

Attachment D - Business Case



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SUNCOM Enterprise Voice Services Business Case Development for the Department of Management Services

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1 EXECUTIVE SUMMARY

1.1 Purpose

The Department of Management Services (DMS) is considering a competitive procurement for a newly structured Enterprise Voice Services (EVS) telecommunications infrastructure service and support contract. EVS would be a new service in the telecommunications portfolio under the DMS brand name SUNCOM. The EVS procurement is intended to establish a multiyear strategic partnership to reduce the cost of services and increase the long-term value to the state.

Inspired Technologies, Inc. was contracted to develop this business case in accordance with Chapter 287.0571, Florida Statutes, which stipulates contracting with private sector vendors whenever vendors can more effectively and efficiently provide services and reduce the cost of government. The statute further requires a business case be conducted to evaluate feasibility, cost-effectiveness, and efficiency before the state agency proceeds with any outsourcing of services.

This document focuses specifically on services that would be replaced or impacted by EVS, and thus are directly related to establishing a recommendation path for the best and most appropriate EVS delivery model to replace the current statewide voice services telecommunications portfolio. These services will be used by State of Florida agencies and may be used by additional entities described in sections 282.704-282.706, Florida Statutes. The department's current voice services contracts end over a period spanning 2015-2019. The competitive procurement will establish the foundation for all of DMS' subsequent improvement projects within the voice services framework. The Department of Management Services anticipates replacement of these services hereafter referenced as "Enterprise Voice Services".

In summary, this document provides substantive information that can be utilized to make informed decisions for the future procurement of EVS.

1.2 Detailed Description of Services

Section 287.0571 (4)(a), F.S. - A detailed description of the service or activity for which the outsourcing is proposed.

The Department of Management Services is considering a new procurement for services and activities that are currently outsourced to AT&T, Verizon, CenturyLink, EarthLink, Citrix Conferencing, BT Conferencing, Cisco, Avaya, and Unify (formerly Siemens) as follows:

Voice

- Local Phone Service (Centrex)
- Long Distance Phone Services
- Toll-Free Phone Services
- SUNCOM Telecommunications Equipment on-Premise Service (STEPS)
- Hosted Voice Over IP Services (VIPS)
- Session Initiation Protocol (SIP) trunking Services
- Hosted Interactive Voice Response (IVR) Services

Conferencing

- Reservation-less Voice Conference Services
- Video Conference Services
- Web Conference Services

1.2.1 Voice Services

Voice services provide local dial tone using either a central office (CO) service, such as Centrex, or an on-site platform, such as a PABX or Electronic Key system. Under Centrex service, the customer is responsible for providing the instruments, key systems, and other equipment on their premises. Through the SUNCOM long distance network, customers may place voice, fax and dial-up data calls within the Continental United States, Canada, and portions of Puerto Rico at low rates. SUNCOM transports 20+ million minutes of long distance calls per month under contracts with long distance providers.

Local Phone Service (Centrex)

SUNCOM provides local phone access primarily through a service known as “CENTREX”. In addition to providing toll free local calling within a region known as Local Access Transport Area (LATA)¹, CENTREX provides features and options like access to SUNCOM’s long distance service, caller ID, voice mail, call forwarding, etc. Incumbent Local Exchange Carriers (ILECs) such as AT&T, CenturyLink and Verizon provide this SUNCOM Local Service within their designated Local Access and Transport Area (LATA).

SUNCOM’s local service also provides alternatives to CENTREX for customers that own and maintain switching equipment on site known as Private Branch Exchanges (PBXs) which move some of the functions and features from telephone company facilities to the customer’s site. This allows customers to use shared access lines provided by SUNCOM.

Charges for each of these local phone services and features are fixed monthly fees invoiced through SUNCOM.

Long Distance Phone Services

SUNCOM Long Distance Service allows local service customers to place calls outside the local area (or LATA) throughout the United States and Internationally. For large customers, SUNCOM can provide “Dedicated” circuits to make long distance calls. Smaller customers use SUNCOM’s “Switched” Long Distance at a slightly higher price.

Long distance telephone calls are charged incrementally (per minute) on monthly invoices through SUNCOM.

¹ LATAs were created to implement the divestiture of the Regional Bell Operating Companies such as Bell South from AT&T at January 1, 1984 pursuant to the Modified Final Judgment overseen by a U.S. Federal District Court. At the time LATAs had crucial importance and meaning in terms of the public circuit switched network that existed at the time of Divestiture – LATAs defined where network assets and operations were divided between AT&T and the RBOCs. But LATAs have little importance today and remain essentially as a historical artifact. LATAs no longer define market areas.

Toll-Free Phone Services

SUNCOM offers customers the ability to establish in-bound toll free services with available "vanity" phone numbers. Customers can designate toll free numbers for in-state, national and (limited) international toll free calls. Offered with many enhanced service feature options, this SUNCOM service terminates on local telephone lines/trunks where it is handled like any other incoming telephone call.

Toll free telephone calls are charged incrementally (per minute) on monthly invoices through SUNCOM.

STEPS

STEPS offers telephone switching equipment known as Private Branch Exchanges (PBXs) at the customer's site. PBXs move some of the functions and features from telephone company facilities to the customer's site. This allows customers to use fewer access lines, or "trunk" lines that share access among their staff. PBXs also give customers more direct control over features such as voice mail and call routing within their organization.² PBXs have been around from near the beginning of telephone services but modern PBXs almost exclusively provide Voice over IP (VoIP).

STEPS equipment is purchased through State Term Contracts thus not invoiced through SUNCOM. Ongoing support and rental of STEPS equipment however, are invoiced through SUNCOM. Associated trunk lines and data circuits are also invoiced through SUNCOM for many customers.

Hosted Voice over IP Services (VIPS)

Voice over Internet Protocol Service (VIPS) is among the latest telephony communications technology provided by SUNCOM. Unlike standard telephone lines, VIPS utilizes the MyFloridaNet data network as the underlying infrastructure for placing calls. With the use of this technology, SUNCOM customers have the ability to integrate voice and data services into a single network application.

Voice over Internet Protocol services developed as network technology in the Public Switched Telecommunications Network evolved from TDM-based (Time Division Multiplexing) circuit switching to Internet Protocol (IP) networking. As described below, IP networking has become the standard technology deployed in the PSTN.

SIP Trunking Services

A SIP Trunk is used to set up communications between an enterprise IP-PBX and telecommunications service providers' network services. The MyFloridaNet data network is the underlying infrastructure that provides secure and reliable access to the SIP trunking service providers.

Hosted Interactive Voice Response Services

Interactive Voice Response (IVR) services require little or no start-up cost. Charges are based on usage and professional services development is priced by the hour. Speech recognition is also available and priced on an individual case basis. The provider will deliver a quote based on the professional service hours required. These services require no term commitment and are easily procured with existing DMS contracts. The DMS

² PBX provides essentially the same functionality as Centrex services, with the difference being where the switching function is located – at the customer premise versus the telephone company central office.

hosted provider also offers high-end operator services for use as primary and/or backup and emergency live services. These services are priced by the minute.

1.2.2 Conferencing Services

Audio Conference Services

SUNCOM offers two types of audio conference services: Meet Me and Event Call Services. Meet Me provides on-demand audio conferencing, allowing the customer to initiate a conference call 24 hours a day, 7 days a week for up to 150 participants without the need to make a reservation. Regardless of the time of the day or how quickly you need to set up a conference call, Meet Me conferencing allows you the freedom and access to coordinate a conference on your schedule. Event Call conference services are ideal for those high profile conference calls when you need a more professional touch. In addition to being able to select from many features such as record, replay, transcription and Q&A, a customer will have the ability to consult privately with fellow speakers in a private, “back-stage” sub-conference.

Web Conference services

Web Conferencing is used to conduct live meetings, training, or presentations via the Internet. This enables customers to share projects, data, presentations, and ideas from and to any computer connected to the Internet and a telephone.

Charges for Web Conferencing are fixed monthly fees to conference sponsors invoiced through SUNCOM.

Further detailed discussion of the EVS service portfolio can be reviewed in Section 2, Background.

1.3 Current Service Performance

Section 287.0571 (4)(b), F.S. A description and analysis of the state agency's current performance, based on existing performance metrics if the state agency is currently performing the service or activity.

SUNCOM Voice Services are provided today through a number of contracts segmented by type of service, such as Local, 800, and Long Distance services. The service offerings are established over network and service layers to ensure high availability and highly reliable (HA/HR) topologies backed by stringent performance and operational service level commitments. These commitments require guaranteed response times and other performance measurements, with associated user credits for service provider non-compliance. The SUNCOM voice service portfolio has established levels are designed to ensure stated performance and delivery expectations are met. Credits for non-compliance with required service levels are applicable on a per incident basis, and apply to all provided services by the service providers.

SUNCOM Network Operations Center (NOC) works in conjunction with SUNCOM customers and SUNCOM representatives to restore service outages and/or resolve service issues. In the event an SLA violation occurs, credits are applied to the impacted SUNCOM customer's account as appropriate.

DMS SUNCOM representatives meet with the incumbent service providers on a monthly basis to review outage and performance degradation reports as part of managing these service levels. Any applicable service provider non-performance penalties are credited to the user's monthly invoice for the affected site.

The performance levels for a portfolio of services as described in this business case will require a thorough review of existing service providers' SLA's, coupled with lessons learned and technical requirements to ensure EVS is properly implemented beyond the current service levels. This will be critical to the SUNCOM customer base given the continued evolution of voice and multi-media convergence in the future.

1.4 Goals for Proposed Outsourcing

Section 287.0571 (4)(c), F.S. The goals desired to be achieved through the proposed outsourcing and the rationale for such goals.

Meeting DMS' primary goals requires identification, evaluation and consideration of options to determine the course that provides the best long-term value to the state, reduces the cost of services, and ensures adaptability for future network growth demand, customer needs, processes and law changes. The state also has an objective to meet the needs of the enterprise with a best-in-class, statewide voice services solution that provides the highest levels of availability, reliability, technological expansion, ease of implementation and continued evolution. The current voice service portfolio is a very mature offering that is utilized throughout the state. As a result, agencies have built systems and processes that rely heavily on the technological structures that are in service today. The degree and/or depth to which agencies are using these services are widely variable depending on specific agency telecommunication needs. This means flexibility will be important for individual agencies in any transition to EVS.

DMS' performance objectives for EVS are stated by the following guiding principles:

- Improved, more effective enterprise communications.
- Increased customer and Information Technology productivity.
- Greater operational resilience (highly-available and highly-reliable).
- Excellent customer service.
- Reduced costs for all services including hardware, software, and maintenance.
- State-of-the-art management and monitoring capabilities.
- Improve customer service offerings to all Other Eligible Users (OEU).³
- Establish best-in-class statewide EVS solution.
- Establish best value to the state through strategic sourcing, standardization, and process improvement.
- Manage administrative costs through improved efficiencies of organizational oversight responsibilities.
- Improve service layer capabilities based on DMS customer needs.
- Faster and improved service delivery.
- Improved accuracy and simplification of invoicing.

The EVS procurement should address the following:

- Manage the ending/transition of the current voice services contracts to ensure no customer impacting events take place.
- Improve the cost structures for all service layers to DMS customers.
- Provide improved service features based on evolving technological needs.

³ Other eligible users of State Term Contracts include those local government entities identified in Rule 60A-1.005, Florida Administrative Code. DMS has categorized these "other eligible users" internally for financial management and reporting purposes as cities, counties, college, courts, non-profit entities, schools and universities.

- Competitively procure EVS through negotiation to drive best value.
- Drive down the current cost of voice services (approximately \$45.9 million in FY 2013-14).

1.5 Outsourcing Authority

Section 287.0571 (4)(d), F.S.- A citation to the existing or proposed legal authority for outsourcing the service or activity.

Section 282.702(8), F.S., authorizes DMS to establish a telecommunication solution. Specifically, this section allows DMS “To control and approve the purchase, lease, or acquisition and the use of telecommunications services, software, circuits, and equipment provided as part of any other total telecommunications system to be used by the state or its agencies.” Based upon this authorization, DMS procured telecommunications voice service solutions through multiple vendor providers and bundled under the total telecommunications portfolio known as SUNCOM. The Department of Management Services is seeking to continue services to state agencies through a competitive procurement of SUNCOM EVS based on the recommendation of this business case.

1.6 Descriptions of Available Options

Section 287.0571 (4)(e), F.S. - A description of available options for achieving the goals. If State employees are currently performing the service or activity, at least one option involving maintaining state provision of the service or activity shall be included.

This business case examines three options specifically for the scope of continued support, integration, and installation of EVS and ancillary features/capabilities following the expiration of the current voice service contracts over a period of 2015-2019. The options evaluated are to perform an outsourced competitive solicitation, and the combination of both outsource and insource with variable transition periods.

These options are evaluated and included in this business case because they are within the scope for outsourcing as required by Chapter 287.0571, F.S. and they represent common procurement options utilized by the state for similar needs.

Forms of procurement reviewed in this business case:

Competitive Procurement - Section 287.057, F.S., and the Department of Management Services Rule 60A-1, Florida Administrative Code, provides:

Invitation to Negotiate (ITN) – Used when the agency knows the desired end result, but is not sure how to get there; or, there are many ways to get to the end result; or, the qualifications of the provider and quality is more important than price. This option works best when highly technical and/or complex services are being acquired. The price structure for services is negotiated. *Note: most voice services were services originally procured via ITN, although Centrex services were procured originally via RFP.*

Invitation to Bid (ITB) – Used when the agency knows exactly what it wants. Price is the determining factor in the award.

Request for Proposal (RFP) – Used when the agency has a general idea of what it wants. Services and price are evaluated.

Combination of Insource and Outsource - through the migration of service processes currently provided by incumbent vendors to DMS using resources that are state employees full-time equivalent (FTE) positions; and

outsourcing elements of operations that fall outside of the physical or technical capabilities of DMS, such as procurement of local loop access transport, maintenance & repair, etc.

Insource - Is an organization's termination of the contracting for a business function and the commencement of performing it internally. Insourcing is a business decision that is often made to maintain control of critical functions or competencies that are essential to the organization's mission. Insourcing is widely used to reduce costs across the organization's fiscal structures. Within the context of this business case, this represents the opportunity to bring essential services inside DMS that were traditionally performed by an outsourced vendor.

Outsource - Is the contracting out of business processes and services to a third party. Within the context of this business case, this represents establishing a portfolio of processes and services by a third-party vendor who is for-profit in support of needs that are beyond the capability of the DMS resources.

1.7 Recommendation

The Department of Management Services has multiple contracts⁴ for the various voice services that are nearing end of service outsourcing for the portfolio of SUNCOM Voice Services. This business case examines options for the future path of moving SUNCOM Voice Services to a strategic EVS with scalability built into the service portfolio to evolve with emerging unified multi-media technologies. The business case takes into consideration the statutory requirements and evaluates whether to continue to outsource these services, or pursue providing a prescribed level of services using a combination of state agency resources and outsourced services.

It is recommended that DMS issue a combination insourced and outsourced competitive procurement as an Invitation to Negotiate (ITN) for a newly structured enterprise voice services portfolio and support contract as outlined by Option 2. This procurement should identify and incorporate a SIP enabled Voice over Internet Protocol (VoIP) delivery methodology with integration to MyFloridaNet (MFN) for data connection to state agencies.

Consideration should be given to this procurement being limited to a single vendor for bulk services to increase the state's purchasing power.

The business case examines all aspects of the fiscal components, qualitative/quantitative benefits and advantages, risks, disadvantages, pros and cons, assumptions, constraints, projected schedule, and sequence of key activities or events.

Throughout the document, there are numerous recommendations and discussion points for consideration. These statements have been summarized in section 5.3.1 Business Case Recommendations Summary.

⁴ These contracts are further described in Section 3.1, below.

2 Background

Deployment of new IP-based voice communication technologies to SUNCOM customers has been limited in scale and functionality thus far. The overall design of the SUNCOM Network for voice communication remains based on legacy technology using TDM and SS7. Even Voice over Internet Protocol (VoIP) calling on the SUNCOM network and VoIP calling from Internet Protocol (IP) enabled Private Branch Exchanges still depend upon gateways to Public Switch Telephone Network (PSTN) legacy technology. The SUNCOM Network does not provide a unified comprehensive, statewide solution with a consolidated, feature-rich directory for all SUNCOM phone numbers. Native VoIP calling throughout the State of Florida enterprise, being the integration of VoIP capabilities for all agencies is rapidly expanding, which will improve the service layer over time.

The SUNCOM Network portfolio currently includes the following segmented voice communication services:

2.1 Voice Services

The Department manages separate contracts for voice services with multiple service providers today. There are nine types of services provided by these contracts. It should be noted that the volume figures presented in the Section 4, Options & Cost Benefit Analysis change over time due to technology and customer choice.

2.1.1 Legacy Centrex

A Telco-based telephony service providing PSTN access to handsets over legacy circuits from a commercially shared hardware platform. The service provider owns and operates the central office equipment. The handsets are owned and maintained by the customer. Approximately 92,000 users subscribe to this telephone service.

2.1.2 IP Centrex

A Telco-based VoIP service providing PSTN access to handsets over dedicated IP data circuits from a commercially shared software platform. The service provider owns and operates the central system. The handsets are owned and maintained by the customer. Approximately 19,000 users subscribe to this telephone service.

2.1.3 ISDN Services: Basic Rate Interface (BRI) and Primary Rate Interface (PRI)

A legacy voice communication circuit providing PSTN access to PBX equipment owned and maintained by the customer. Approximately 750 PRIs are installed to customer PBXs. Another form of ISDN access is Basic Rate Interface which provides digital access at the subscriber level.

2.1.4 Hosted Voice over IP Services (VIPS)

Voice over Internet Protocol Service (VIPS) is among the latest telephony communications technology provided by SUNCOM. Unlike standard telephone lines, VIPS utilizes MyFloridaNet data network as the underlying infrastructure for placing calls. With the use of this technology, SUNCOM customers have the ability to integrate voice and data services into a single network application. Customer utilization of this new service is emerging.

2.1.5 Hosted Interactive Voice Response Services

Interactive Voice Response (IVR) services require little or no start-up cost. Charges are based on usage and professional services development is priced by the hour. Speech recognition is also available and priced on an individual case basis. The provider will deliver a quote based on the professional service hours required. These services require no term commitment and are easily procured with existing DMS contracts. The DMS hosted provider also offers high-end operator services for use as primary and/or backup and emergency live services. These services are priced by the minute.

2.1.6 Session Initiation Protocol (SIP) Trunking

A SIP Trunk is used to setup communications between an enterprise IP-PBX and telecommunications service providers' network services. The MyFloridaNet data network is the underlying infrastructure that provides secure and reliable access to the SIP trunking service providers.

2.1.7 SUNCOM Telephony Equipment Premise-based Services (STEPS)

STEPS is a premise-based telephony equipment service providing PSTN access to handsets using dedicated equipment located on premise. The equipment is either owned by the customer or rented from the service provider. State agencies are required to purchase annual management and support to ensure system longevity and performance. The Department manages a separate contract for STEPS with Avaya, Cisco and Unify (formerly Siemens). Twenty-three state agencies subscribe to this service and total spending on these contracts by the state agencies is approximately \$7.3 million annually.

2.1.8 Long Distance

Long distance is a calling service for customers to place out-going nationwide and international calls. Dedicated legacy circuits are installed by the service provider to either of the two telephony systems described above and the customers pay a flat per minute usage fee. For customers with a lower volume of calls, the switched long distance service is provided, and the customers pay a slightly higher flat per minute usage fee. The Department manages a contract with CenturyLink (now contracted through EarthLink) for dedicated long distance calling and another contract with EarthLink for switched long distance calling. Approximately 600 customers subscribe to long distance service with approximately 500,000 telephone lines or direct inward dial (DID) phone numbers. The average number of total long distance usage is 10.5 million minutes each month and total spending on these contracts is approximately \$3.1 million annually.

2.1.9 Toll-Free

Toll-free is a calling service with intelligent voice recognition (IVR) to receive and route incoming long distance calls from customers to telephony systems or call centers. The service includes flexibility to route incoming calls to single or multiple destination(s) based on resource schedules, call volume, or other criteria. This automated attendant works to deliver the calls to the appropriate call takers. The Department manages a single contract for toll-free calling with EarthLink. The average number of total toll-free usage is 37 million minutes each month and total spending on this contract is approximately \$12 million annually.

All contracts are designed to fit with the Department's business model whereby order processing and payments are centralized. Service providers of each contract submit invoices to the Department, and the Department then invoices the agency customers individually.

Maintaining separate contracts for each type of voice communication service was appropriate prior to the Telecommunications Act of 1996; however, the evolution of technology and expansion of services provided by each service provider makes it possible to design and implement an enterprise voice communication system for all services in a comprehensive manner. The Department recognizes potential efficiencies and cost savings if the voice communication service provided on the SUNCOM Network were redesigned to utilize new technology and new service delivery methods.

2.2 Conferencing Services

SUNCOM provides a solution for conference needs at two levels, Audio and Web based solutions. Eligible customers statewide rely upon the stability and security of using SUNCOM conferencing services to save time and dollars.

2.2.1 Audio Conference Services

SUNCOM offers two types of audio conference services: Meet Me and Event Call Services. Meet Me provides on-demand audio conferencing, allowing the customer to initiate a conference call 24 hours a day, 7 days a week for up to 150 participants without the need to make a reservation. Regardless of the time of the day or how quickly you need to set up a conference call, Meet Me conferencing allows you the freedom and access to coordinate a conference on your schedule. Event Call conference services are ideal for those high profile conference calls when you need a more professional touch. In addition to being able to select from many features such as record, replay, transcription and Q&A, a customer will have the ability to consult privately with fellow speakers in a private, “back-stage” sub-conference.

2.2.2 Web Conference services

Web Conferencing is used to conduct live meetings, training, or presentations via the Internet. This enables customers to share projects, data, presentations, and ideas from and to any computer connected to the Internet and a telephone.

