts in order to accommodate voice traffic over this network? Vice-versa: modifications to your voice contracts given that the voice traffic will migrate to the data side? How long do you expect it will take for these modifications to go into effect?
<i>What are the financial penalties that will be incurred from your voice contracts when usage drops due to shifting voice over to the data network?</i>	Such as missing minimum annual commitments? Have these penalties been factored into the business case for IP Telephony across the WAN? How?
<i>What is the amount of to-be depreciated telephony assets on your books?</i>	How was this figure determined? What is the depreciation profile of these assets? What is the physical and functional distribution of these assets?
<i>How much of your current assets can you continue to use in the IPT environment?</i>	What were the criteria used for them to stay vs. go?
<i>Have day 2 support costs been considered in calculating the ROI for the business case for IP Telephony?</i>	How about differences in amortization rates between legacy and new equipment?
<i>Have the financial consequences of making the target IP Telephony solution compliant with corporate policies been factored in the business case?</i>	In terms of compliance with items required by corporate policies such as security, BCP / DR, regulatory... How were these quantified?

Additional qualifying criteria are provided for video applications under consideration for IP-based solutions. The table below illustrated some of the most relevant considerations.

Video Integration
<ul style="list-style-type: none">• Requirement for Video Conferencing to the Desktop• Need for continuous corporate training using video conferencing features• Existing Room Systems at capacity / end-of-lifecycle• User dissatisfaction with operational complexity of existing room systems• IP Data network with excess capacity and/or video prioritization capability• Introduction of web based customer video support

Voice and Video Telecom Services Management

The Commonwealth Partners will coordinate centralized monitoring of the voice and video network 24 hours a day, 7 days a week by in-scope carriers via the Network Operations Center (NOC), which will dispatch and coordinate onsite support at customer locations. In addition to the NOC, the Commonwealth Partners will have onsite staff at all major locations for IMAC maintenance and break/fix activity.

The Commonwealth Partners Help Desk will be a single-point-of-contact (SPOC) for all voice and video telecom services managed by the Partners. Upon receipt of an alarm from a carrier or upon notification of a problem from an End-User, the Commonwealth Partners' staff will perform reactive management as needed. They will accept, track, report, perform, and manage the resolution of these problems.

As VITA's agent, the Commonwealth Partners' resources would maintain strong working relationships with all third-party providers and on-site personnel to monitor service delivery and network performance and escalate troubles for resolution.

Benefits of the Proposed Voice and Video Solution

The Commonwealth and its end users will receive tangible benefits from this Voice and Video Services solution, including the following:

- Potential cost savings from optimized voice service utilization and tariff optimization (experience in similar situations has yielded savings of over 10% in selected areas, such as cellular usage and rate plan optimization, Long Distance tariff renegotiation, and audio/video conferencing efficient-use practices), which translate into reduced unit-cost of service to the agencies
- Consistent and improved service levels, based on comprehensive use of monitoring and reporting tools and processes, centered around the NOC
- Business-justified deployment of innovative technologies such as voice recognition and IPT
- Network modernization/re-engineering and "service provider delivery model" provides attractive development path for absorbed staff