Charges for Web Conferencing are fixed monthly fees to conferences sponsors invoiced through SUNCOM.

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3 Technology Analysis & Recommendation

3.1 Description of Current Contracts

The SUNCOM portfolio of services encompasses both legacy and emerging telecommunications capabilities. As described in Sections 2, 3.3 and 4.3.1, the service delivery is comprised of traditional Time Division Multiplex based services to fiber/Ethernet based service layers. Agencies today leverage the SUNCOM portfolio within agency budget constraints for utilization of emerging unified communications capabilities coupled with existing infrastructure procurement that is within life cycle usage spans. Total SUNCOM voice services revenues as billed in total to all categories of eligible users for FY 2013-14 are shown by contract:

Note: All charts within this section may have differences in line totals due to bulk rounding calculations from source data.

<u>Contract</u>	<u>Original Execution</u>	<u>Contract Expiration with Renewals (or Extensions)</u>	<u>FY 2013 - 14 SUNCOM Revenues</u>
AT&T Centrex/Local Services	February 1, 2007	December 31, 2018	\$ 16,039,185
CenturyLink Centrex/Local Services/IVR	February 9, 2009	July 1, 2019	\$ 14,079,123
Verizon Centrex/Local Services	May 22, 2009	July 1, 2019	\$ 6,163,783
Less: Switched LD included in Local Service			\$ (968,170)
EarthLink Toll-Free 800	April 10, 2009	September 1, 2019	\$ 9,817,324
EarthLink Long Distance	September 9, 2011	November 1, 2021	\$ 4,071,242
BT Voice Conferencing	May 1, 2012	June 30, 2018	\$ 1,110,129
Citrix Web Conferencing	28-Apr-14	27-Apr-18	\$ -
			<u>\$ 50,312,618</u>

Figure 1 - DMS Contracts

The following sections will break down each of these totals by various categories and organization to provide further insight into the service expenditures.

The contract expiration dates shown include additional renewals planned to facilitate a smooth transition for users to the new EVS contract. These contract dates may be extended if needed to complete the migration to EVS. Note that the Citrix Web Conferencing contract was recently executed and no services were billed in the most recent fiscal year.

3.2 SUNCOM Voice Services

Voice services historically have been distinct from data services, but voice, data and video services are now converging and can be provided over a transformed telecommunications network using Internet Protocol.

State entities and other eligible users spent \$50.3 million in FY 2013-14 on SUNCOM voice services. DMS also supports acquisition of premise equipment such as handsets and communications systems for voice services through the STEPS (SUNCOM Telephony Equipment Premise-based Services) program. STEPS is a separate program and set of contracts, and is further described in Section 4.12, below.

3.2.1 Voice Services Utilization by Category of User

SUNCOM Voice Services utilization for FY 2013-14 breaks out among the categories of eligible users as follows:

Type of User	Total Voice Revenue
State	\$ 30,324,319
School	\$ 4,862,576
County	\$ 4,164,765
City	\$ 3,469,578
Non Profit	\$ 3,412,844
University	\$ 1,946,446
Other	\$ 1,045,124
Courts	\$ 384,082
College	\$ 356,401
Legislature	\$ 346,483
Grand Total	\$ 50,312,618

Figure 2 - Voice Services Utilization by Category of User

The State of Florida is clearly the predominant user of SUNCOM voice services, but other eligible users such as schools, counties, non-profit entities, and Florida’s cities also make material use of SUNCOM voice services.

Note: total voice revenue does not include STEPS revenues.

Utilization of the “local” subgroup of SUNCOM Voice Services breaks down between the categories as follows:

Type of User	Local Service	Hosted VoIP	SIP
State	\$ 12,427,613	\$ 1,742,049	\$ 282,783
School	\$ 4,501,571	\$ 116,752	\$ 41,490
County	\$ 3,377,244	\$ 122,493	\$ 15,822
City	\$ 2,926,852	\$ 407,593	\$ -
Non Profit	\$ 2,380,858	\$ 83,868	\$ 7,634
University	\$ 1,365,468	\$ 40,690	\$ -
Other	\$ 1,045,124	\$ -	\$ -
Legislature	\$ 338,541	\$ -	\$ -
College	\$ 244,171	\$ -	\$ 23,234
Courts	\$ 203,019	\$ 145,280	\$ -
Grand Total	\$ 28,810,463	\$ 2,658,725	\$ 370,963

Figure 3 - SUNCOM Local Voice Services

State agencies are the predominant users of these services, but cities, counties, schools and non-profit organizations also make significant use of these local voice services. As is required for state agency users,

other eligible users also need to install one or more MFN access circuits to utilize Hosted VoIP or SIP services.

Utilization of the “long distance” subgroup of SUNCOM Voice Services breaks down between the categories as follows:

Type of User	Conferencing	Hosted IVR	800/Toll Free	Dedicated LD	Switched LD
State	\$ 951,694	\$ 3,035,646	\$ 9,610,096	\$ 1,762,370	\$ 512,068
Non Profit	\$ 65,556	\$ 433,832	\$ 102,597	\$ 227,933	\$ 110,565
County	\$ 14,479	\$ 1,521	\$ 67,874	\$ 394,457	\$ 170,875
University	\$ 57,297	\$ -	\$ 23,589	\$ 439,638	\$ 19,764
College	\$ 4,076	\$ -	\$ 5,936	\$ 62,677	\$ 16,306
Legislature	\$ 639	\$ -	\$ 2,370	\$ 4,465	\$ 468
City	\$ 2,490	\$ 2,772	\$ 2,369	\$ 65,908	\$ 61,594
School	\$ 790	\$ -	\$ 1,439	\$ 132,144	\$ 68,390
Courts	\$ 13,109	\$ -	\$ 1,053	\$ 13,481	\$ 8,139
Other	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total	\$ 1,110,129	\$ 3,473,772	\$ 9,817,324	\$ 3,103,072	\$ 968,170

Figure 4 - Long Distance Voice Services

Utilization of these services by non-state agencies is less pronounced but for most services is still important. Note that billing for Switched Long Distance is included in the Local Services category for the totals represented in Figure 4. The “Hosted IVR” product is used by state agencies entirely for call center operations. Since call center operations involve personnel resources and agency organization, this product is not studied in this Business Case.

3.2.2 SUNCOM Voice Services Utilization by State Agencies

Total voice services utilization (excluding STEPS) by agency in FY 2013 – 14 is shown as follows:

Agency	Total Voice Revenues
DCF - Children and Families	\$ 8,791,550
DOC - Corrections	\$ 3,270,433
DOR - Revenue	\$ 2,825,623
DOH - Health	\$ 2,653,139
DOT - Transportation	\$ 2,650,510
DEO - Economic Opportunity	\$ 2,221,232
HSMV - Highway Safety and Motor Vehicles	\$ 890,165
DJJ - Juvenile Justice	\$ 804,166
DEP - Environmental Protection	\$ 791,387
DOE - Education	\$ 748,345
DACS - Agriculture and Consumer Services	\$ 594,887
DMS - Management Services	\$ 497,518
ACHA - Health Care Administration	\$ 493,402

FWC - Fish and Wildlife Conservation	\$	457,800
DFS - Financial Services	\$	455,436
FDLE - Law Enforcement	\$	308,381
APD - Persons with Disabilities	\$	295,794
EOG - Executive Office of the Governor	\$	278,754
DBPR - Business and Professional Regulation	\$	230,543
DoEA - Elder Affairs	\$	217,206
Legislative Affairs	\$	203,415
DOS - State	\$	173,933
DMA - Military Affairs	\$	162,951
PSC - Public Service Commission	\$	76,235
LOT - Lottery	\$	61,815
DVA - Veterans Affairs	\$	60,046
Commission on Offender Review	\$	44,396
SBA - State Board of Administration	\$	39,590
CIT - Citrus	\$	22,775
BOR - Board of Regents	\$	2,892
Grand Total	\$	<u>30,324,317</u>

Figure 5 - SUNCOM Utilization by Agency

Note that six state agencies utilize the preponderant share of SUNCOM voice services, as described below.

Utilization of the “local” subgroup of SUNCOM Voice Services breaks down between the state agencies as follows:

Agency	Hosted VoIP	SIP	Local Services	Total Local Services
DOC	\$ 1,255,416	\$ -	\$ 1,728,595	\$ 2,984,011
DOH	\$ 9,840	\$ 4,979	\$ 1,885,445	\$ 1,900,263
DCF	\$ 33,289	\$ 162,509	\$ 1,118,119	\$ 1,313,917
DOR	\$ -	\$ -	\$ 1,212,205	\$ 1,212,205
DHSMV	\$ -	\$ -	\$ 753,174	\$ 753,174
DJJ	\$ 1,885	\$ -	\$ 675,104	\$ 676,989
DEP	\$ -	\$ -	\$ 580,786	\$ 580,786
DOE	\$ 21,832	\$ -	\$ 500,866	\$ 522,698
DOT	\$ 13,258	\$ 3,319	\$ 496,942	\$ 513,520
AGR	\$ -	\$ -	\$ 478,513	\$ 478,513
FWC	\$ 283,791	\$ -	\$ 121,310	\$ 405,102
DEO	\$ -	\$ 41,001	\$ 352,194	\$ 393,195
DFS	\$ -	\$ -	\$ 358,306	\$ 358,306
DMS	\$ 38,757	\$ 24,766	\$ 292,279	\$ 355,802
EOG	\$ 3,462	\$ -	\$ 255,209	\$ 258,671
APD	\$ 67,388	\$ -	\$ 180,523	\$ 247,912
AHCA	\$ -	\$ -	\$ 232,339	\$ 232,339

FDLE	\$ -	\$ -	\$ 232,239	\$ 232,239
DBPR	\$ -	\$ 46,209	\$ 144,068	\$ 190,277
DOS	\$ -	\$ -	\$ 151,371	\$ 151,371
DOEA	\$ -	\$ -	\$ 149,313	\$ 149,313
DLA	\$ -	\$ -	\$ 148,486	\$ 148,486
DMA	\$ -	\$ -	\$ 132,105	\$ 132,105
PSC	\$ -	\$ -	\$ 66,686	\$ 66,686
DOL	\$ -	\$ -	\$ 52,610	\$ 52,610
DVA	\$ -	\$ -	\$ 45,200	\$ 45,200
FPC	\$ -	\$ -	\$ 38,114	\$ 38,114
SBA	\$ -	\$ -	\$ 36,691	\$ 36,691
CIT	\$ 13,131	\$ -	\$ 8,821	\$ 21,952
BOR	\$ -	\$ -	\$ -	\$ -
DCA	\$ -	\$ -	\$ -	\$ -
Grand Total	\$ 1,742,049	\$ 282,783	\$ 12,427,613	\$ 14,452,444

Figure 6 - SUNCOM Local Services by State Agency

Utilization of the “long distance” subgroup of SUNCOM Voice Services breaks down between the state agencies as follows:

Agency	Conferencing	Hosted IVR	800/Toll Free	Dedicated LD	Switched LD	Total by Agency
DCF	\$ 130,698	\$ 2,377,286	\$ 4,748,152	\$ 212,775	\$ 8,721	\$ 7,477,633
DEO	\$ 23,754	\$ -	\$ 1,492,181	\$ 292,532	\$ 19,570	\$ 1,828,037
DOR	\$ 120,474	\$ -	\$ 1,368,252	\$ 112,288	\$ 12,405	\$ 1,613,418
DOT	\$ 7,909	\$ 588,526	\$ 1,344,604	\$ 167,590	\$ 28,361	\$ 2,136,990
AHCA	\$ 60,082	\$ -	\$ 172,343	\$ 26,410	\$ 2,228	\$ 261,063
DOH	\$ 214,495	\$ -	\$ 101,798	\$ 230,281	\$ 206,301	\$ 752,875
DOE	\$ 85,611	\$ -	\$ 58,781	\$ 62,756	\$ 18,499	\$ 225,647
DFS	\$ 2,898	\$ -	\$ 43,243	\$ 49,380	\$ 1,608	\$ 97,129
DOEA	\$ 5,407	\$ -	\$ 42,529	\$ 16,047	\$ 3,910	\$ 67,894
DHSMV	\$ 13,720	\$ 4,223	\$ 41,966	\$ 55,216	\$ 21,866	\$ 136,992
DOC	\$ 14,787	\$ 4,277	\$ 36,366	\$ 138,423	\$ 92,569	\$ 286,422
FDLE	\$ 11,555	\$ -	\$ 33,736	\$ 27,294	\$ 3,557	\$ 76,142
AGR	\$ 30,181	\$ -	\$ 32,429	\$ 42,136	\$ 11,627	\$ 116,374
DMS	\$ 40,413	\$ 53,174	\$ 31,904	\$ 14,178	\$ 2,047	\$ 141,715
FWC	\$ 15,006	\$ 6,120	\$ 17,121	\$ 9,510	\$ 4,942	\$ 52,699
DEP	\$ 66,646	\$ 2,040	\$ 13,849	\$ 109,428	\$ 18,638	\$ 210,601
DLA	\$ 9,402	\$ -	\$ 10,489	\$ 26,964	\$ 8,074	\$ 54,929
PSC	\$ 2,184	\$ -	\$ 5,664	\$ 1,676	\$ 25	\$ 9,549
APD	\$ 21,661	\$ -	\$ 3,183	\$ 20,280	\$ 2,758	\$ 47,882
DBPR	\$ 8,811	\$ -	\$ 3,060	\$ 27,320	\$ 1,075	\$ 40,266
DJJ	\$ 30,027	\$ -	\$ 2,471	\$ 60,245	\$ 34,434	\$ 127,177
DMA	\$ 54	\$ -	\$ 2,215	\$ 24,056	\$ 4,522	\$ 30,846

FPC	\$ 383	\$ -	\$ 1,783	\$ 3,381	\$ 736	\$ 6,283
DOL	\$ 3,307	\$ -	\$ 861	\$ 4,785	\$ 251	\$ 9,205
EOG	\$ 9,837	\$ -	\$ 788	\$ 9,391	\$ 67	\$ 20,083
DOS	\$ 13,283	\$ -	\$ 321	\$ 8,926	\$ 33	\$ 22,562
CIT	\$ 717	\$ -	\$ 7	\$ 33	\$ 66	\$ 823
BOR	\$ 2,892	\$ -	\$ -	\$ -	\$ -	\$ 2,892
DVA	\$ 2,649	\$ -	\$ -	\$ 9,019	\$ 3,179	\$ 14,846
SBA	\$ 2,851	\$ -	\$ -	\$ 48	\$ -	\$ 2,899
Grand Total	\$ 951,694	\$ 3,035,646	\$ 9,610,096	\$ 1,762,370	\$ 512,068	\$ 15,871,872

Figure 7 - SUNCOM Long Distance by Agency

Note, that the “switched long distance” amounts are included in billing for local services.

3.2.3 Large Voice Utilization Agencies

This data shows six agencies with spending on voice services that is much larger than other state agencies, comprising 74% of total voice spending among state agencies.

	Total Voice Spend	
Largest Six State Agencies	\$ 22,412,485	74%
Remaining State Agencies	\$ 7,911,832	26%
Total State Agency Voice	\$ 30,324,317	

Figure 8 - Large Voice Utilization Agencies

Those six agencies are: Children and Families, Health, Revenue, Transportation, Economic Opportunity, and Corrections. These agencies are leading the entry into use of SIP and VoIP technologies. A summary of voice service spending by these agencies is:

Voice Service	DCF	DOC	DOR	DOH	DOT	DEO
800/Toll Free	\$ 4,748,152	\$ 36,366	\$ 1,368,252	\$ 101,798	\$ 1,344,604	\$ 1,492,181
Hosted IVR	\$ 2,377,286	\$ 4,277	\$ -	\$ -	\$ 588,526	\$ -
Local Service	\$ 1,118,119	\$ 1,728,595	\$ 1,212,205	\$ 1,885,445	\$ 496,942	\$ 352,194
Switched LD	\$ 8,721	\$ 92,569	\$ 12,405	\$ 206,301	\$ 28,361	\$ 19,570
Dedicated LD	\$ 212,775	\$ 138,423	\$ 112,288	\$ 230,281	\$ 167,590	\$ 292,532
SIP	\$ 162,509	\$ -	\$ -	\$ 4,979	\$ 3,319	\$ 41,001
Conferencing	\$ 130,698	\$ 14,787	\$ 120,474	\$ 214,495	\$ 7,909	\$ 23,754
Hosted VoIP	\$ 33,289	\$ 1,255,416	\$ -	\$ 9,840	\$ 13,258	\$ -
Grand Total	\$ 8,791,550	\$ 3,270,433	\$ 2,825,623	\$ 2,653,139	\$ 2,650,510	\$ 2,221,232

Figure 9 - Large Voice Service Agency Spending Summary

Therefore, these six agencies will be addressed separately in this Business Case. Inspired and DMS sought further information regarding structure and utilization of SUNCOM voice services from agency Chief Information Officers via an online survey and through separate meetings with each agency. We are very appreciative of the information provided in the survey responses and meetings, which are included below for each of the six agencies.

Department of Children and Families

Voice Service	
800/Toll Free	\$ 4,748,152
Hosted IVR	\$ 2,377,286
Local Service	\$ 1,126,840
Dedicated LD	\$ 212,775
SIP	\$ 162,509
Conferencing	\$ 130,698
Hosted VoIP	\$ 33,289
Grand Total	\$ 8,791,550

Figure 10 - DCF Voice Service Spending

DCF is by far the largest state agency user of 800 Service, and Hosted IVR. Hosted IVR is used by DCF for call center functions. Call centers are not addressed in this Business Case and should be addressed separately through a comprehensive business case covering all aspects of call center operation and support. There are approximately 100 DCF locations that utilize SUNCOM voice services. DCF has recently migrated from standard Centrex services to an IP Centrex solution. DCF is in the process of implementing a unified communications solution for its call centers. According to DMS, STEPS with SIP trunk access has radically changed the spending profile for this agency during the past year. There will be a local services drop in utilization going forward as services are replaced with STEPS and SIP service layers. A reduced amount of Centrex spending for gateways at DCF sites with 35 or more employees is anticipated. All DCF sites are connected to MFN. DCF’s experience with the transition of PRI and Centrex to SIP trunking over the MFN was that the additional bandwidth required for the addition of voice traffic was not large and could be accommodated over existing MFN circuits.

DCF believes current pricing/costing precludes greater utilization of conference calling services. DCF believes it could be migrated to IP by FY 2017-18 if DMS moved that direction.⁵ In fact, DCF’s transition to SIP is planned to be completed by the end of the current fiscal year.

⁵ CIO Survey Response, September 19, 2014.

Department of Health

Voice Service	
800/Toll Free	\$ 101,798
Hosted IVR	\$ -
Local Service	\$ 2,091,746
Dedicated LD	\$ 230,281
SIP	\$ 4,979
Conferencing	\$ 214,495
Hosted VoIP	\$ 9,840
Grand Total	\$ 2,653,139

Figure 11 - DOH Voice Service Spending

The Department of Health (DOH) is the largest user of local telephone services (closely followed by Department of Corrections). DOH administers approximately 528 sites on behalf of the State of Florida's citizens. DOH is using IP Centrex at one location. Health believes it could be migrated to IP by 2017 – 18 if DMS moved that direction. DOH believes important Service Level Agreement metrics include: 24 hour customer service, ease of ordering process, and "moves, adds, and changes (MACS) with fast turnaround".⁶

Department of Revenue

Voice Service	
800/Toll Free	\$ 1,368,252
Hosted IVR	\$ -
Local Service	\$ 1,224,270
Dedicated LD	\$ 112,288
SIP	\$ -
Conferencing	\$ 120,474
Hosted VoIP	\$ -
Grand Total	\$ 2,825,283

Figure 12 - DOR - Voice Service Spending

The Department of Revenue (DOR) is a large user of local telephone services and 800 services. DOR administers approximately 53 sites on behalf of the State of Florida's citizens. All DOR sites within the State of Florida have MFN connectivity which facilitates transition to EVS from a cost perspective. While no additional cost for installation of new circuits would be necessary, capacity on existing circuits may have to increase to accommodate additional voice traffic, which would require cost analysis. Local Area Networks (LAN) are current and able to satisfy any future needs. At this time DOR does not use IP Centrex, but does use standard Centrex. DOR believes it could be migrated to SIP by FY 2017-18. However, further staff

⁶ CIO Survey Response, September 19, 2014.

training would be required for EVS, which cost is a consideration.⁷ DOR states that cost is the major component of such a transition, and the move would have to be good for their Department.

Department of Transportation

Voice Service	
800/Toll Free	\$ 1,344,604
Hosted IVR	\$ 588,526
Local Service	\$ 525,303
Dedicated LD	\$ 167,590
SIP	\$ 3,319
Conferencing	\$ 7,909
Hosted VoIP	\$ 13,258
Grand Total	<u>\$ 2,650,510</u>

Figure 13 - DOT Voice Service Spending

The Department of Transportation is a large user of 800 services and Hosted IVR. DOT has deployed Enterprise VoIP and does not use standard voice or IP Centrex. All sites “of any consequence” have current connections to MFN. DOT has concerns about being fully migrated to SIP by FY 2017-18 if DMS moved that direction, but it appears that it could be largely migrated by that time.⁸ Given current agency VoIP deployment plans and accomplishments, 2019 may be a more appropriate migration target for Transportation.

Department of Economic Opportunity

Voice Service	
800/Toll Free	\$ 1,492,181
Hosted IVR	\$ -
Local Service	\$ 371,764
Dedicated LD	\$ 292,532
SIP	\$ 41,001
Conferencing	\$ 23,754
Hosted VoIP	\$ -
Grand Total	<u>\$ 2,221,232</u>

Figure 14 - DEO Voice Service Spending

The Department of Economic Opportunity operates eight sites, and is a large user of 800 services. It uses voice Centrex, but not IP Centrex. DEO states “cloud offerings are not under consideration due to the Department’s enterprise complexity.” DEO’s IT environment includes extensive integration of computer applications and telecommunications services including call centers. Significant planning for SIP is

⁷ CIO Survey Response, September 19, 2014.

⁸ CIO Survey Response, September 17, 2014.

underway. All sites are connected to MFN using capacity at 10 Mb or above, on a Metro Ethernet basis. DEO uses VoIP for internal communications so LANs are already configured to support voice grade quality of service. DEO could be migrated to SIP by FY 2017-18 if DMS moved that direction. DEO does have current quality of service issues regarding carrier oversight and accountability under the current voice contracts, specifically that “currently there is no proactive monitoring of PRIs” (ISDN Primary Rate Interfaces). This is a big concern. Important matters for Service Level Agreements include “timely and specific accurate billing, QoS, T1 uptime, and SUNCOM NOC [Network Operations Center] service desk efficiency”.⁹

Department of Corrections

Voice Service	
800/Toll Free	\$ 36,366
Hosted IVR	\$ 4,277
Local Service	\$ 1,821,164
Dedicated LD	\$ 138,423
SIP	\$ -
Conferencing	\$ 14,787
Hosted VoIP	\$ 1,255,416
Grand Total	\$ 3,270,433

Figure 15 - DOC Voice Service Spending

The Department of Corrections is a large user of local telephone services, and operates about 300 sites. DOC is implementing Hosted Voice over IP Services, and is nearly complete such that its transition from Centrex to Hosted VoIP should be complete in early 2015. Expected benefits include reduced cost, standardized equipment, standardized support, and improved mobility. A small percentage of Centrex lines will remain in service for capabilities that require TDM such as fax, medical equipment and alarm services. Some sites will remain on Centrex due to cost/benefit considerations. DOC states it has experienced a diminished quality of service level from its HVS provider. DOC could not be fully migrated to SIP by FY 2017-18 if DMS moved in that direction, since not all local carriers fully support SIP at the present time (some locations do not offer SIP, and others offer SIP but not new numbers).¹⁰

3.3 Marketplace Enterprise Voice Service Availability

Enterprise voice services are widely available in the marketplace due to advances in technology and the global transition from TDM networks to IP networks. All of the State of Florida’s current voice services (AT&T, CenturyLink, EarthLink, and Verizon) offer enterprise voice services as well as other providers such as Comcast, FairPoint, Level 3, PAETEC, Windstream, XO Communications, et al. VoIP is the foundational product for each provider and is the enabler for Unified Communications. Information from service provider websites makes clear this reliance on IP networking and the service provider view of evolution of services in the marketplace.

⁹ CIO Survey Response, September 18, 2014.

¹⁰ CIO Survey Response, September 24, 2014.

AT&T operates one of the largest networks in the world and provides a converged IP network to “deliver streamlined operations, cost efficiencies and scalability.” Such a network “integrates cloud, mobility and VoIP solutions.” AT&T states “Voice is getting smarter:”

The power of networks coming together can enable a wealth of voice related productivity enhancements that allow agencies to be more mobile and flexible than ever before. Options and tools such as unified messaging, on the fly conferencing and real time collaboration are improving the abilities of government employees to work together, regardless of location. These solutions drive to meet the goal of improved citizen services within a cost containment model of convergence.¹¹

CenturyLink has a nationwide IP/Multiprotocol Label Switching (MPLS) network with multiple points of presence in Florida. This network is capable of providing “enterprise cloud networking” which CenturyLink states will “reduce risk and cost with integrated cloud and networked services.” CenturyLink also provides Hosted VoIP which it states “simplifies management, reduces costs and modernizes your voice network.”¹²

EarthLink operates an extensive nationwide IP network with a core node in Florida and multiple multi-service access POPs.¹³ Over this network, EarthLink provides hosted applications including hosted voice, as well as cloud and infrastructure services. EarthLink states its Hosted Voice product is an “affordable managed network solution that delivers significant advantages such as increased productivity, geographic flexibility, real-time disaster recovery and less technology risk.”¹⁴

FairPoint operates a large IP network with capability to support hosted PBX and SIP trunking applications along with others. This permits providing converged IP services to reduce costs and simplify operations.¹⁵

Level 3 operates an extensive international IP network with substantial presence in Florida. This presence includes data centers and metro networking.¹⁶ Level 3 offers a variety of services, including enterprise voice services that provide a foundation for unified communications, and also including contact center services incorporating toll free calling.¹⁷

Verizon owns and operates one of the largest IP networks in the world. Verizon provides unified communications and VoIP products, which integrate voice and data traffic and facilitate audio and video conferencing along with other cloud-based applications. Verizon states its VoIP service portfolio “integrates voice and data traffic and provides a platform for layering networking products to support Unified Communications and Collaboration (UC&C) solutions”.

An example applicability of converged networks to state government at the enterprise level –which is common to all service providers – is:

¹¹ http://www.corp.att.com/stateandlocal/unified_communications.html

¹² <http://www.centurylink.com/business/>

¹³ <http://www.earthlinkbusiness.com/support/network-map.xea>

¹⁴ <http://www.earthlinkbusiness.com/hosted-applications/>

¹⁵ <http://www.fairpoint.com/enterprise/voip/sip.jsp>

¹⁶ <http://maps.level3.com/default/#.VCq4RtF0yM8>

¹⁷ <http://www.level3.com/en/products-and-services/voice/enterprise-voice/>

Network convergence offers government agencies the ability to consolidate voice, video and data onto a single, IP-enabled network that supports the increased adoption for VoIP and multimedia applications. Moving to an IP network can drive cost efficiencies, improve productivity and accelerate delivery of citizen services with high performance. Your agency can take advantage of application services that range from cloud to unified communications to network security and full infrastructure management. Reduce the complexity of disparate networks and prepare for the future of integrated wired and wireless networks.¹⁸

Application of converged network solutions to state enterprise voice communications is commonly seen among all the large and even medium sized telecommunications providers. Additional providers could be included above, but the services and provisioning would be in common as they all use the same basic building block – the IP network.

3.4 Premise-based –vs- Cloud-based Service Offering

The decision of embracing premise-based or cloud-based solutions comes with many different factors for consideration. This is not a single dimension that can be based on cost alone. The main difference is the physical location of the equipment that delivers the service. Premise-based solutions are on-site, and cloud-based solutions are located at remote data center facilities accessed via dedicated or internet based connectivity.

The feature sets that are offered from a cloud-based solution are limited due to the inherent complexity of delivery of the feature itself. E.g., queue services, IVR, or conferencing. Most cloud-based solutions provide a full feature set; however, care must be given to understand the resiliency, reliability, and requirements for delivery.

The hosted cloud solution has a much lower initial cost of ownership since it's delivered as a service. In contrast, a premise-based solution bears a high up front cost for extensive hardware to establish the capability. The key factor for consideration is the total cost of ownership (TCO), which has several layers of cost including who provides the maintenance and configuration for the solution. In the cloud solution the service provider bears this cost, while the premise-based solution becomes the organization's responsibility. Another consideration is leveraging and staying current with emerging telephony capabilities and unified communications. Cloud based solutions provide for ease of migration as a service through the service provider's cyclical upgrade intervals. Premise based solutions require costly upgrades, training, configuration, and additional cost for the new capabilities in most cases.

Another key factor is the scalability. Premise-based solutions would have to be over-resourced initially in order to allow for future growth or designed with scalability in mind. With hosted cloud, new users can be added to the cloud phone system as needed.

Lastly, existing infrastructure is a critical component to understanding the cost and/or potential savings that can be achieved depending on the Total Cost of Ownership (TCO). Legacy premise-based systems connect phones to the Public Switched Telephone Network (PSTN) through connections like TDM, which can be expensive. Cost

¹⁸ http://www.corp.att.com/stateandlocal/network_transformation/

savings can be achieved by eliminating traditional TDM-based access facilities in favor of VoIP trunks or use of hosted PBX. The data circuit may need to be upgraded (with an increased cost) but this cost may be offset by the cost savings by eliminating the traditional voice connections. These service layers can be provisioned over data circuits which in many cases are already in place.

Advantages

Premise Based Solution	Hosted Cloud Based Solution
Potentially lower on-going costs	Lower upfront costs
No fee increases	No Maintenance cost
Complete control	Service provider has all the risk, maintenance, and configuration
Solution can be tailored to exact needs	Simplistic solution; ease of use
Flexibility	Leverage emerging capabilities at lower cost
Known set of capabilities	Faster implementation
NOC Oversight & Tools	Limited NOC oversight and tools

Disadvantages

Premise Based Solution	Hosted Cloud Based Solution
Higher setup/configuration cost	Potential higher on-going costs
Unknown long term maintenance cost	Service provider may not be able to make changes quickly
Upgrades introduce new complexities	Service provider has control
Speed to implement new changes	Integration to new emerging unified capabilities
Maintaining evolving security integration requirements	Potential security configuration limitations

Studies have cited telecommunications failures as one of the greatest risks to business continuity. Faced with increasingly unpredictable and extreme weather and high-profile disasters such as hurricanes and tornados, many organizations are turning to cloud-based PBX systems for their business continuity benefits compared to premise-based solutions.

Within the government infrastructure there are critical service layers that must be carefully supported to ensure public safety and communication services are continuous. While premise-based solutions have the capability to survive disasters, they must also be carefully configured with survivability in the design and implementation. When a disaster hits and critical services are affected, it’s important to have a business recovery plan that can be quickly executed. This is where hosted cloud-based solutions excel. The ability to use web portal technology to reroute phone numbers from the affected organization location to another location or even to employee cell phones is a critical and effective service for business continuity. Employees can work from home when their primary location loses power or when they are unable to make the commute for some other reason. Calls can be routed to the right individuals at their temporary locations and employees maintain access to necessary phone functionality like voicemail remotely. Similarly, premise based solutions can also accommodate this at a failover level, but additional configuration/cost is required to maintain this capability.

As telecommunications capabilities continue to emerge, the industry is quickly converging into a unified or highly integrated set of voice/multi-media service layers to meet the demands of large and small organizations. The advent of host cloud-based solutions is a consideration that ultimately reduces cost and increases reliability, capabilities, and flexibility for future integration.

3.5 Leverage Existing State Infrastructure

The state has undertaken two large procurements to provide for the MFN, which incorporates telecommunications backbone transport, backbone routing, local last-mile access, and agency level infrastructure to meet ever increasing demands for data access. Increased demand for data access speed is typically a response to software application and internet based service needs. The MFN provides an easy path that can be leveraged to migrate traditional legacy voice services into a fully evolved VoIP service layer. MFN can provide a single connection for both voice and data, where two separate connections – voice or data – are in place today. With the advent of VoIP services being routed through an MPLS backbone with appropriate QoS¹⁹, the state is poised to take advantage of lower cost data transport and access facilities to reduce and/or eliminate high cost legacy TDM based voice services and now-redundant connections. The state's MyFloridaNet (MFN) core backbone transport service is designed to be scalable with highly resilient and redundant capabilities for delivery of data services. MFN is transporting SIP traffic today for on-net calling where possible, however there are still large TDM based service layers that should be targeted to migrate to SIP. The upcoming implementation of MFN-2 is anticipating a vendor agnostic SIP Control Plane, which will essentially enable a ubiquitous integration layer for delivery of VoIP services. This means that VoIP can easily be integrated into the data routing fabric at a lower cost overall to the state.

Incrementally, the state will realize savings in the range of 20-40% through the elimination of TDM based voice access with lower incremental costs in upgrading data access circuits to provide voice capabilities. In some cases this may require additional local access network (LAN) upgrades to accommodate the SLA requirements for VoIP delivery within an agency's infrastructure.

3.6 Industry Standard, Interoperability, Flexibility, and Security

To ensure the highest levels of interoperability, coupled with flexibility for future expansion, voice service communications must adhere to industry standards. Legacy enterprise voice layers are being quickly replaced by highly scalable and emerging VoIP services. With the advent of VoIP, numerous implementation paths can be used, some proprietary and some based on open standards. To ensure that the state maintains an open and clear path for the future, we recommend that EVS be based upon Session Initiation Protocol (SIP) for VoIP implementations. While early VoIP service protocols such as H.323 are widely used in the VoIP environment, SIP has gained widespread VoIP market penetration and is now viewed as the standard.

To ensure SIP is implemented properly, care should be taken to deploy a robust data network infrastructure with resiliencies and monitoring tools to allow seamless implementation of the applications such as voice. Once this is established, QoS must be configured within the routing fabric to ensure call quality is maintained

¹⁹ Quality of service (QoS) is the overall performance of a telephony or computer network, particularly the performance seen by the users of the network.

throughout delivery of service. The appropriate QoS priority can be established based on the type of voice or unified communication being configured. E.g., Standard Voice or Web Video conference with Voice.

There are physical considerations that must also be maintained in the delivery of VoIP service. Both Layer 2 and Layer 3 QoS configurations must be tuned to ensure that services are maintained even when high data volumes traverse the backbone and end-point connections. This is being maintained today within MFN for voice service layers.

Interoperability is the key for the flexibility of VoIP solution based services. However, at the core, the features are the key drivers to how disparate VoIP solutions ultimately communicate with each other. At a minimum, the state must identify what feature sets are required and how SIP Gateway/Proxy services are established to provide the highest levels of capabilities, survivability, and flexibility for scale and expansion.

VoIP introduces new security concerns since it opens up access to IP based service layers. VoIP routing is typically controlled through firewalls and network address translators coupled with session border controllers. There are considerations for the need for secure VoIP solutions. Depending on the requirements that state may invoke, the vendor community can provide secure transport using protocols such as Secure Real Time Transport Protocol (SRTP). IPsec is also utilized for private point-to-point data connections. National Institute of Standards and Technology (NIST) recommends²⁰:

- Encryption of End Points
- Secure Real Time Protocol (SRTP)
- Key Management for SRTP – MIKEY
- Better Scheduling Schemes
- Compression of Packet Sizes
- Resolving NAT/IPsec Incompatibilities

3.7 Operational Support

Operational support has transformed with the emergence of VoIP and cloud-based voice solutions as enterprise solutions. The ability to self-manage solutions in the VoIP landscape is where the market has improved vastly over traditional call center based support infrastructure. Today, the ability to self-manage account profile, user profiles, and moves/adds/changes is greatly increased through self-service tools via online portals. With the emergence of VoIP service layers, voice administrators can scale service layers virtually with increased demand as necessary since cloud-based services have inherent scaling features with regard to delivery. While escalated help desk support centers are available across all voice services providers, the industry trend is to push the availability of performing standard maintenance tasks down to the end user level.

The market currently produces support layers focused on ease of maintenance, flexibility, real time reporting, and expansion. Be it premise-based or cloud-based, the market is moving to improve the administrative experience as the emergence of unified communications and collaboration evolves. E.g., Smartphone, desktop

²⁰ NIST SP 800-58 – Voice Over IP Security

computer, web conference, instant messaging, email, customer relationship management (CRM), and single reach call routing.

The service and support layers are evolving from the small organizational need to full enterprise service requirements such as the State. The market is prepared to respond to the State's operational need to improve highly flexible, intuitive, and reliable support layers with the ability to obtain Tier-1 level support for critical service requirements.

3.8 Other Federal and State Solutions for Multi-Tenant Solutions

Today numerous voice service vendors are providing multi-tenant solutions at the Federal and state levels. This is accomplished through service layer partitioning using virtualized scenarios. With the adaptation of an enterprise-wide IP infrastructure, the migration and integration of services is now becoming prevalent in all VoIP system designs. Unified communications is an example of such a service, enabling data, voice, and video to be transmitted over a single network infrastructure using standards-based Internet. Virtualized telecommunication systems enable greater scalability, added flexibility and ease of management of the various components associated with the multi-tenant environment. The integration of virtualized cloud-based service layers tied to existing voice service delivery architectures like the highly available/resilient MFN provides the ability to achieve a consistent, seamless, secure and highly-available telephony service over an enterprise network.

3.8.1 Benefits

- Lower cost for VoIP Telephony Services
- IT infrastructure cost savings
- Efficient resource sharing
- Improved adoption of emerging technology

3.8.2 Risks

- Reliability
- Security
- Scalability
- Resilience
- Redundancy

3.8.3 Challenges

- Service configuration
- Adaptability
- Design
- Speed of expansion
- Core infrastructure design to meet growing demand
- Clear and concise handling of customer service request, administration, and invoice management

3.9 Enterprise Session Initiated Protocol (SIP)

SIP utilization at the enterprise level is quickly transforming traditional voice services into data integration opportunities. This is accomplished through the implementation of SIP to control voice, video, streaming media,

instant messaging, presence, fax over IP and file transfer over IP networks. The SIP model enables the ability to converge communications services, distributed architectures, and seamless integration with IP technology.

The SIP session can range from just a two-party phone call to a multiuser, multimedia conference or an interactive multimedia session. SIP does not define the type of session, only its management. To do this, SIP performs four basic tasks:

- Locating users, resolving their SIP address to an IP address
- Negotiating capabilities and features among all the session participants
- Changing the session parameters during the call
- Managing the setup and teardown of calls for all users in the session

Enterprise SIP is implemented primarily through Session Border Controller (SBC) devices within an IP network enabling VoIP traffic to be processed through SIP enabled telecommunication trunks. This device controls the flow or routing of the VoIP call from one portion of the network to another, regardless of whether the destination is a private on-net call or public PSTN call. This is also where edge security implementations for VoIP end points essentially act as a SIP firewall. Beyond the trunk management, a Session Manger is typically deployed an enterprise solution to provide Policy Management, a Network Dial Plan, or Call Admission Control. Note: a call could also be a multi-media request between two or more parties.

The delivery of a SIP enabled call has two determining factors. First is the domain of a SIP enabled trunk that is partitioned to deliver private and public call paths. An interconnection between domains is enabled only through SIP trunk configurations over IP signaling. The integration of call path delivery is maintained within the SIP environment via SBC's and SIP trunks to facilitate call delivery regardless of origination or termination capabilities. E.g., Premise based systems can place a call that originates on a private legacy TDM based system, which has a translated SIP trunk for delivery to a cloud-based VoIP destination. This is done by simply traversing the PSTN from the serving LEC to the cloud-based provider using Network to Network Interface (NNI) connections to the SIP enabled SBC for destination delivery to the VoIP end point. The routing domain identifies the specific call path through network border elements to deliver the call.

3.10 Dedicated -vs- Commercial Facilities for Enterprise Delivery

The question of utilizing dedicated versus commercially shared facilities for the implementation of EVS is based upon two simple principles: reliability and cost. To ensure a highly reliable EVS solution, the dedicated telecommunications facilities are a standard requirement. This creates a private service layer for EVS to thrive. However, the cost of a dedicated environment is incrementally more expensive at the physical layers of implementation depending on the type of service delivery, integration, and requirements in terms of features.

Allowing EVS to utilize commercially shared facilities introduces cost savings from the serving vendor's perspective and increases the risk of service failures caused by environmental shifts outside of the EVS itself. E.g., EVS is established in a shared environment that is overloaded with congestion from a similar service to a different vendor's customer which induces failures with the State EVS. This is typical in a best effort type shared environment such as Vonage, which is delivered over an internet based connection that doesn't utilize dedicated connections to the end user. There is also increased risk of security overlap in a shared environment

that a State EVS could not control or mandate. Given there are aspects of State government services that require highly secure communications, a shared facility service layer is not feasible in this regard.

To ensure consistent feature and services functionality, the utilization of shared resources may introduce anomalies that are unforeseen that will inject service failures within a State EVS environment. The availability of new emerging features in a shared environment may present a faster path to adoption, and may also present a higher risk of service failure since external demands could change capabilities impacting State EVS standards.

To ensure consistent feature and services functionality, the utilization of shared resources may introduce anomalies that are unforeseen that will inject service failures within a state EVS environment. Availability to new emerging features in a shared environment may present a faster path to adoption, and also represents a higher risk to service failures through a change in capability that affects state EVS standards being driven by external demand.

It is recommended that the state utilize dedicated facilities for interconnection to the MFN SIP control plane and dedicated facilities for VoIP service feature implementation from the service provider to ensure high levels of service delivery and QoS. Further, careful consideration should be made for emerging interconnection capabilities that fall outside of dedicated facilities. E.g., Internet based voice via secure Virtual Private Network (VPN) connections at remote office/mobile locations.

3.11 Emergency 911

Traditional telephone landline customer records include the telephone number and its associated physical location. This information is maintained by the service provider and utilized to provide location information associated with the telephone number for 911 call takers via public safety answering points (PSAP) center. When an emergency call is received by a PSAP, the location is automatically determined from the 911 database and displayed on the operator console. DMS currently maintains the state plan for E911 and is fully described in the “Florida Emergency Communications Number E911 state Plan²¹”.

Considering solutions that involve moving away from traditional premise-based telephony to cloud-based VoIP telephony, there are a number of factors and considerations to address. With cloud-based VoIP solutions, there may or may not be clear linkage between the telephone number and physical location depending on the service providers capabilities. VoIP, within the context of this discussion is limited to delivery of voice services from a cloud-based service provider with either a premised based VoIP handset or soft phone solution. From this perspective the service provider can only provide approximate location of the device, based on the IP address allocated to the network router and the known service address.

VoIP communication services introduce new levels of flexibility in terms of ease of management and movement of telephony device. This flexibility that permits device mobility inherently presents a problem for E911 services. This presents the issue of “where is the telephone physically?”, for instance, when an employee moves from one office to another simply unplugs the VoIP handset and plugs back in the new office. The registration of this move must be maintained by the service provider or customer administrative management to ensure the location information is maintained.

²¹ http://www.dms.myflorida.com/business_operations/telecommunications/enhanced_911/florida_e911_plan

VoIP communication services introduce new levels of flexibility in terms of ease of management and movement of telephony device. The flexibility that permits device mobility inherently presents a problem for E911 services: “where is the telephone physically”? E.g., an employee moves from one office to another simply unplugs the VoIP handset and plugs back in the new office. The registration of this move must be maintained by the service provider or customer administrative management to ensure location information is maintained.

VoIP cloud-based services are regulated for E911 purposes at the federal level by the Federal Communications Commission (FCC). Key regulatory acts are: New and Emerging Technologies 911 Improvement Act of 2008 , which requires each IP-enabled voice service provider to provide 911 service and enhanced 911 service to its subscribers in accordance with the requirements of the Federal Communications Commission; and FCC 05-116 - E911, which extends the requirements for IP-Enabled Service Providers to provide 911 service. These regulatory requirements define the minimum information that must be provided. The VoIP E911 emergency-calling system associates a physical address with the calling party's telephone number. All VoIP providers that provide access to the public switched telephone network are required to implement E911, a service for which the subscriber may be charged.

At the VoIP level, a phone or gateway may identify itself with a Session Initiation Protocol (SIP) registrar by its account credentials. In such cases, the VoIP service provider only knows that a particular user's equipment is active. Service providers often include emergency response services by agreement with the user who registers a physical location and agrees that emergency services are only provided to that address if an emergency number is called from the IP device.

VoIP E911 system is based on a static table lookup, unlike in cellular phones, where the location of an E911 call can be traced using assisted GPS or network location. The VoIP E911 information is only accurate so long as subscribers, who have the legal responsibility, are diligent in keeping their emergency address information current.

The vendor community has embraced this issue of VoIP 911 location identification through the implementation of automatic location identification (ALI) services built into their VoIP offering. This service maintains all basic 911 service information, including the unique telephone station identification/location information. The service layer is provided via direct connection to public safety answering point (PSAP) as appropriate to allow for accurate routing of 911 calls. It will be a requirement of the EVS vendor to implement sufficient connectivity as required to ensure the public safety interconnections are maintained with fail-over capabilities. The design engineering for this aspect of support should be clearly established within the EVS procurement response by the vendor to the satisfaction of DMS.

There is an identified risk in that movement of a VoIP telephony device must be accurately maintained in the vendors ALI database, which provides the upstream information to the appropriate PSAP. This requires diligence by the organization utilizing VoIP services to maintain accurate location information for the device.

With the advent of mobile devices providing EVS service connectivity such as wireless hotspots, cellular phone tethering, or WiFi roaming, it is recommended that GPS location services always be enabled. This would provide compliance with Federal Communication Commission (FCC) requirements for wireless or mobile telephone services.

As VoIP telephony continues to emerge, the vendor community is continuing to provide robust VoIP solutions. The ability to provide automated management of E911 ALI databases via network devices that monitor and capture necessary information regardless of movement within the network topology are in service today. Some services identify the static location versus mobile VoIP addressing both with a given network topology or with utilization of a mobile access device to ensure correct information is maintained for PSAP call routing or 911 ALI database delivery.

To ensure accurate 911 information is continually updated and maintained for a state EVS, it is recommended that the vendor solution provide robust automation that clearly identifies the VoIP device regardless of movement within the physical topology of the network. Guidelines for ensuring accuracy are as follows:

1. Appropriate EVS design considerations for movement utilizing layer 2, 3, or wireless LAN discovery methodology.
2. Automation of real-time ALI database information gathering for physical location discovery via network appliance.
3. Provide support for mobile hotspot, tethering, or WiFi enabled telephony users with location registration requirements prior to establishing VoIP service connectivity in addition to GPS enabled location collection for the mobile device.
4. Automation of movement alerts for devices that report a change in location to the ALI database registration gathering device to allow for oversight review of movement of telephony devices within a given network topology.
5. Automation of 911 reporting to identify anomalies for registered devices within the EVS framework for a given organization.

3.12 Market Conditions

3.12.1 Current

Current market conditions are illustrated and shown by “Enterprise Voice Service Availability,” Section 3.3 above.

3.12.2 Future

The industry is driving to greater convergence of service provisioning over IP networks and truly unified communications. Mobile wireless communications will be joining this convergence at an accelerating rate. It is not an overstatement to say that the industry is in the midst of the largest technological transformation ever. Voice, video or data, wired or wireless will all be seamlessly converged so that “any” content will be available at increasing speed no matter the device we are using or the present location.

3.13 Access Options

Access for EVS is broken into two distinct categories: one the delivery of services over traditional TDM based services, and two the delivery of services over emerging VoIP data access paths. Both access layers provide for the ability to obtain improved pricing models based on bundled packages of service. The current market is moving toward bundled services through a usage tier based approach. However, the traditional per minute structure is still the predominant measurement in EVS. It is anticipated that the state will see further

convergence of capabilities in that long distance (LD), toll-free services (800) and local access are measured in tiers of usage in the near future.

3.13.1 Per Seat

A per seat model is based on a fixed rate of service per user that enables thresholds of use for LD, 800, and local access. Once the threshold of use is reached, additional fees are billed depending on the bundle provided by the vendor. E.g., a hosted VoIP user would get unlimited local access, 1000 minutes of LD and unlimited 800 for a fixed flat rate of \$25 per month. The market is managing these types of per seat offerings on break point analysis across a large landscape of use to mitigate over utilization by a given segment of a customer's service delivery. The determination of the break points is a critical factor in negotiating this type of service pricing model.

3.13.2 Usage Based

A usage based model has pricing which allows the serving vendor to recognize usage based (per minute) origination and termination costs for local access, beyond the transport of the service delivery for LD and 800. Local access is established with unlimited use within this model. There is a trend in the usage based model for LD and 800 to move towards a "data usage" tiered approach which is implemented by mobile carriers today. The continued emergence of VoIP is driving change in this area given that services are based on data connections and avoid traditional per minute pricing structures. This is not to say that the industry has embraced the usage based model fully, but there are opportunities that should be explored allow the state to negotiate delivery of LD and 800 service based solely on the volume of data that is traversing the SIP Control Plane to the vendors' infrastructure.

Regardless of the model a given vendor extends to the state, the ability to bundle services is the predominant trend that is being utilized in the market today. By bundling services in bulk, either through per minute or tiered service thresholds, the state can establish price reductions by converging the service delivery into a packaged solution.

3.14 Compliance

The FCC mandates all VoIP or Unified Communications providers comply with standards and requirements similar to those of traditional telecommunications service providers. Compliance with all Federal Americans with Disabilities Act (ADA), Health Insurance Portability and Accountability Act (HIPAA) and Communications Assistance for Law Enforcement Act (CALEA) must be maintained. In addition to Federal mandates, state and local regulatory requirements must also be met to provide services within a given geographic region as appropriate.

3.15 Impact of Voice Services Deregulation

As a practical matter, pricing, terms and conditions associated with almost all landline voice services have been fully deregulated over the past 15 years. Some price regulation remains in some states for residential and small business basic telephone service, in the form of a price cap for that service as defined. But remaining services in the residential, small to medium sized business, and especially in the enterprise service category associated with large business have for all practical purposes been deregulated. For many years enterprise customers have had contract options that are not regulated.

IP networking and capabilities began to develop contemporaneously with the deregulation of voice telephone services. “Between 1996, when the telephone network was broadly opened to competition, and 2001, a torrent of new investment deployed over 200,000 miles of trenches and approximately 18 million miles of fiber – enough fiber to circle the equator 750 times.”²² Additional fiber, electronics and other routing and core facilities have been deployed since that time to reach the state of today’s IP network. Voice over IP is a primary service enabled by the IP network and is the foundational service upon which Unified Communications and Enterprise Voice capabilities is based. As a result of broad-scale deregulation of the telecommunications industry, VoIP is not price regulated for any class of service – residential, small business or enterprise. Deregulation of voice services does not have any recent impact on VoIP or enterprise voice services, but deregulatory actions over the past 15 years created an environment that will encourage aggressive pricing by service providers for the State of Florida’s enterprise voice business.

3.16 Multi-tenant Consideration

EVS within a cloud-based solution provides the ability to segment and support multi-tenant environments. As discussed further in Section 3.8, the State has the opportunity to perform analysis of VoIP enabled data connections into the MFN topology to identify potential cost savings through the convergence and partitioning of a single data access path for the use by multi-tenant State and local government organizations. E.g., A government services building houses numerous State agencies that all require EVS that is delivered via a cloud-based solution. Today those organizations procure and maintain separate data connections to MFN at a cost that is higher due to single use pricing for the various needs at different data access levels. By enabling a single merged access path at a larger capacity, the State will realize a cost reduction for larger capacity service. This convergence does require capacity and configuration design engineering to take place both at the physical and logical network layer. However, this presents an opportunity to reduce cost and embrace a unified communications design principle that will yield greater service integration and improved performance over time.

In order to evolve multi-tenant capabilities within the state topology, the evolution of “shared” core access must defined to include:

- Shared responsibilities (oversight)
- Technical management
- Policies for use
- Integration thresholds (portioning of service per SLA by tenant)
- Technical design, support, and maintenance

Careful consideration should be given to the configuration and integration of premise-based equipment to ensure management is sustainable. The segmentation of the service delivery must be managed end-to-end

²² *In the Matter of Technology Transitions; AT&T Petition to Launch a Proceeding Concerning the TDM – to – IP Transition; Connect America Fund; Structure and Practices of the Video Relay Service Program; Telecommunications Relay Services and Speech – to – Speech Services for Individuals with Hearing and Speech Disabilities; and, Numbering Policies for Modern Communications; GN Docket Nos. 13-5 and 12-353, WC Docket Nos. 10-90 and 13-97, and CG Docket Nos. 10-51 and 03-123; Report and Order and Further Notice of Proposed Rulemaking (January 31, 2014), at paragraph 12.*

within the delivery configuration to ensure proper network administration is maintained. Further, all back-office functions (customer service requests and invoicing for service layers) must be properly partitioned and identifiable by the serving vendor for concise administration.

3.17 Legacy Interoperability

Legacy interoperability within a cloud-based EVS is supported through the implementation of products/devices that serve as IP Business Gateways (IPBG). These devices allow for the features and services to be extended to legacy infrastructures and extend the service life of a specific investment in telephony equipment. Vendors such as ADTRAN provide product families in a class that vary by numbers/types of interfaces (Ethernet, T1/PRI, analog FXS/FXO). These devices bridge the gap into the Hosted VoIP / SIP trunking solutions provided by cloud-based providers.

Over time it is anticipated that the state will be able to utilize an EVS solution provider's premise-based hardware a little to no cost depending on the negotiated terms for service bundling and delivery. E.g., a per seat unlimited usage for a business class telephony offering would provide the desk and mobile softest free of charge.

3.18 Recommended Communication Services Technology

The following recommendation is provided for the technology path for EVS:

The state should embrace VoIP telephony solutions throughout the state telecommunications network topology with full integration with MFN, leveraging data access paths to agency premise. The SIP Control Plane²³ should be utilized to create a vendor agnostic integration point for delivery of ubiquitous voice services. These services should support both cloud-based and premise-based VoIP solutions as long as they are effective and support the mission of the state in a cost effective manner.

Support for legacy telephony solutions should be maintained with plans to migrate to VoIP solutions as appropriate given budgetary constraints or as invested premise-based solutions reach end of life status.

Review of Florida Statue 282.0041(24) provides the ability for SUNCOM network services to provide telecommunications services. Today that is limited to delivery of service to a single building or contiguous building complex. With the implementation of an EVS VoIP solution, the ability to extend services down to the physical handset or mobile device needs examination to ensure QoS is maintained along with E911 registration information.

4 Options & Cost Benefit Analysis

Section 287.0571 (4)(h), F.S. A cost-benefit analysis documenting the direct and indirect specific baseline costs, savings, and qualitative and quantitative benefits involved in or resulting from the implementation of the recommended option or options. Such analysis must specify the schedule that, at a minimum, must be adhered to in order to achieve the estimated savings. All elements of cost must be clearly identified in the cost-benefit analysis, described in the business case, and supported by applicable records and reports. The State agency head shall attest that, based on the data and

²³ Established in the upcoming implementation of MFN-2 topology creating a vendor agnostic SIP integration point for delivery of services.

information underlying the business case, to the best of his or her knowledge, all projected costs, savings, and benefits are valid and achievable. As used in this section, the term “cost” means the reasonable, relevant, and verifiable cost, which may include, but is not limited to, elements such as personnel, materials and supplies, services, equipment, capital depreciation, rent, maintenance and repairs, utilities, insurance, personnel travel, overhead, and interim and final payments. The appropriate elements shall depend on the nature of the specific initiative. As used in this paragraph, the term “savings” means the difference between the direct and indirect actual annual baseline costs compared to the projected annual cost for the contracted functions or responsibilities in any succeeding State fiscal year during the term of the contract.

Consideration of options for procurement of EVS was performed after careful review of telecommunications markets and trends, from both a State of Florida perspective and nationally. Based on this understanding of markets and trends, further analysis reviewed a variety of factors, such as: budgets, resources, stability, reliability, cost, risks, time to implement, and simplification opportunities. A cost/benefit analysis was completed for the options under consideration, to provide DMS and the State of Florida with a financial quantification to permit an informed choice in the EVS procurement.

4.1 Introduction

This analysis is intended to meet the statutory requirement of section 287.0571(4)(g) of the Florida Statutes, which requires “a description of the current market for the contractual services that are under consideration for outsourcing.” Information used for this analysis was gained through a number of methods and sources including:

- Extensive interviews and discussions with DMS staff and management over the course of the project;
- Review of extensive data and information provided by DMS staff and management regarding SUNCOM operations and billing²⁴;
- Review of current voice services contracts including prior amendments;
- Information and perspectives provided by state agency Chief Information Officers and IT managers from meetings and through an online survey created with the assistance of DMS staff;
- Extensive focused research on evolving IP-based service offerings of large providers;
- Review of statements to investors by large providers regarding technology and service direction;
- Extensive focused review of research firm studies regarding technology direction;
- Review and consideration of regulatory actions and direction regarding the telecommunications industry; and,
- Inspired Technologies’ own experience and research.

²⁴ The Department of Management Services provided substantial and detailed billing data for voice services customers over time which was very helpful to assess utilization and trends, and to create the financial projections.

4.2 Business Models for SUNCOM Voice Services

Insourcing

The Business Case is required to consider as an option “insourcing” of Enterprise Voice Services and functions. This is logical since the Business Case is required for large outsourcing procurements and should therefore consider whether “insourcing” would be a less costly option to the State of Florida than outside procurement. In this instance, insourcing would require the assets, capabilities and staff to construct and operate a statewide Enterprise Voice Services internet communications platform. This would require the State of Florida to become one of the very largest telecommunications operators in the state, and devote the corresponding resources to develop, operate and support a large telecommunications operation. In essence, the State of Florida would become a “CLEC” or Competitive Local Exchange Carrier. Therefore, as described below the costs associated with insourcing to provide EVS to state agency locations throughout the state as well as other eligible users would be extensive. The EVS network would be required to be able to originate and terminate voice communications to every residential, business and community anchor location in the State of Florida, as well as do the same for all national and international voice communications.

Thus, there would be a requirement for:

- Establishment of a presence in every local market, involving physical or virtual colocation in every central office in the State of Florida.
- This presence will require equipment in every central office where there are “customers”, which is essentially every central office. This is necessary due to the ubiquitous service requirement of the network to serve the state’s citizens, businesses and community anchor institutions.
- Establishment of network-to-network interfaces (“NNI”) with every local incumbent local exchange carrier in the State of Florida, as well as for other originating and terminating carriers such as long distance service providers. This is also necessary due to the ubiquitous service requirement of the network to serve the state’s citizens, businesses and community anchor institutions.
- Purchase and installation of a “soft switch” to support SIP and VoIP, and staff to manage connections to customer premise equipment including gateways and IADs.
- Purchase and installation of operational support systems (“OSS”) which support all back office systems associated with operating the EVS network, including administrative and other reports, facilities and maintenance, rating and billing functions.
- Purchase and installation of business support systems (“BSS”) which support all front office systems associated with operating the EVS network, including customer service representatives.
- Professional staffing (or outsourcing) for management functions not present today at DMS including regulatory filings, FCC/PSC reporting, carrier relations and the like.
- Operations staffing for a statewide network including billing, provisioning, maintenance and repair, and the Network Operations Center (NOC). This would be a large staffing requirement, which may be estimated by considering the number of persons employed at existing telecommunications and cable TV providers in Florida.
- Establishment of the Network Operations Center itself.
- Related investments and operations beyond these high level items would also be required.

Beyond being a massive undertaking, establishment of a new CLEC operation is completely contrary to the direction of the telecommunications industry. New CLECs are not emerging. In fact, they are going away in the current deregulated environment and with the advent of cloud level services. The costs to establish a large new statewide internet communications company or CLEC are obviously large and involve considerable complexity and risk. Staffing costs alone would be significant to enable DMS to manage a statewide communications company. DMS is currently staffed to manage services on an outsourced basis – facilities and services are procured from service providers via contracts. To establish a CLEC operation, substantial additional staffing for data/IP engineering, VoIP/SIP engineering, billing administration, network operations, carrier negotiations, regulatory affairs, service order processing, product management, installation/maintenance and repair, and other related functions would be required.

The complexity and risk of establishing a large in-house CLEC operation is enhanced in a major way when considering that DMS would be undertaking the procurement of MFN2, and the related transition of customers from MFN to MFN2 during the same time period planning, investment and installation, and other implementation activities would be required for insourcing EVS. Establishment of a large, new statewide facilities-based internet communications operation by the State of Florida in order to insource Enterprise Voice Services is clearly infeasible given the nature of the requirements and implications described above. Therefore, resources were not devoted to creating and refining cost and investment estimates for an insourcing “option” that is known to be infeasible and unrealistic. No financial modeling was done for the insourcing option.

Other Models

The “outsourcing” and “combination insourcing/outsourcing” models and related assumptions are described in more detail below, in Section 4.4.2.

4.3 Market Conditions and Trends

Section 287.0571 (4)(g), F.S. A description of the current market for the contractual services that are under consideration for outsourcing.

4.3.1 Network Technology Transition

The nation’s telecommunications networks are in an accelerating transition of technologies based on TDM circuit-switched voice services originating and terminating on copper local loops to all-IP (Internet Protocol) networks employing fiber optic connections to end users. The technology transitions are occurring in applications (for example, TDM-based voice becomes Voice over IP), transport where TDM circuits and analog transmission yield in favor of IP packets, and physical facilities where copper loops and digital switches have yielded to fiber optic cabling in the local loop and IP “soft-switches.” Service providers and

other parties are “transitioning customers’ services from purpose-built networks to new applications that can ride over more general broadband transport networks.”²⁵

The technology transition is well advanced. Telecommunications providers in Florida as well as throughout the nation operate IP networks which are ubiquitous – these networks reach or can reach nearly everyone with access to IP-based services. Florida’s “MyFloridaNetwork” (MFN, soon to be MFN2) is such a network and the opportunity exists to transport voice communications over it. Some DMS customers have already begun this transition and are using the MFN network to transport their voice services. To embrace VoIP based SIP voice service models can dramatically reduce costs and lead to a widening array of improved and innovative products and services. Enterprise customers are accomplishing this service and technology transition away from individual voice “services” to an Enterprise Voice Services platform riding the IP-based network. The State of Florida has the opportunity to consolidate existing contracts for various voice services and provide all those services and more over an Enterprise Voice Services platform.

An EVS platform enables a connected enterprise characterized by access to people and information virtually anytime and anywhere for faster communication and greater collaboration using a variety of devices or mediums. Many devices or systems enable fast communication on their own, but few are linked together. EVS converges voice services onto data networks, such that all forms of audio/voice, video, Web, conferencing and desktop communications are economically provided over a unified network platform, instead of over separate networks. This convergence has been demonstrated to yield significant cost efficiencies and expansion of service capabilities²⁶.

4.3.2 Federal Communications Commission (FCC) Order Revamping Access Charges

The FCC recently issued an Order²⁷ which fundamentally changes the structure and prices for access charges on a nationwide basis. Access charges are the prices that local exchange providers (or LEC, like CenturyLink, Verizon and AT&T for example) charge to a service provider which *originates* or *terminates* a call from or to a caller on the LEC’s network. Access charges are currently structured to levy per-minute-of-use charges for each minute of a call. Access charges are a cost which the providers currently providing 800/toll free and long distance services must include in their pricing to DMS. Therefore, this FCC Order is important because prices currently charged to DMS under contract for voice services are higher than they otherwise would be to recover these access charge costs.

²⁵ *In the Matter of Technology Transitions; AT&T Petition to Launch a Proceeding Concerning the TDM – to – IP Transition; Connect America Fund; Structure and Practices of the Video Relay Service Program; Telecommunications Relay Services and Speech – to – Speech Services for Individuals with Hearing and Speech Disabilities; and, Numbering Policies for Modern Communications*; GN Docket Nos. 13-5 and 12-353, WC Docket Nos. 10-90 and 13-97, and CG Docket Nos. 10-51 and 03-123; *Report and Order and Further Notice of Proposed Rulemaking* (January 31, 2014), at paragraph 17.

²⁶ Forrester; *SIP Trunking May Save You Money, I&O Professionals Need To Explore SIP Trunking, But Consider Application, Security, And Interoperability Costs When Calculating ROI*.

²⁷ *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; Mobility Fund*; WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, WT Docket No. 10-208, *Report and Order and Further Notice of Proposed Rulemaking* (Nov. 18, 2011).

The FCC has decided in this massive order to eliminate per minute of use charging for switched access. The need for this decision is driven by the network technology transition sweeping the industry. The FCC states this “existing [access charge] system, based on minutes rather than megabytes, is also fundamentally in tension with and a deterrent to deployment of IP networks.”²⁸ The FCC decision provides for the transition from TDM networking to IP networking. The FCC set a transition path for elimination of per minute of use switched access charges in favor of a “bill and keep” approach in which no switched access payments are made from one carrier to another for network access. The transition approach ordered by the FCC in 2011 includes the following elements:

- An immediate cap to all interstate and intrastate switched access rates, for “price cap carriers” which includes AT&T, Verizon and CenturyLink.²⁹ No further increases to these rates will be allowed. For non-price cap carriers (such as the smaller companies in Florida, i.e., FairPoint) all terminating intrastate access rates are capped.
- “Price cap” companies (AT&T, Verizon and CenturyLink) transition *terminating* switched access rates to “bill and keep” as follows:
 - To the extent intrastate switched access rates – including originating and terminating dedicated transport – are higher than corresponding interstate rates, these intrastate rates will be transitioned down to the interstate rate level in two steps by July 2013. This has already been accomplished.
 - Then, interstate rates will be transitioned down to \$0.0007 per minute in three steps by July 2016. The first step has already been accomplished.
 - Then, interstate terminating switched end office rates will be transitioned from \$0.0007 per minute zero (“bill and keep”) on July 1, 2017.
 - Interstate originating and terminating dedicated transport rates will be reduced to zero (or “bill and keep”) on July 1, 2018.
- The FCC will use a Further Notice of Proposed Rulemaking (FNPRM) to address a similar transition for *originating* switched access rates, and switched transport rates. This FNPRM has not yet been issued by the FCC.

By July 1, 2018, there will be no per minute of use access charge associated with terminating 800 or long distance calling into AT&T, Verizon and CenturyLink exchanges, nor any per minute access charge associated with use of dedicated transport facilities for originating or terminating calls. The Florida Public Service Commission’s “2013 Access and Toll Report”³⁰ provides the following information regarding access charges in Florida, based on rates as of October 1, 2013:

²⁸ *Id.*, at paragraph 9.

²⁹ *Id.*, at paragraph 801.

³⁰ http://www.psc.state.fl.us/publications/pdf/telecomm/Fla_Access_Toll_Report_2013.pdf

Switched Access Charges						
	AT&T		CenturyLink		Verizon	
	Originating	Terminating	Originating	Terminating	Originating	Terminating
State	\$ 0.0106285	\$ 0.0049008	\$ 0.0233084	\$ 0.0069834	\$ 0.0268398	\$ 0.0065429
Interstate	\$ 0.0049008	\$ 0.0049008	\$ 0.0069834	\$ 0.0069834	\$ 0.0065429	\$ 0.0065429
FCC Transition Level		\$ 0.0007		\$ 0.0007		\$ 0.0007
Percent Reduction		86%		90%		89%
"Bill and Keep" Level		\$ -		\$ -		\$ -

Figure 16 - Florida Access Charges

Due to time lag, this report does not include the most current access charge rates, which likely would be the ones effective July 1, 2014 to include the first step in the transition toward \$0.0007 and “bill and keep”.

Furthermore, the FCC has stated that it will move *originating* access charges from present per minute of use charges to “bill and keep” although no order with specific transition steps and dates has been issued by the FCC.

This removes a significant element of cost embedded in current SUNCOM long distance and 800 contract rates. Corresponding rate reductions and modification of rate structures away from strict per minute of use charges should be expected by the State of Florida in the EVS contracting. However, the size of the cost reduction to the State of Florida cannot be estimated based on these nominal access charge rates. Volumes (switched access minutes of use) billed to SUNCOM’s long distance provider are not known.

4.4 Evaluation of the Options

The following is the evaluation of options available to the state for services similar to voice service delivery:

4.4.1 Descriptions of Available Options

Section 287.0571 (4)(e), F.S. - A description of available options for achieving the goals. If State employees are currently performing the service or activity, at least one option involving maintaining State provision of the service or activity shall be included.

This business case examines three options specifically for the scope of continued support, integration, and installation of voice telecommunication services and ancillary features/capabilities following the expiration of the current contracts for voice services. The new voice service delivery, if procured, would be known as “EVS” or Enterprise Voice Services. Current voice service contracting is:

1. AT&T Centrex contract: This contract provides for local access services such as Centrex and ISDN Basic Rate Interface (BRI) and Primary Rate Interface (PRI) and related services in AT&T’s market areas in the State of Florida. SIP trunking and Hosted VoIP are also provided under this contract. This contract can be renewed until January 2017, then extended for 24 months.
2. CenturyLink Centrex contract: This contract provides for local access services such as Centrex and ISDN Basic Rate Interface (BRI) and Primary Rate Interface (PRI) and related services in CenturyLink’s market areas in the State of Florida. SIP trunking, Hosted VoIP and Hosted IVR are also provided under this contract. This contract has been renewed to July 2019.

3. Verizon Centrex contract: This contract provides for local access services such as Centrex and ISDN Basic Rate Interface (BRI) and Primary Rate Interface (PRI) and related services in Verizon's market areas in the State of Florida. This contract can be extended to July 2019.
4. 800 Toll Free services: This contract with EarthLink (formerly with Deltacom) provides for long distance calling into call centers with no charges billed to the calling party, but instead billed ultimately to the receiving party. This contract can be extended to September 2019.
5. Long Distance calling services: This contract with EarthLink provides for intrastate, interstate and international long distance calling. This contract can be extended for up to five years beyond initial contract expiration at November 2016.
6. Voice Conferencing services provided by BT Conferencing. This contract can be extended until June, 2018.

The options for procurement of EVS capability that are evaluated in this Business Case are:

1. An option based on insourcing whereby DMS manages the majority of voice telecommunications functions, similar to the operations of a competitive exchange telephone company. For reasons described above, this option is not further considered in this Business Case. **(Option 1)**
2. An option based on a combination of insource/outsource whereby DMS outsources the significant telecommunications functions and transitions them to a usage-based data model for contract cost and user pricing **(Option 2)**; and,
3. An option based on a combination of insource/outsource whereby DMS outsources the significant telecommunications functions and transitions them to a flat-rate data model for contract cost and user pricing. **(Option 3)**

These options were evaluated and included in this business case because they are within the scope for outsourcing as required by Chapter 287.0571, F.S., and they represent common procurement options utilized by the state for similar needs.

Forms of procurement reviewed in this business case:

Competitive Procurement - Section 287.057, F.S., and Department of Management Services (DMS) Rule 60A-1, Florida Administrative Code, provides:

Invitation to Negotiate (ITN) – Used when the agency knows the desired end result, but is not sure how to get there; or, there are many ways to get to the end result; or, the qualifications of the provider and quality is more important than price. This option works best when highly technical and/or complex services are being acquired. The price structure for services is negotiated.

Invitation to Bid (ITB) – Used when the agency knows exactly what it wants. Price is the determining factor in the award.

Request for Proposal (RFP) – Used when the agency has a general idea of what it wants. Services and price are evaluated.

Combination of Insource and Outsource - through the migration of service processes currently provided by incumbent vendor to the state DMS using resources that are state employees full-time equivalent positions; and outsourcing elements of operations that fall outside of the physical or technical capabilities of DMS, such as procurement of long-haul fiber transport, local loop access transport, maintenance & repair, etc.

Insource - Is an organization’s termination of the contracting for a business function and the commencement of performing it internally. Insourcing is a business decision that is often made to maintain control of critical functions or competencies that are essential the organization’s mission. Insourcing is widely used to reduce costs across the organization’s fiscal structures. Within the context of this business case, this represents the opportunity to bring essential services inside DMS that were traditionally performed by an outsourced vendor.

Outsource - Is the contracting out of a business processes and services to a third-party. Within the context of this business case, this represents establishing a portfolio of processes and services by a third-party vendor who is for-profit in support of needs that are beyond the capability of the State of Florida’s resources.

4.4.2 Assumptions for Options

The Financial modeling presented in this Business Case uses the “combination insource/outsource” framework.

4.4.2.1 Insourcing

For reasons described above in Section 4.2, this option is not considered further in this Business Case.

4.4.2.2 Outsourcing

It was determined through analysis and feedback from DMS that operationally business functions showed the options to always include a significant portion of services to be included in any option for consideration. Therefore to give perspective on how assumptions were evaluated, the following represent what would have been viewed if an outsourced only model were evaluated:

- Timeline:
 - EVS contract executed: May 2016. Ten-year term, with renewal at five years. Twenty-four-month transition begins generally per DMS Key Milestones. Twenty-four-month transition to provide adequate cushion for agencies with large voice service implementations.
 - Voice service contract extension expires, migration from legacy voice complete for remaining agencies and other eligible users, transition ends: July, 2019, new pricing fully realized. Some level of legacy voice services may be continued to provide for small offices and locations.
 - First renewal period: July, 2021.
 - End of EVS contract: July, 2026.

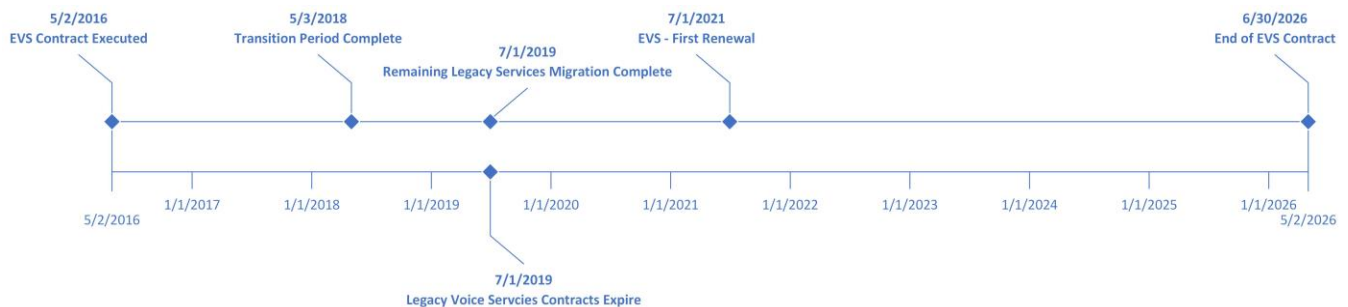


Figure 17 - EVS Implementation Timeline

- State agencies have limited resources to perform a reconfiguration of existing services;
- Funding sources are established based on known rate structures;
- Ability to bulk buy services will result in cost saving across the service layers;
- Ability to utilize new technology as the vendor's operational environment evolves over the life of the contract;
- Industry accepted service level agreement implementation;
- Industry accepted access service layers to core infrastructure;
- Industry accepted customer premise equipment;
- Industry accepted core routing equipment;
- Industry accepted network monitoring and reporting services;
- Industry accepted security services capabilities;
- Vendor customer services will be uniform for all service layers; and
- Vendor will provide improved capabilities over life of contract based on improvements established within the vendors services portfolio

4.4.2.3 Combination Insource / Outsource

- Timeline:
 - EVS insourcing and outsourcing begins: May, 2016. Twenty-four-month transition begins generally per DMS Key Milestones. Twenty-four-month transition used to provide adequate cushion for agencies with large voice service implementations.
 - Voice services contract extension expires, migration from legacy voice services complete for remaining agencies and other eligible users, transition ends: July, 2019, new pricing fully realized. Some level of legacy voice services may be continued to provide for small offices and locations.

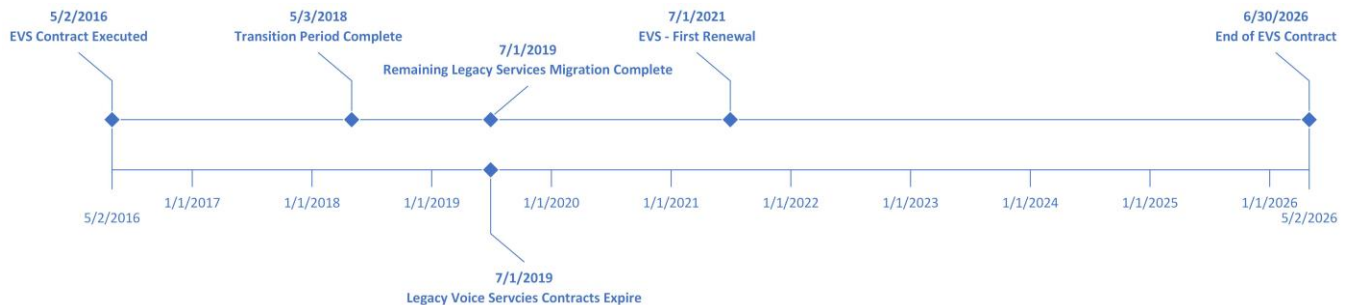


Figure 18 - EVS Implementation Timeline

- The Department of Management Services will be required to obtain and establish new resources as appropriate based upon service implementation;
 - Infrastructure network engineering
 - Infrastructure management and monitoring
 - Infrastructure provisioning/installation/maintenance
 - Infrastructure circuit grooming and management
 - Customer Services Representatives
 - Billing Specialists
 - Quality Assurance Analyst
 - Project Management
 - Contract Management

- Field Services Technicians
- State agencies have limited resources to perform a reconfiguration of existing services;
- Funding sources are established based on known rate structures;
- Loss of ability to bulk buy services will result in higher costs across the service layers due to support services contract fragmentation;
- Evolution of technology will be the responsibility of DMS; thus keeping voice current with capabilities will be directly dependent on technical knowledge and capabilities of the DMS resources;
- Service level agreements will require DMS intervention to mitigate numerous contract responsibilities coupled with services the DMS performs through insourcing;
- Access service layers to core infrastructure will require extensive monitoring and negotiated integration agreement to ensure standardization;
- Customer premises equipment will require standardization based on DMS technical specification;
- Core routing equipment would become an outsourced component; SLAs will need to be carefully implemented;
- Network monitoring and reporting services will require extensive integration across various service layers that are established through possible separate contracts; and
- Security services capabilities will require integration across various service layers that are established through possible separate contracts

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4.5 Analysis Methodology

Total Economic Impact (TEI) methodology is utilized in all phases of the analysis and business case definition. This methodology is designed to capture and properly communicate the value of Information Technology initiatives in a common business language. In so doing, TEI considers four elements of any initiative:

- Benefits
- Costs (sometimes referred to as total cost of ownership, or TCO)
- Flexibility
- Risk

Figure below shows the TEI methodology conceptually. Benefits, flexibility, and costs are considered, through the filter of risk assessment, in determining an expected return on investment for any given initiative.

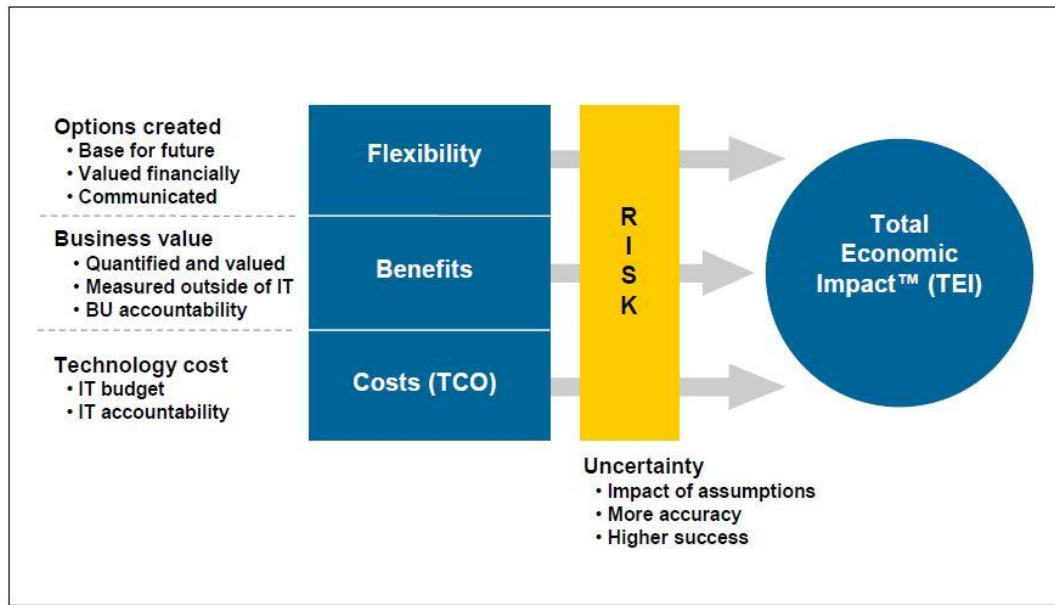


Figure 19 - The Total Economic Impact Methodology³¹

Using this methodology, the approach to providing this business case will provide best case and risk adjusted scenario analysis for options under consideration. This will serve as a broad scope of information of the ideal or optimal implementation of a best case implementation. Development of a risk adjusted business case analysis provides the most likely scenario incorporating environmental constraints, discrete risks, and uncertainty. While we believe it is important to understand the best case scenario, the risk adjusted scenario takes into consideration quantifiable variables that provide insight into risks, assumptions, and expectations with respect to the business case definition process. The risk adjusted scenario will expand and expose all issues for a procurement and implementation of the scale and complexity of EVS. Having both best case and most likely scenarios analyzed provides DMS and key stakeholders an unprecedented level of quantitative information informed decision making in the planning and control of the business change and subsequent benefits realization for procurement of EVS.

³¹ Source: Forrester Research, Inc.

4.6 Advantages, Disadvantages, and Risks

Section 287.0571 (4)(f) - An analysis of the advantages and disadvantages of each option, including, at a minimum, potential performance improvements and risks.

Advantages and disadvantages for the alternative options as compared to continued separate voice services contracting, and to each other, are as follows:

4.6.1 Option 2

Combination of insource/outsource whereby DMS outsources the significant telecommunications functions and services associated with the enterprise voice platform and transitions them to a *usage-based data model* for contract cost and user pricing; utilizes the MFN network; internal DMS billing, administrative, network operations, and customer service functions.

Advantages

- Meets each and every one of DMS' performance objectives as represented in its guiding principles;
- Relies upon the existing MFN network for data transport and voice service provisioning through the SIP plane. All agencies and users are familiar with MFN and utilize it in some fashion;
- Continues current operating mode, practices, and service provisioning and alternatives;
- Customers experience "the same" exposure to usage patterns, and usage based charges as under current separate voice contracts;
- Provides opportunities for DMS to positively influence the evolution of specific technology services more quickly in the interest of EVS customers;
- Minimizes additional capital expenditures by DMS and EVS customers, since investment, capacity and technology evolution are managed by the EVS provider;
- Achieves the goal of improving overall savings to voice services customers and reduced costs to DMS through simplified billing and administration;
- Facilitates evolution of technologies through ITN purchasing power, and by the nature of the EVS platform solution;
- Provides greater assurance of achieving required SLA managed by selected vendor through unified ITN procurement;
- Facilitates negotiation with single party for re-pricing at various points over time; and
- Maintains existing insourced functions for DMS operations in an evolutionary and simplified mode.

Disadvantages or Potential Concerns

- Directs the customer away from technology (TDM) and services with which they may be more familiar, potentially requiring some level of training and support;
- Usage based pricing may inhibit utilization of services (such as calls, or data utilization, e.g, Mb), which would otherwise be beneficial, or negatively impact budgets;
- Maintains an environment where a single or few vendors control the majority of EVS services; and
- Potential for implementation and transition risks for new provider selected via ITN.

Risks

- Transitional financial/budget risk in additional equipment and staff cost (e.g., training and prioritizing time to preparation for the transition) that will be necessary to transition to EVS

4.6.2 Option 3

Combination of insource/outsource whereby DMS outsources the significant telecommunications functions and services associated with the enterprise voice platform and transitions them to a *flat-rate data model* for contract cost and user pricing; utilizes the MFN network; internal DMS billing, administrative, network operations, and customer service functions.

Advantages

- Meets each and every one of DMS' performance objectives as represented in its guiding principles;
- Relies upon the existing MFN network for data transport and voice service provisioning through the SIP plane. All agencies and users are familiar with MFN and utilize it in some fashion;
- Continues current operating mode, practices, and service provisioning and alternatives;
- Potential for lower overall pricing based on aggregation of usage and negotiation of commitment levels and pricing for tiered levels of utilization, similar to the mobile wireless data pricing model;
- Provides opportunities for DMS to positively influence the evolution of specific technology services more quickly in the interest of EVS customers;
- Minimizes additional capital expenditures by DMS and EVS customers, since investment, capacity and technology evolution are managed by the EVS provider;
- Achieves the goal of improving overall savings to voice services customers and reduced costs to DMS through simplified billing and administration;
- Facilitates evolution of technologies through ITN purchasing power, and by the nature of the EVS platform solution;
- Provides greater assurance of achieving required SLA managed by selected vendor through unified ITN procurement;
- Facilitates negotiation with single party for re-pricing at various points over time; and
- Maintains existing insourced functions for DMS operations in an evolutionary and simplified mode.

Disadvantages or Potential Concerns

- Potential for less than optimal savings from misspecification of tier levels and break points;
- Directs the customer away from technology (TDM) and services with which they may be more familiar, potentially requiring some level of training and support;
- Flat rate pricing may present a scenario of over utilization of services (such as calls, or data utilization, e.g, Mb move beyond capabilities of infrastructure), which would negatively impact operations of the topology of EVS;

- Maintains an environment where a single or few vendors control the majority of EVS services; and
- Potential for implementation and transition risks for new provider selected via ITN.

Risks

- Transitional financial/budget risk in additional equipment and staff cost (e.g., training and prioritizing time to preparation for the transition) that will be necessary to transition to EVS

4.7 Scalability, Customer Satisfaction, Ease of Implementation, and Stability

4.7.1 Option 1

Option 1's insourcing strategy presents significant challenges for DMS in transitioning to a full-fledge telecommunications company. The execution risk of doing so could significantly impact DMS' operations and customers, especially during a period that also includes transition to MFN2, as an EVS transition plan that spans a minimum of up to 5 years would be required to successfully implement Option 1.

Scalability

- Inherent scalability based upon embedded telecommunications technology to customers through DMS' wide coverage area (MFN) across the State of Florida and ability to scale to provide a wide variety of voice services to its customers. However, the cost to create this scalability is prohibitive in Option 1 and achieving long-term economies of scale in this solution is not anticipated.

Customer Satisfaction

- DMS would be responsible for every operational function to manage its customers in Option 1. This would require DMS to not only manage a statewide network, but also all functions related to that network, including provisioning, customer service, network operations, troubleshooting, engineering and billing. Given this additional operational load, it is unlikely that customers would receive the levels of service commensurate with a large telecommunications company providing these services.

Ease of Implementation

- Implementation of Option 1 is infeasible given the significant cost, staffing, regulatory and funding requirements to develop a statewide telecommunications company. A period of up to 5 years is anticipated for DMS to migrate to Option 1.

Stability

- The stability of voice services for DMS' customers is unknown in Option 1 and would be based on DMS' successful execution in building its voice services network and related operations. Given the significant requirements to build and operate a statewide voice services network, it is

unlikely that DMS could provide the same levels of stability and reliability that are commonly found in the telecommunications industry and those that are being received by DMS' customers today.

4.7.2 Option 2 and 3

Continued migration of DMS' voice services onto MFN will provide a long-term platform to support the growth of DMS' Local Services portfolio to meet its customers' needs. MFN's inherent flexibility in Ethernet transport will allow customers to continuously grow their services without costly replacement of access lines. Once dimensioned for additional volume of migrated voice services, the MFN core will also be able to accommodate future growth in voice services, providing a backbone that connects DMS customers to one another and interconnects with other voice and data networks beyond MFN. Options 2 and 3 will provide the following:

Scalability

- Long-term scalability through utilization of MFN for core transport and local access;
- Simple upgradeability of customer's service by adding bandwidth to Ethernet-based access services on MFN; and
- Nearly unlimited provisioning of SIP trunking and Hosted VoIP lines within the VoIP environment proposed in the EVS Contract.

Customer Satisfaction

- Migrating DMS' voice services to a single-vendor solution in the proposed EVS Contract will provide more comprehensive customer service and support; and
- Ordering, provisioning and billing should all become more streamlined as DMS utilizes a single-vendor solution for its proposed EVS Contract, reducing the complexity for end customers.

Ease of Implementation

- Requires a tactical implementation plan for the large voice services agencies to effectively transition them over to MFN for local access services;
- May require the procurement of additional equipment to manage VoIP at the customer premise; potentially using the STEPS or the STEPS alternative contract to do so;
- May require DMS to "front end" legacy customer voice equipment with translation devices that will convert TDM-based voice services to VoIP, DMS will need to manage this transition plan with its customers;
- Usage-based products, including Long Distance, 800 Service and Conferencing will require only minimal changes for DMS customers to transition them into a new EVS Contract; and
- Additional flat fixed rate products including Hosted VoIP and SIP trunking will require less implementation time than traditional Local Access services.

Stability

- Relies on the underlying stability of MFN, which provides redundant core path connections between major connection points throughout the State of Florida; and,
- Utilizes the built-in quality of service features of MFN that provides guarantees for voice traffic, which should result in high reliability and performance for DMS' customers.

4.8 Potential Improvements/Service Features

Potential improvements and Service Features to be addressed in the new EVS procurement, include:

- Statewide cloud hosted service directly connected to MFN core via network-to-network interface.
- Platform flexibility, scalability, and support for industry standards, enabling a seamless integration of third-party technologies and applications.
- Open architecture offering an enterprise solution working seamlessly with leading voice service providers and hardware vendors.
- Feature rich, low cost options providing a comprehensive suite of enhanced, cloud-base, unified communications capabilities without the operational and maintenance expense associated with on-premises PBX equipment.
- A migration plan to transition customers to a robust enterprise voice service solution.
- Service which supports MFN customers, and facilitates service to non-MFN customers via an inexpensive voice-only data circuit.
- Delivery of voice services over the Internet connections.
- In conjunction with the new contract for MFN (MyFloridaNet-2), service which will interface and utilize the enterprise Call Session Control Function (CSCF) plane to communicate via MyFloridaNet-2 and the Internet.
- Interfacing directly with Florida's future NG911 statewide Emergency Services Internet Protocol Network routing system.
- Customers of the hosted telephony service having the option to purchase or rent all user agents including traditional telephone sets and soft phones.
- The capability for all aspects of the service to be partitioned to provide a scope-of-view and scope-of-command for each customer, allowing network administrators to manage all of their user agents.
- Service Level Agreements for DMS and its customers, supported by a tool set for monitoring service levels.

4.9 Potential Elimination of Services

Where possible and financially viable, the eventual decommissioning of legacy voice services through migration to a new EVS platform will provide reduced cost and improved service layer capabilities through the implementation of unified VoIP based technologies.

4.10 Cost Benefit Analysis for Each Option

The Department of Management Services uses a margin percentage to markup costs from the voice services provider and related CPE to recover internal DMS costs. For example, the markup for local voice services ranges

from 5.5 percent to 9.75 percent currently – for an average of about 7% – depending on the product or service with a 3 percent margin used for CPE. The optional services and features of voice services are material to the financial analysis on a separate basis, and are not addressed as separate line items, but instead are included in local service revenues.

The financial analysis compares the two options and provides financial metrics to determine which options will:

1. Reduce overall costs for DMS in procuring and managing services;
2. Provide an opportunity to reduce costs for agencies utilizing enterprise voice services; and
3. Provide the greatest benefit for the least cost

4.11 Financial Model Base Case

This business case analysis first establishes a baseline of DMS' current business and financial environment for voice services, determined from historical business and financial data provided by DMS staff, including historical volumes, unit costs, revenues and vendor contracts. In modeling the various business case options, it was crucial to first determine a "starting point" that captured the current environment for DMS' voice services. Historical data was utilized to build a financial model of each one of DMS' voice services and the customers that utilized them. The model provides the total volume, revenue and unit cost of each service for each of the large voice services agencies individually (DCF, DEO, DOC, DOH, DOR and DOT) and collectively for Other State Agencies (smaller – agencies outside of the large customers) and Other Eligible Users (local, educational and non-profit agencies).

A survey of DMS' customers provided important insight into their current technology environment and future plans for voice services and how DMS could accommodate changing needs for a variety of voice services through the procurement of an EVS Contract. The results of these surveys for the large voice services agencies, as well as meetings with them, were incorporated into the forecasting for potential voice services that these organizations required. The large voice services agencies accounted for 74% of total revenues collected by DMS for state agency voice services. For the group of remaining state agencies and Other Eligible User organizations, trending from the large voice services agencies forecast was applied to these other customer classes to estimate their future needs for voice services using EVS.

Service Forecasts were developed over the 10-year period from the date of EVS contract execution (planned for May of 2016 under DMS Key Milestones), corresponding to fiscal year 2016-17 through fiscal year 2025-26³². Based on projections for DMS' EVS Services, direct and indirect costs were forecasted over the 10 year period. These projections were compared against the baseline scenario (which forecasted no changes to existing contracts, pricing or DMS' business model) to determine the potential cost savings to DMS and to its customers. Options 2 and 3 were also compared against each other to determine which Option resulted in the lowest cost.

Over time, DMS would achieve cost savings to the state through migration of services newer technologies without an EVS solution. Efforts are on-going today on this front being driven by DMS across the various voice

³² This Report uses the State of Florida fiscal year and Fiscal Year Ending (FYE) terminology. The state's fiscal years begin on July 1 of each year, and end on June 30 of the following year.

services layers. The expectation of an EVS solution is to provide a unified service portfolio that provides the opportunity to even greater cost savings and potentially faster migration to newer technology voice capabilities.

4.12 SUNCOM Telephony Equipment Premise-based Services (STEPS)

The STEPS contract provides a vehicle for State agencies to leverage bulk buying power for telecommunications equipment. The STEPS contract is set to expire March 2, 2015. Given this desire to procure equipment is somewhat driven by an agency's expressed choice of physical hardware, it is not recommended that the – eliminate this contract vehicle and move this option to a standard equipment procurement vehicle at the DMS level. Although it is anticipated the eventual EVS solutions provider will have an adequate equipment portfolio to choose from, the ability to leverage options from additional telecommunications hardware and software providers is an advantage for the state. It is recommended that STEPS set boundaries for supported features through a defined set of standards that create the minimum acceptable capabilities requirement for integration into EVS.

The STEPS contract costs are included in the business case; however, they are only provided as planning cost information as this layer of service will be a choice of purchase on a going forward basis once an EVS platform is fully evolved with hardware/software options available through the procurement of EVS.

4.13 Option 1 – Insource

For reasons described above in Section 4.2, this option is not considered further in this Business Case.

4.14 Option 2 – Insource/Outsource (Usage Based IP Model)

Option 2 presents the evaluation of existing voice service offerings cost structures, trends, and DMS' exiting voice services. This option specifically represents a clear view to leverage the MFN network to reduce access costs for connected voice services. Option 2 utilizes the existing data connections provided by the MFN network to transport voice services for agencies to their customers and between agencies, and allows the use of separate voice connections (generally on copper) to be discontinued. Leveraging the MFN network reduces DMS' costs for duplicative legacy access lines, which results in a reduction of DMS' total access and overhead costs, as well as simplifying the technology environment for DMS and its customers.

Option 2 assumes that a new EVS Contract is procured, bid, negotiated and executed by DMS by May of 2016, which includes the procurement of an expanded platform of Voice over IP ("VoIP") and Session Initiation Protocol ("SIP") services. DMS already procures Hosted VoIP and SIP services from its two existing vendors, CenturyLink and AT&T. DMS could maintain the current volume of services on these two existing contracts or plan to migrate them to the new EVS Contract if the terms and pricing were more favorable, which is anticipated. VoIP and SIP services under the new EVS Contract will enable DMS' customers to migrate their voice services onto the MFN network over a 3-year period, starting at the execution of the EVS contract and ending with the expiration of the original vendor contracts (for access lines) in July of 2019. Over this period, DMS' six major agencies as well as the remaining state and local agencies will have adequate time to plan and implement their migration of voice services onto MFN, in coordination with DMS and the selected vendor for the EVS contract.

The EVS Contract is also intended to be a replacement for DMS' other current voice services with AT&T, CenturyLink, Verizon, EarthLink and BT Conferencing and will instead utilize a single vendor to procure all DMS voice services. Option 2 assumes these services will continue to be billed with a usage-based model; however, they are anticipated to be consolidated into a single-vendor environment. The voice telecommunications industry has evolved to the point where a single vendor can efficiently supply the entire range of DMS voice services and do so at a more competitive price point than DMS is currently paying in its existing multi-contract environment. DMS can also utilize its volume purchasing power in this single vendor solution to negotiate lower costs for larger volumes of services with the proposed vendor.

4.14.1 Option Description & Analysis

4.14.1.1 Technology Requirements

Currently, a significant majority of agencies' voice services utilize traditional telephony access lines connected to exchange based switching that establishes connections to other lines or local telephone exchanges. These local exchanges utilize a traditional Time Division Multiplexing³³ (TDM)-based access lines to connect individual facilities to each carrier's network, providing the local connection between each agency's equipment and the telephony network. These access lines are provisioned and managed separately from each agency's other data and MFN services. DMS customers currently utilize four types of legacy voice access lines:

1. Primary Rate Interface ("PRI") is a telecommunications interface standard used on an Integrated Services Digital Network (ISDN) for carrying multiple DS0 voice and data transmissions between the network and a user.
2. Basic Rate Interface ("BRI") is an Integrated Services Digital Network (ISDN) configuration intended primarily for use in subscriber lines similar to those that have long been used for voice-grade telephone service.
3. Centrex is a PBX-like service providing switching at the central office instead of at the customer's premises. Typically, the telephone company owns and manages all the communications equipment and software necessary to implement the Centrex service and then sells various services to the customer.
4. "1FB" is a Single Line, Flat Rate, and Business Telephone Line. It is a basic business telephone line providing a voice grade service to the end customer.

The emergence of VoIP has created new options that allow data connections to be utilized to transport telephone calls in the same manner as the legacy lines described above. A common scenario is to

³³ **Time-division multiplexing (TDM)** is a method of transmitting and receiving independent signals over a common signal path by means of synchronized switches at each end of the transmission line so that each signal appears on the line only a fraction of time in an alternating pattern. In telephony, TDM generally refers to a type of access connection used in connecting terminating voice equipment to a telephony network. Emerging technologies such as Ethernet are replacing TDM access lines because of their greater flexibility and lower cost.

transport these voice calls across Ethernet networks, such as MFN, to allow an organization's existing data infrastructure to transport voice traffic. The objectives of doing so include:

1. Removing the cost of duplicative infrastructure – expensive legacy access lines can be disconnected once voice traffic is migrated to the Ethernet-based VoIP network;
2. Reducing the complexity of multiple connections – organizations do not need to manage separate voice and data connections, all traffic is transported across a single Ethernet-based connection; and
3. Simplifying upgrades and expansions – when organizations need to upgrade or expand their voice services, Ethernet-based VoIP connections allow them to do so easily, with little incremental cost and with minimal disruption.

Option 2 envisions a “SIP Control Plane” function within the MFN network whereby it is equipped for voice transport services and interconnection with vendor telephony switching equipment, which in the VoIP environment includes softswitch³⁴ and media gateway³⁵ equipment. A SIP Control Plane is the incorporation of telephony capabilities within the MFN network that relies on Voice over IP (“VoIP”) to carry telephone calls across the MFN network. The SIP Control Plane utilizes the Quality of Service³⁶ (“QoS”) features of the MFN network to enable the transport of VoIP traffic across MFN's backbone and interconnect with originating and terminating voice carriers. It leverages the MFN data connections that each agency maintains to transport all voice traffic. Further, it leverages the capabilities already built into MFN to maximize the use of this network for the benefit of DMS and its customers.

For MFN to be equipped with a SIP Control Plane, the projected EVS Contract must specify certain technical requirements. The vendor must be capable of interfacing with MFN via its SBC's and further managed by Session Management devices that provide Hosted VoIP and SIP trunking connections to agencies connected to the MFN network. Multiple types of connections will be required to support DMS customers who will transition away from their existing TDM-Based access line products (e.g., Centrex and PRI) into either a SIP trunking or a Hosted VoIP product. The details of this transition and

³⁴ A **softswitch**, short for **software switch**, is a central device in a telecommunications network which connects telephone calls from one phone line to another, across a telecommunication network or the public Internet, entirely by means of software running on a general-purpose computer system. Most landline calls are routed by purpose-built electronic hardware; however, soft switches using general purpose servers and VoIP technology are becoming more popular.

³⁵ A **media gateway** is a translation device or service that converts digital media streams between disparate telecommunications networks such as PSTN, SS7, Next Generation Networks (2G, 2.5G and 3G radio access networks) or PBX. Media gateways enable multimedia communications across Next Generation Networks over multiple transport protocols such as Asynchronous Transfer Mode (ATM) and Internet Protocol (IP).

³⁶ Quality of service is the overall performance of a telephony or communications network. It is particularly important for the transport of traffic with special requirements. In particular, much technology has been developed to allow computer networks to become as useful as telephone networks for audio conversations, as well as supporting new applications with even stricter service demands.

integration are described in the “Infrastructure Integration” section below. The vendor will be responsible for all origination, termination and call routing across the MFN network and interconnection with the PSTN in local markets unless legacy transport topology cannot be migrated timely. Careful planning should be performed to evaluate legacy transition/migration thresholds to ensure the agencies are supported accordingly.

The vendor must also support all local, long distance, toll-free, conference calling and other voice services currently procured in DMS’ multi-contract environment. The end objective of enabling the SIP Control Plane in MFN is to equip the network with a comprehensive portfolio of voice services provisioned through a single vendor and utilizing a single infrastructure to transport all voice traffic to and from DMS customers. This portfolio of services will be capable of growth and innovation. Doing so will result in the following potential cost reductions:

1. Permanent cost elimination of all legacy access lines for DMS customers, including PRI, BRI, Centrex and 1FB³⁷;
2. Reduction in local and long distance costs from reduced usage for any inter-agency calls or calls that stay “on-net” within the MFN SIP Control Plane;
3. Reduction in toll-free service per minute charges through negotiation with a single vendor at rates that are lower than DMS’ existing contract rates;
4. Reduction in conference calling per minute charges through negotiation with a single vendor at rates than are lower than DMS’ existing contract rates; and,
5. Reduction in current Hosted VoIP and SIP trunking costs by incorporating them into the new EVS Contract.

4.14.1.2 Billing

Option 2 envisions billing to remain with the selected vendor in a single-vendor EVS Contract. The vendor will bill DMS for services procured and DMS will bill its customers. Product billing will remain substantially similar to current state; however, billing will be significantly simplified across the Local Service product portfolio. Current billing for Local Service includes hundreds of carrier tariff codes for a significant amount of features, surcharges, mileage and other items that complicate the billing process and result in an overly complex billing function for DMS and its customers. The majority of these tariff codes are charged from local access services commensurate with legacy telephony infrastructure and historic ratemaking definition of “services”. With the modernization of and simplification of billing associated with EVS, DMS should anticipate a restructuring of the billing for Local Services, utilizing a data-based billing model that stems from the transition from practices associated with legacy access lines to MFN data lines. Flat rate and/or tiered data services will be billed instead of TDM-based access lines (although in Option 2 usage based pricing will continue for services which are currently rated on a per minute basis). This could simplify the billing process for DMS, reducing both cost and errors in billing and allow the agency to more easily manage its accounts receivable and accounts payable function.

³⁷ Analog faxing lines may still be required over an MFN SIP Control Plane due to the technological challenges with IP Faxing that are still apparent in the industry. As IP Faxing technologies are perfected, DMS will be able to transition these analog lines onto MFN’s SIP Control Plane as well.

The rate structure under Option 2 will remain usage based for those services that are currently charged on a per minute basis. In other words billing for long distance, toll free and conferencing services will continue to be on a per-minute of use basis to the customer.

4.14.1.3 Customer Service

The new EVS Contract should strive to provide superior customer service to DMS and its customers. Consolidation of the EVS Contract with a single vendor should provide a more comprehensive account management function by the vendor. DMS should expect and negotiate an executive account management team from the vendor that provides oversight of all lines of business with DMS. Since the new EVS Contract will entail significant migration of customers into a new technology platform (the MFN network), the vendor should supply resources required to plan, implement, troubleshoot, manage and monitor the transition process and continued service support to include training over the course of the life of the contract. Strong project oversight, management, and accountability are key for a successful migration of services.

Additionally, as multiple technologies continue to converge onto a single infrastructure, the importance of intelligent network operations becomes more important for DMS. Large-scale VoIP deployments can be challenging to manage and troubleshoot. DMS will require specific capabilities of the EVS Contract vendor to ensure that the VoIP environment is monitored proactively and the vendor has the necessary resources to provide a true managed services platform to DMS for its EVS services. This Business Case recommends that DMS specifically procure a managed services environment for its EVS services with the selected vendor.

4.14.1.4 Infrastructure Integration

DMS customers transitioning to MFN for voice service will require physical infrastructure changes at each location that will migrate to MFN for EVS services. Current customers maintain a combination of the 4 types of access lines described in Section 4.14.1.1, above including PRI, BRI, Centrex and/or 1FB. These customers need to work with DMS to migrate current services off of legacy access lines and onto MFN, which includes the following tasks:

1. Identifying the number of lines to migrate away from legacy access lines onto SIP trunking or Hosted VoIP call paths;
2. Determining the capabilities of premise-based PBX and terminating customer equipment to support SIP trunking and/or Hosted VoIP;
3. Identifying the upgrades to this equipment required to support SIP trunking and/or Hosted VoIP, or alternatively deploying either SIP Gateway³⁸ equipment or Integrated Access Devices³⁹ ("IADs") to support customers' existing premise-based equipment.

³⁹ An **Integrated Access Device** (or **IAD**) is a customer premise device that provides access to wide area networks and the Internet. Specifically, it aggregates multiple channels of information including voice and data across a single shared access link to a carrier or service provider POP (Point of Presence). The access link may be a T1 line, a DSL connection, a cable (CATV) network, a broadband wireless link, or a metro-Ethernet connection.

4. Porting numbers and/or other “one-off” services that are currently received with the legacy access lines;
5. Identifying potential MFN bandwidth upgrades necessary at each customer facility to support the increased load of VoIP traffic (VoIP traffic is a very low bandwidth application and will not normally require a significant upgrade in bandwidth; however an assessment of the total bandwidth required for VoIP traffic should be calculated to ensure sufficient bandwidth is available, and that quality of service is maintained);
6. Routing and IP connectivity for customer premise VoIP equipment to communicate with the MFN SIP Control Plane;
7. Testing of MFN VoIP services to ensure that DMS customers maintain minimal disruption to their voice services;
8. Scheduling maintenance windows for transition from legacy access lines to MFN provided voice services;
9. Identification of survivability options for service layers in the event of failure(s); and
10. Analysis of LAN infrastructure and configuration requirements to support EVS.

4.14.2 DMS Role

DMS must assume an active role in the transition of voice services onto the MFN network. During the transition period between 2016 and 2019 and immediately following execution of the EVS Contract, DMS will need to work with its customers to migrate a significant number of PRI and Centrex lines off of traditional access and onto MFN’s data access connections. This Business Case assumes this task can be accomplished over a three-year period. In this role, DMS will be required to work with the selected EVS Contract vendor, MFN contract vendor and customers to plan and migrate agencies to the MFN network. Large voice services customers are anticipated to take a significant amount of time to convert from their legacy voice services to the new EVS Contract and MFN network, but correspondingly they are further ahead in the transition to SIP/VoIP.

DMS will also be required to manage the transition from its existing usage-based contracts for 800 Service, Conferencing, Hosted IVR and Long Distance Services onto the new EVS Contract. Although the majority of these changes will be completed by the EVS Vendor, DMS will need to plan a steady migration with its customers to ensure there is minimal downtime experienced in transitioning to the new EVS services. To ensure success, strong project oversight, management, and accountability is key to successful migration.

4.14.3 Direct & Indirect Cost

Under Option 2, DMS will negotiate new access line costs for SIP trunking and Hosted VoIP for the EVS Contract vendor and will utilize existing MFN data connections to transport customer voice services. DMS will transition away from an environment of charges for traditional telephony access services and features, and into an environment of fixed fee and/or tiered data and VoIP services (but some element of usage based pricing will remain). As DMS customer’s transition off of these legacy services, new direct costs (increased capacity) may be incurred from the use of MFN connections to each DMS customer site. In some cases,

³⁹ A **VoIP gateway** is a gateway device that uses Internet Protocols to transmit and receive voice communications (VoIP).

transitioning voice services to MFN will require an upgrade in MFN capacity to carry the additional customer voice traffic. This will result in some incremental costs for DMS customers but is not anticipated to become a significant direct cost, as VoIP requires a small allocation of bandwidth. Notably, little to no upgrade of MFN capacity – thus no increased cost – was required in DCF’s transition to SIP-based VoIP provisioned over MFN connections, which has been largely accomplished.

In addition to these potential incremental bandwidth costs, the new EVS services model will incur Hosted VoIP and SIP trunking costs to replace traditional access lines across the Centrex, PRI, BRI and 1FB local service products. As these legacy access lines transition to MFN and EVS services, DMS will incur a “call path” cost per line, which is the VoIP equivalent of a traditional telephone service. The cost per call path is a fixed amount that will be negotiated with the vendor in the upcoming EVS Contract. Wholesale costs for SIP trunking lines are determined by volume and individual market conditions; however, they generally range from \$7 - \$20 per line. Hosted VoIP line costs are determined similarly and generally range from \$10 - \$30 per line. These ranges were determined by soliciting current pricing from wholesale telecommunications carriers in the Southeast market. Based on these figures, DMS can expect an average SIP trunking cost of \$7-\$10 per line and a Hosted VoIP cost of \$15-\$20 per line, inclusive of all ancillary feature charges and one-time charges.

Direct costs for usage based products, including 800 Service, Conferencing, Long Distance and Hosted IVR are expected to decline in line with the rates found for these services in the current telecommunications market. Costs continue to erode for these services each year and it is anticipated that the EVS Contract procured in 2016 should reflect continued cost reductions. In addition, placing DMS’ significant volume of services with a single vendor should enable DMS to negotiate lower costs for these services. Also, the FCC’s actions to eliminate usage sensitive access charging in favor of “bill and keep” inter-carrier compensation will eliminate significant cost currently experienced by service providers and reflected in current contract rates.

In addition to these direct costs from services supplied by the EVS Contract vendor, DMS should anticipate direct cost savings across internal operations that are required to manage the current environment. In a single-vendor environment that manages the entire EVS Contract, DMS should strive to streamline many internal operational functions, including general contract management, billing, provisioning, engineering and customer service. DMS could expect a savings of 15% - 20% in the majority of its current direct and indirect costs as a result of moving into a single-vendor managed EVS Contract. These cost savings should be expected across the following cost categories:

Direct Cost Categories

1. Salary & Benefits Including Staff Augmentation & Operations
2. Non-Salary Overhead (Including Non-Rent Expense, OCO and Data Processing)
3. Contractual Services including Equipment Maintenance, Background Checks, Etc.

Indirect Cost Categories

1. Common Costs, Including Charges Assessed for Admin Services, Insurance, Human Resources & Rent
2. General Business Support
3. Directory Services & Reception
4. Research & Development
5. Special Projects
6. ESF2 Functions
7. DMS Device Support
8. E911 Support

4.14.4 Overall Cost

Overall Cost for Option 2 is expected to be \$301.9 million over the 10-year period from execution of the EVS Contract in May 2016 through FY 2025-26.

4.14.5 Potential Savings

It is anticipated that DMS will realize potential savings through the procurement and negotiation of an EVS Contract with a single vendor, as follows:

DMS can expect a reduction in the per line access costs by migrating legacy access lines to SIP trunking and Hosted VoIP lines. DMS' large volume of access lines can be utilized to negotiate a lower wholesale rate for SIP trunking and Hosted VoIP access lines than is currently being provided under the contracts with CenturyLink and AT&T. Market research conducted in this study estimates that DMS can expect an average cost per SIP Trunk of \$7-\$10 per line and a Hosted VoIP cost of \$15-\$20 per line for full-featured VoIP services that are comparable to DMS' current access products. Over the next 10-years beginning in FY 2016-17 and assuming no volume changes, DMS is projected to spend up to \$85 million on traditional local service (access lines), \$154.99 million on Hosted VOIP and \$20.76 million on SIP trunking. Transitioning the traditional access lines to SIP trunking and Hosted VoIP lines using the MFN network is projected to reduce traditional local service costs to \$59.72 million and SIP trunking and Hosted VOIP services to \$140.6 million. Over this period, DMS could potentially save 30% on these traditional access lines and 20% on SIP trunking and Hosted VoIP services. In addition, DMS could save 40% on its usage-based products, including Switched Long Distance, Dedicated Long Distance, Toll-Free and Conferencing, reducing total vendor payments from \$378.65 million to \$270.87 million.

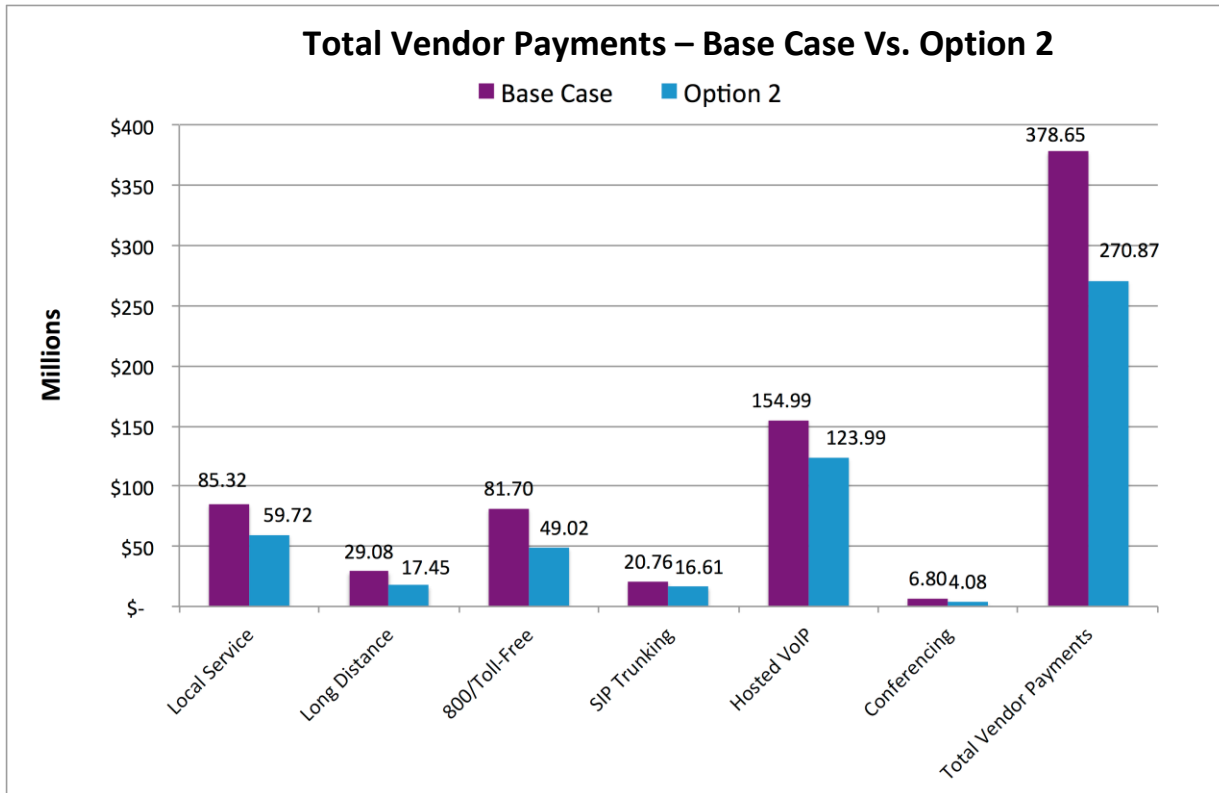


Figure 20 - Option 2 Total Saving Per Service

4.14.5.1 Transition Costs/Considerations

1. A reduction in the total long distance minutes utilized by migrating customers’ voice services to MFN. This will potentially reduce the amount of origination and termination charges levied by carriers through utilization of MFN as a single “local” exchange that incurs less long distance charges. The FCC’s action to move to “bill and keep” also supports this reduction. By migrating to EVS services, all agencies will have the benefit of local free calling between any other offices connected to MFN. DMS can expect potential per minute cost reductions in the upcoming 2016 EVS Contract and should negotiate periodic rate reductions throughout the term of the ten-year period. Separate rates for switched and dedicated long distance would no longer exist. It is expected that DMS can negotiate a 40% reduction in the current per minute long-distance rate, resulting from the trend of price erosion in long distance telephony, FCC transition to “bill and keep”, and additional volume purchasing power by consolidating all services into a single EVS Contract vendor.
2. A reduction in toll-free per minute costs through negotiating an EVS Contract with a single vendor who receives the entire volume of DMS’ voice business. Separate rates for switched and dedicated would no longer exist, instead DMS would receive a single rate for 800 Service at a lower per minute cost based on a single consolidated EVS Contract to a single vendor in 2016. The FCC’s actions to move to “bill and keep” also support this reduction. DMS should realize an up to 40% cost reduction to its current per minute rates for switched and dedicated services with the new EVS Contract in 2016. International rates would still apply, however the international calling portion of the 800 Service is insignificant to this Study (less than 1% of total costs). DMS is projected to spend \$81.70 million on 800 services over the next 10 years and with successful negotiation of the EVS

Contract in 2016 at these projected discounts, DMS can potentially save up to \$32.68 million over this period.

3. A reduction in conferencing per minute costs through negotiating an EVS Contract with a single vendor who receives the entire volume of DMS' voice business. DMS should realize up to 40% cost reduction in its current per minute rates for Conferencing with the new EVS Contract in 2016. Maintaining the current contract, DMS is projected to spend \$6.8 million on conferencing services over the next ten years. Under the new EVS Contract, DMS is projected to save up to \$2.72 million over the 10-year period, with cost reductions beginning shortly after execution of the new EVS Contract in 2016.
4. A reduction in the direct and indirect costs for DMS' internal operations to manage the portfolio of voice services. Consolidation into a single-vendor EVS Contract is expected to create synergies that result in cost reductions across general contract management, billing, provisioning, engineering and customer service. DMS is projected at 15% - 20% on these direct and indirect costs as a result of moving to a single-vendor EVS Contract. This saving may be achieved over the transition period on phase approach as appropriate.

4.14.5.2 Bandwidth Considerations

Migration of voice services to EVS over MFN will require a dimensioning of both the MFN core network, as discussed in the following section and MFN data access lines that connect to each DMS customer, as discussed in the following section. Although VoIP traffic generally requires a small amount of bandwidth, DMS and the agency will need to survey each customer site to determine the current bandwidth of the access line that connects that site to MFN. Notably, little to no upgrade of MFN capacity –thus no increased cost – was required in DCF's transition to SIP-based VoIP provisioned over MFN connections, which has been largely accomplished. As a general rule, a VoIP call consumes approximately 80 kilobits of data bandwidth utilizing a high-quality codec such as G.703⁴⁰. Prioritization of voice traffic over MFN is already being taken into consideration at the engineering level, but additional analysis must continue to ensure congestion does not occur within MFN as a service. Some common bandwidth requirements DMS will need to consider some common bandwidth requirements for the transition of customers with existing access lines such as:

Customers with Primary Rate Interface – 23 voice channels, 1 signaling channel

- VoIP Conversion = 24 channels x 80 kilobits per channel = 1.92 megabits of bandwidth required for VoIP services.
- A customer with a PRI access line will require an additional 1.92 megabits of bandwidth on its existing MFN access line to support VoIP traffic.

Customers with Centrex Service (Single Line) – 1 voice channel

- VoIP Conversion = 1 channel x 80 kilobits per channel = 80 kilobits of bandwidth required for VoIP services.

⁴⁰ G.703 is an ITU-T standard for transmitting voice or data over digital carriers such as T1.

- A customer with a Centrex access line will require an additional 80 kilobits of bandwidth on its existing MFN access to support VoIP traffic.

4.14.5.3 MFN Access Considerations

For DMS customers to transition into using MFN for their voice services, incremental monthly costs may be incurred from the increases in bandwidth necessary to support the additional load of traffic. These costs may be significant in cases where low-speed access lines are utilized for data connections into MFN. For example, a customer utilizing a T1 circuit connected to MFN maintains 1.544 megabits of usable bandwidth. If this customer maintains 10 traditional phone lines, conversion of this customer's voice services to EVS using VoIP will require 800 kilobits of bandwidth on that T1, or about 50% of the total capacity. If the current data usage on the T1 is high, the customer may be forced to upgrade to an additional T1 for carriage of 800 kilobits of VoIP traffic. In these cases, it may be less than optimal for a customer to utilize an EVS solution; however these represent a minority of cases. In many cases, DMS customers utilize higher bandwidth lines that can accommodate an increase in bandwidth, either without an upgrade consideration or with an incremental upgrade. In cases where an incremental cost is required, this upgrade will normally be achieved by increasing the bandwidth on the current service by a certain number of megabits. But note that MFN is also migrating to greater use of Ethernet connections, such that the T1 or multiple T1 connections may reasonably be abandoned in favor of more robust Ethernet connections in concert with the EVS transition. DMS should evaluate customer utilization on MFN data services to determine the feasibility of migrating them to an EVS solution, especially considering different MFN access options such as Ethernet or DSL.

4.14.5.4 Core Transport Considerations

Core transport within the MFN network is also a key consideration that DMS will need to factor into the transition plan in supporting a SIP Control Plane through an EVS Contract. All current voice traffic for DMS customers be migrated to VoIP and carried across the MFN network. DMS carries a significant amount of access lines. As these are migrated to MFN access connections, bandwidth will increase on the MFN network. Dimensioning of the MFN network to carry this additional traffic requires both a consideration for the primary path of traffic and the redundant path of traffic. MFN's MPLS core will need to maintain enough capacity in "each direction" to carry the full volume of VoIP traffic. In the event either path fails, the redundant path must assume the full load of traffic (which is addressed as a contract requirement for MFN core circuits). To dimension the MFN network's capacity to carry the full load of VoIP traffic, DMS will need to calculate the total call paths that are active in the network, accounting for the call paths in the current Hosted VoIP and SIP products as well as the new call paths that will be required for transition out of traditional local service access lines (Centrex, PRI, BRI, 1FB) and into Hosted VoIP and SIP. The calculation follows:

Total Call Paths x 80 Kilobits Per Call Path = Total Kilobits / 1000 = Total Megabits Required

This may require an upgrade to the current MFN core network to support DMS' full load of voice traffic in addition to data and video traffic. If the total bandwidth exceeds the current capability of MFN, DMS may need to procure extra capacity on the core. This cost is currently unknown but could be substantial for DMS.

4.14.5.5 Routing Hardware Considerations

AT&T currently maintains all routing hardware as the primary vendor for the MFN network. Prior to implementing a SIP Control Plane within MFN, DMS will need to complete a comprehensive due diligence process with the vendor to ensure that core and edge routing/switching equipment is capable of carrying the additional load of IP traffic and the specific type of VoIP traffic across the network at both the MFN core and customer edge levels. It is recommended that DMS negotiate this increase as part of the MFN Invitation to Negotiate that is currently under procurement.

4.14.5.6 Traditional Service Termination and Customer Legacy Interoperability Gateways

Some of DMS customers will require traditional termination of voice services, particularly in cases where they maintain premise-based PBX and Centrex equipment that is not replaceable in the near term. In these cases, migration to MFN's SIP Control Plane is still possible with the installation of a translation device, known as an Integrated Access Device, or IAD, to convert traditional Centrex, PRI, BRI and 1FB lines into VoIP for carriage across the MFN network. This process will require an IAD at each physical location where traditional premise-based equipment is installed.

In these cases, one or more IADs must be provisioned by DMS to support traditional termination into customers' premise-based equipment. Depending on how the EVS Contract is negotiated, either DMS will procure this equipment through a STEPS contract or directly through the vendor. In either case, an additional cost will be borne to DMS and the end customer. In most cases, the cost of this equipment ranges from \$500 - \$3,500 per unit.

4.14.5.7 SIP Proxy Integration

In order to transition larger DMS customers' voice services to MFN, premise-based equipment will be required to maintain quality of service for VoIP traffic. Although the MFN core is currently equipped for VoIP quality of service, in some cases, the Ethernet access line connected to the end customer may not extend these QoS capabilities. To ensure consistency, it is recommended that QoS be maintained at both the MFN and customer edge levels. In these cases, a SIP Proxy will be required to manage QoS for customer VoIP traffic. Additionally, SIP Proxies are more efficient at handling large amounts of SIP control and signaling functions including call control and authentication. In implementations for DMS' larger customers, SIP Proxies will generally be utilized to manage these functions. This results in an additional cost for customers migrating to DMS' EVS services. Depending on how the EVS Contract is negotiated, either DMS will procure this equipment through a STEPS contract or directly through the vendor. In either case, an additional cost will be borne to DMS and the end customer. In most cases, the cost of this equipment ranges from \$500 - \$5,000 per unit.

4.14.6 Total Estimated Cost over 10 Years

Under DMS' existing contracts, the agency is expected to spend \$378.65 million on voice services over the next 10 years. It is also expected to spend \$37.03 million on other direct and indirect costs to manage these voice services. Successful negotiation and implementation of an EVS Contract in FY 2015-16 could result in savings up to \$107.78 million on voice services and up to \$6.0 million on other direct and indirect costs. These savings could be realized if DMS effectively executes the EVS Contract, moving DMS' voice services to a data-based model that leverages MFN and renegotiates competitive rates for its usage-based voice

services. In total, savings up to \$111 million could be achieved over this 10-year period. This represents a potential savings to the agency of up to 27.37% for the period.

4.14.7 Risk Analysis

Transition by the State of Florida from existing multiple contracts for voice services to a single Enterprise Voice Services platform at its core involves transition from TDM-based access methods to IP based access methods. The telecommunications industry embarked on this transition some years ago, and will continue to make this transition regardless of whether or when the State of Florida decides to make that transition for its voice services. Standards, methods and practices for transition and conversion to an Enterprise Voice Services platform have been developed through experience by all large carriers who have accomplished this transition for other enterprise customers besides the State of Florida.

The most significant risks and required efforts are on the customer side of the transition. Each agency in concert with DMS will be required to evaluate the equipment and facilities at each site to assess current capabilities and requirements for transition to EVS. In some cases IADs will be required, but this has become standard equipment with associated known best practices. Furthermore, some additional training of agency IT staff may be required, but it is anticipated that this can be provided for since IP, VoIP and SIP are far from new and all IT professionals have become familiar with it. Furthermore, DMS must have the appropriate capabilities to support the transitions for its customers. Also, management of the MFN will become even more important.

4.14.8 Mitigation Plan

Mitigation of negative consequences of movement to an Enterprise Voice Services platform is provided by the following factors:

1. The industry in its entirety is moving to SIP and VoIP as the standard platform for voice services. Equipment and industry practices are now aligned with the use of SIP and VoIP to provide voice services.
2. Large agencies in Florida have already begun significant use of SIP and VoIP based technologies and services, and their experience can be leveraged in the transition.
3. The Migration to EVS is expected to occur over a fairly lengthy time period.
4. The Enterprise Voice Services platform would be established on an existing and operating network with which all users are familiar – the MFN network. Current users are familiar with the day to day operation of the MFN and MFN data access connections. New network connections are not required to be established, instead duplicative network access connections are removed in the transition.
5. The transition to EVS results in a significantly simpler technology environment.
6. Existing voice services contracts remain in place throughout the transition period as an alternative.
7. EVS has a much simpler rate and billing structure. Numerous billing codes and complexity will not cloud matters during the transition.
8. A single vendor solution is visualized, which provides a single point of contact and eliminates finger-pointing.

While there is risk associated with a transition to EVS of this magnitude, the risk is reduced given that the entire industry is moving in the same direction for enterprise customers.

4.14.9 Implementation Timeline

- May, 2016: EVS contract executed with vendor following procurement negotiations
 - Customers whose IT environment immediately enables taking advantage of new EVS service and pricing availability begin taking EVS services. Customers whose IT environment requires additional transition steps defer migration to EVS to subsequent years.
- May, 2016 to December, 2018:
 - DMS enhances internal capacity to support the selected Vendor in transition to EVS
 - DMS updates billing tables to accommodate simplified billing associated with EVS
 - Physical Infrastructure changes at each agency location to migrate to MFN for EVS
 - Identify lines to be migrated to SIP trunking/Hosted VoIP call paths
 - Determine capabilities of customer premise equipment to support SIP trunking/Hosted VoIP, and identify/specify any needed upgrades or additional equipment
 - Provide for “porting” of existing telephone numbers
 - Evaluate MFN bandwidth connections for required bandwidth increase to accommodate addition of EVS voice traffic
 - Set up routing and IP connectivity for VoIP CPE to communication with MFN SIP plane
 - Testing of MFN-based EVS to ensure minimal disruption
- July, 2017 to September, 2017: Evaluate the need to maintain small contracts for legacy voice services for small offices, determine whether to and how to procure such small contracts.
- December 31, 2018: Transition of AT&T Voice customers to EVS is complete, AT&T Centrex/Local Services Contract Expires
- July 1, 2019: Transition of CenturyLink and Verizon Voice customers to EVS is complete, Century Link and Verizon Centrex/Local Services Contracts Expire
- September 1, 2019: EarthLink Toll Free/800 Contract Expires
- EarthLink Long Distance contract available through November 1, 2021

4.15 Option 3 – Insource/Outsource (Fixed Flat Rate Model)

This option represents the evaluation of existing voice service offerings cost structures, trends, and projections for an outsourced procurement option for EVS using a fixed flat rate model. The fixed flat rate model builds on the same data-based voice services as in Option 2 and converts the usage-based voice services contracts that DMS manages with its vendors to a tiered billing model that establishes pre-defined rates for services based on specific tiers of volume. Option 3 is an emerging model similar in nature to the mobile industry that establishes prices for specific volumes of data or voice services. This model fits well in environments where large volumes of voice services are established and are constant or growing over a long-term contract period. These volumes provide vendors a level of certainty that volumes are stable or growing, which incentivizes them to offer a more competitive tiered pricing structure that becomes more competitive as volumes grow. This model is particularly sensitive to the potential growth forecasts for DMS’ customers, as additional cost savings will be realized by DMS with higher volumes of voice services. Therefore, information regarding usage by the large voice services agencies in addition to the Other State Agencies and Other Eligible Users becomes crucial in determining what volume tiers will be established by the vendor, the cost at each tier and the cost reductions above each subsequent tier.

Implementing the fixed flat rate model will follow the same process as Option 2 with DMS procuring, negotiating and executing an EVS Contract in FY 2015-16 using a single-vendor supplied solution. In nearly all respects, the

contracting process will remain unchanged from Option 2; however, DMS will establish that a new pricing and billing model will be required based on a tiered rate structure for DMS' products that currently utilize a usage-based pricing model. The products that will be re-priced under the fixed flat rate model include:

1. Long Distance Service
2. 800 Service
3. Conferencing Service
4. Hosted IVR

The fixed flat rate model will instruct the vendor to set specific volume tiers and flat fees for these volumes. Fees at each higher volume tier will be increasingly lower to provide cost reductions to DMS as it continues to place more volume with the vendor. During the procurement process, DMS will need to provide accurate volumes across each of its usage-based voice services that are expected over the 10-year period. Accuracy of this data is important because vendors will rely on this information to set pricing across each speed tier; inaccurate projections of volumes may result in DMS overpaying for these services if actual volumes are lower than expected. Therefore, DMS must diligently work with its customers to project accurate future volumes and provide a margin of error in these volumes to hedge against future volumes being lower than expected. Voice services that are not usage-based will continue to be contracted according to Option 2. These services include:

1. SIP trunking
2. Hosted VoIP
3. STEPS

4.15.1 Option Description & Analysis

4.15.1.1 Technology Requirements

Technology requirements for Option 3 are the same as those in Option 2. Option 3 will make use of MFN data transport to support the convergence of VoIP onto a single infrastructure. In doing so, DMS will be able to eliminate costly access lines across its customers, reducing the costs of this legacy infrastructure. The objectives of this convergence include:

1. Removing the cost of duplicative infrastructure – expensive legacy access lines can be disconnected once voice traffic is migrated to the Ethernet-based VoIP network;
2. Reducing the complexity of multiple connections – organizations do not need to manage separate voice and data connections, all traffic is transported across a single Ethernet-based connection; and
3. Simplifying upgrades and expansions – when organizations need to upgrade or expand their voice services, Ethernet-based VoIP connections allow them to do so easily, with little incremental cost and with minimal disruption.

The "SIP Control Plane" function presented in Option 2 will also be utilized in Option 3. MFN will be equipped and dimensioned to support DMS' volume of voice services, taking advantage

of MFN's MPLS quality of service features to support critical voice traffic from its customers. All local line equivalents will be migrated onto the SIP Control Plane via the new EVS Contract and the selected vendor will work with DMS to migrate legacy access lines to MFN data transport and VoIP and SIP products. Cost reductions will include:

1. Permanent cost elimination of all legacy access lines for DMS customers, including PRI, BRI, Centrex and 1FB;
2. Reduction in local and long distance costs from reduced usage for any inter-agency calls or calls that stay "on-net" within the MFN SIP Control Plane;
3. Reduction in toll-free service per minute charges through negotiation with a single vendor at rates that are lower than DMS' existing contract rates;
4. Reduction in conference calling per minute charges through negotiation with a single vendor at rates than are lower than DMS' existing contract rates; and
5. Reduction in current Hosted VoIP and SIP trunking costs by incorporating them into the new EVS Contract.

In addition to establishing the SIP Control Plane via the new EVS Contract, the contract will also specify a flat rate billing model for all usage-based services, including Long Distance, 800 Service, Conferencing and Hosted IVR. There are no specific technology requirements to consider as this is a billing model change; however, it will be important for DMS to maintain a thorough understanding of current and future volumes of services, described more fully in the "Billing" section that follows.

4.15.1.2 Billing

Billing considerations for Option 3 will require DMS to successfully negotiate established volume tiers and pricing levels for these tiers with the selected EVS Contract vendor. These tiers must be carefully determined, identifying the current volume and future volume for all services that utilized a usage-based (per minute) billing model today. In the fixed flat rate billing model, DMS and the vendor will negotiate volume tiers and price points based on current volume levels and future volume forecasts. To establish the greatest savings, DMS should project the highest reasonable volumes that are achievable. This will require DMS to work intimately with its customers to project these future volumes. This process should be undertaken with the large voice services agencies first to gain a thorough understanding of projected volumes for each of DMS' largest customers followed by an analysis of the remaining Other state agency customers and the Other Eligible Entity customers.

4.15.1.3 Customer Service

Customer service aspects of Option 3 will remain the same as those specified in Option 2.

4.15.1.4 Infrastructure Integration

Infrastructure integration aspects of Option 3 will remain the same as those specified in Option 2.

4.15.2 DMS Role

Apart from the billing function as described above, DMS' role will remain the same as specified in Option 2.

4.15.3 Direct & Indirect Cost

The flat fixed rate model will produce some additional potential cost reductions for DMS' direct and indirect costs in Option 3. Long Distance, 800 Service, Conferencing and Hosted IVR will no longer utilize per minute billing and will migrate to a tiered model. Hosted VoIP and SIP trunking will also experience some savings as the marginal cost for providers to procure additional lines is small. The tiered model will establish pricing tiers for DMS that are proportionally reduced with higher volumes. DMS will be billed by the vendor on a monthly basis based on the established tiers. The flat fixed rate model also generally requires minimum volume tiers that DMS will need to commit to certain rates for each product. These rates will be lower than the current per minute rate because DMS will commit to a specific amount of volume for a given voice service each month. Above the committed tier, pricing will continue to reduce with additional volume.

Direct cost savings for DMS using the fixed flat rate model is expected to provide an up to additional 10% cost savings across DMS' four usage-based voice services: Long Distance, 800 Service and Conferencing and 10% across the Hosted VoIP and SIP trunking products, in addition to the savings projected in Option 2. This reduction will be negotiated through the EVS Contract planned for execution in May of 2016 and will be realized across the 10-year period between FY -2016-17 and FY 2025-26.

The migration to a flat fixed rate model should also produce simplified management of DMS' usage-based voice services and a reduction of overall direct and indirect overhead costs for the agency. Moving to this model will eliminate all per-minute rating and billing across the Long Distance, 800 Service, Conferencing and Hosted IVR voice services and instead replace it with a volume-tiered system. Instead of managing hundreds of individual tariff codes across multiple vendors, DMS will manage a single vendor-supplied, tiered billing model that provides the total volume for each billing month per service, the tier that is achieved for that month and the flat fixed rate achieved for that tier. The process could simplify many internal processes for DMS, including customer management, ordering, troubleshooting, customer service, billing and finance and accounting. Option 3 could generate savings in direct and indirect costs up to an additional 10% from Option 2.

4.15.4 Overall Cost

Overall Cost for Option 3 is expected to be \$269.56 million over the 10-year period from execution of the EVS Contract in May, 2016 through FY 2025-26.

4.15.5 Potential Savings

Option 3 will result in similar savings in local access costs as achieved in Option 2. These savings are expected to be up to 30%, reducing DMS' local access costs from a total spend of \$85.32 million to \$59.72 million over the period FY 2016-17 and FY 2025-26.

1. A potential reduction in the total long distance volume utilized by migrating customers' voice services to MFN. This will potentially reduce the amount of origination and termination charges levied by carriers through utilization of MFN as a single "local" exchange that incurs less long distance charges. By migrating to EVS services, all agencies will have the benefit of local free calling between any other offices connected to MFN. DMS can expect potential per minute cost reductions by in the upcoming 2016 EVS Contract and negotiate periodic rate reductions throughout the term of the ten-year contract. It is expected that DMS can negotiate a 50% reduction by negotiating the new EVS Contract to a flat

fixed rate model with established volume tiers and price points. Over the 10-year period beginning in FY 2016-17 and assuming no volume changes, DMS is expected to spend approximately \$29.08 million on long distance services. Renegotiating these rates through a competitive, single-vendor EVS Contract using a flat fixed rate model could save DMS up to \$14.54 million over this period.

2. A reduction in 800 Service costs through negotiating an EVS Contract with a single vendor who receives the entire volume of DMS' voice business and implements a flat fixed rate model. Separate rates for switched and dedicated would no longer exist, instead DMS would receive a single rate for 800 Service at a tiered cost structure based on a single consolidated EVS Contract to a single vendor in FY 2015-16. DMS could realize an up to 50% cost reduction to its current per minute rates for switched and dedicated Long Distance with the new EVS Contract in 2016. DMS is projected to spend \$81.70 million on 800 services over the next 10 years and with successful negotiation of the EVS Contract in 2016 at these projected discounts, DMS can potentially save up to \$40.85 million over this period.
3. A reduction in Conferencing costs through negotiating an EVS Contract with a single vendor who receives the entire volume of DMS' voice business and implements a flat fixed rate model. DMS should realize up to 50% cost reduction in its Conferencing contract with the new EVS Contract in FY 2015-16. Maintaining the current contract, DMS is projected to spend \$6.8 million on conferencing services over the next ten years. Under the new EVS Contract, DMS is projected to save up to \$3.4 million, with cost reductions beginning shortly after execution of the new EVS Contract in 2016.
4. A reduction in the direct and indirect costs for DMS' internal operations to manage the portfolio of voice services. Consolidation into a single-vendor EVS Contract using a flat fixed rate model is expected to create operational efficiencies across many of DMS' functions: general contract management, billing, customer service, accounting and finance. DMS is projected to save 25% to 30% on these direct and indirect costs as a result of moving to a single-vendor EVS Contract. This saving may be achieved over the transition period on phase approach as appropriate.

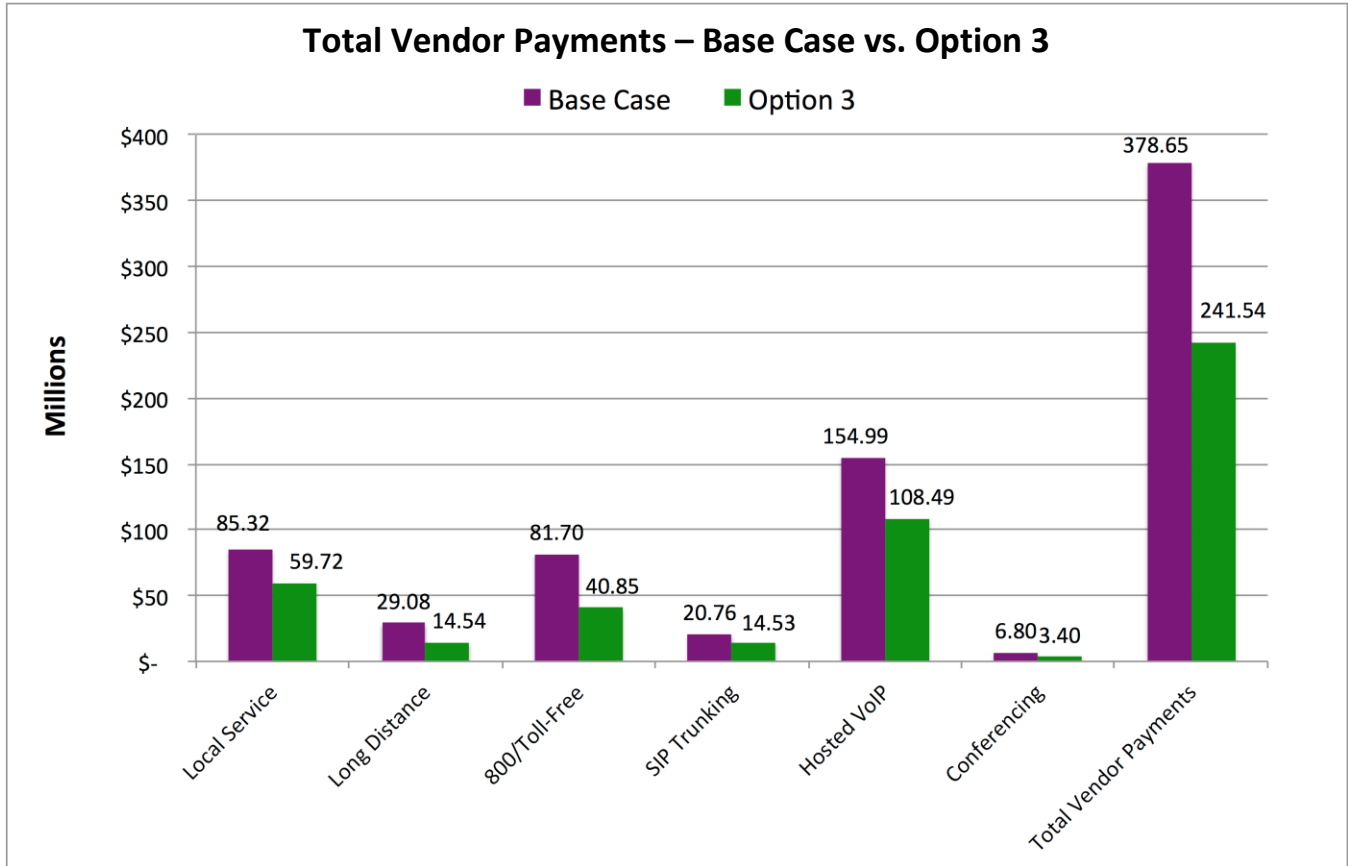


Figure 21 - Option 3 Total Savings per Service

4.15.6 Transition Costs/Considerations

4.15.6.1 Bandwidth Considerations

Migration of voice services to MFN will require a dimensioning of both the MFN core network, as discussed in the following section and access lines that connect to each DMS customer. Although VoIP traffic generally requires a small amount of bandwidth, DMS and the agency will need to survey each customer site to determine the current bandwidth of the data access line that connects that site to MFN. Notably, little to no upgrade of MFN capacity – thus no increased cost – was required in DCF’s transition to SIP-based VoIP provisioned over MFN connections, which has been largely accomplished. As a general rule, a VoIP call consumes approximately 80 kilobits of bandwidth utilizing a high-quality codec such as G.703. Some common bandwidth requirements DMS will need to consider for the transition of customers with existing access lines include:

Customers with Primary Rate Interface – 23 voice channels, 1 signaling channel

- VoIP Conversion = 24 channels x 80 kilobits per channel = 1.92 megabits of bandwidth required for VoIP services.
- A customer with a PRI access line will require an additional 1.92 megabits of bandwidth on its existing MFN access line to support VoIP traffic.

Customers with Centrex Service (Single Line) – 1 voice channel

- VoIP Conversion = 1 channel x 80 kilobits per channel = 80 kilobits of bandwidth required for VoIP services.
- A customer with a Centrex access line will require an additional 80 kilobits of bandwidth on its existing MFN access to support VoIP traffic.

For DMS customers to transition into using MFN for their voice services, incremental monthly costs may be incurred from the increases in bandwidth necessary to support the additional load of traffic. These costs may be significant in cases where low-speed access lines are utilized for data connections into MFN. For example, a customer utilizing a T1 circuit connected to MFN maintains 1.544 megabits of usable bandwidth. If this customer maintains 10 traditional phone lines, conversion of this customer's voice services to EVS using VoIP will require 800 kilobits of bandwidth on that T1, or about 50% of the total capacity. If the current data usage on the T1 is high, the customer may be forced to upgrade to an additional T1 for carriage of 800 kilobits of VoIP traffic. In these cases, it may be less than optimal for a customer to utilize an EVS solution, however these represent a minority of cases. In many cases, DMS customers utilize higher bandwidth lines that can accommodate an increase in bandwidth, either without an upgrade consideration or with an incremental upgrade. In cases where an incremental cost is required, this upgrade will normally be achieved by increasing the bandwidth on the current service by a certain number of megabits. DMS should evaluate customer utilization on MFN data services to determine the feasibility of migrating them to an EVS solution.

4.15.6.2 Core Transport Considerations

Core transport within the MFN network is also a key consideration that DMS will need to factor into the transition plan in supporting a SIP Control Plane through an EVS Contract. All current voice traffic for DMS customers should be migrated to VoIP and carried across the MFN network. DMS carries a significant amount of access lines. As these are migrated to MFN access connections, bandwidth will increase on the MFN network. Dimensioning of the MFN network to carry this additional traffic requires both a consideration for the primary path of traffic and the redundant path of traffic. MFN's MPLS core will need to maintain enough capacity in "each direction" to carry the full volume of VoIP traffic. In the event either path fails, the redundant path must assume the full load of traffic. To dimension the MFN network's capacity to carry the full load of VoIP traffic, DMS will need to calculate the total call paths that are active in the network, accounting for the call paths in the current Hosted VoIP and SIP products as well as the new call paths that will be required for transition out of traditional local service access lines (Centrex, PRI, BRI, 1FB) and into Hosted VoIP and SIP. The calculation follows:

$$\text{Total Call Paths} \times 80 \text{ Kilobits Per Call Path} = \text{Total Kilobits} / 1000 = \text{Total Megabits Required}$$

This may require an upgrade to the current MFN core network to support DMS' full load of voice traffic. If the total bandwidth exceeds the current capability of MFN, DMS may need to procure extra capacity on the core. This cost is currently unknown but could be substantial for DMS.

4.15.6.3 Routing Hardware Considerations

AT&T currently maintains all routing hardware as the primary vendor for the MFN network. Prior to implementing a SIP Control Plane within MFN, DMS will need to complete a comprehensive due diligence process with the vendor to ensure that core and edge routing/switching equipment is capable of carrying the additional load of IP traffic and the specific type of VoIP traffic across the network. It is recommended that DMS negotiate this increase as part of the MFN Invitation to Negotiate that is currently under procurement.

4.15.6.4 Traditional Service Termination and Customer Legacy Interoperability Gateway

As in Option 2, some of DMS' customers will require traditional termination of voice services, particularly in cases where they maintain premise-based PBX and Centrex equipment that is not replaceable in the near term. In these cases, migration to MFN's SIP Control Plane is still possible with the installation of a translation device, known as an Integrated Access Device, or IAD, to convert traditional Centrex, PRI, BRI and 1FB lines into VoIP for carriage across the MFN network. This process will require an IAD at each physical location where traditional premise-based equipment is installed.

In these cases, one or more IADs must be provisioned by DMS to support traditional termination into customers' premise-based equipment. Depending on how the EVS Contract is negotiated, either DMS will procure this equipment through a STEPS contract or directly through the vendor. In either case, an additional cost will be borne to DMS and the end customer. In most cases, the cost of this equipment ranges from \$500 - \$3,500 per unit.

4.15.6.5 SIP Proxy Integration

In order to transition larger DMS customer's voice services to MFN, premise-based equipment will be required to maintain quality of service for VoIP traffic. Although the MFN core is currently equipped for VoIP quality of service, in some cases, the Ethernet access line connected to the end customer may not extend these QoS capabilities. In these cases, a SIP Proxy will be required to manage QoS for customer VoIP traffic. Additionally, SIP Proxies are more efficient at handling large amounts of SIP control and signaling functions including call control and authentication. In implementations for DMS' larger customers, SIP Proxies will generally be utilized to manage these functions. This results in an additional cost for customers migrating to DMS' EVS services. Depending on how the EVS Contract is negotiated, either DMS will procure this equipment through a STEPS contract or directly through the vendor. In either case, an additional cost will be borne to DMS and the end customer. In most cases, the cost of this equipment ranges from \$500 - \$5,000 per unit.

4.15.7 Total Estimated Cost over 10 Years

Under DMS' existing contracts, the agency is expected to spend \$378.65 million on voice services over the next 10 years. It is also expected to spend \$37.03 million on other direct and indirect costs to manage these voice services. Successful negotiation and implementation of an EVS Contract in May of 2016 could result in savings up to \$137.11 million on voice services and up to \$9.01 million on other direct and indirect costs. These savings could be realized if DMS effectively executes the EVS Contract, moving DMS' voice services to a data-based model that leverages MFN and renegotiates its current usage based contracts into flat fixed

rate products. In total, savings up to \$146.12 million could be achieved over this 10-year period. This represents a potential savings to the agency of up to 35.15% for the period.

4.15.8 Risk Analysis

Transition by the State of Florida from existing multiple contracts for voice services to a single Enterprise Voice Services platform at its core involves transition from TDM-based access methods to IP based access methods. The telecommunications industry has embarked on this transition some years ago, and will continue to make this transition regardless of whether or when the State of Florida decides to make that transition for its voice services. Standards, methods and practices for transition and conversion to an Enterprise Voice Services platform have been developed through experience by all large carriers who have accomplished this transition for other enterprise customers besides the State of Florida.

The most significant risks and required efforts are on the customer side of the transition. Each agency in concert with DMS will be required to evaluate the equipment and facilities at each site to assess current capabilities, and requirements for transition to EVS. In some cases IADs will be required, but this has become standard equipment with associated known best practices. Furthermore, some additional training of agency IT staff may be required but it is anticipated that this can be provided for since IP, VoIP and SIP are far from new and all IT professionals have become familiar with it. Furthermore, DMS must have the appropriate capabilities to support the transitions for its customers. Also, management of the MFN will become even more important.

For Option 3, there is a risk of incorrectly specifying or negotiating usage tiers and break-points to achieve the maximum level of savings.

4.15.9 Mitigation Plan

Mitigation of negative consequences of movement to an Enterprise Voice Services platform is provided by the following factors:

1. The industry in its entirety is moving to SIP and VoIP as the standard platform for voice services. Equipment and industry practices are now aligned with the use of SIP and VoIP to provide voice services.
2. Large agencies in Florida have already begun significant use of SIP and VoIP based technologies and services, and their experience can be leveraged in the transition.
3. The Migration to EVS is expected to occur over a fairly lengthy time period.
4. The Enterprise Voice Services platform would be established on an existing and operating network with which all users are familiar – the MFN network. Current users are familiar with the day to day operation of the MFN and MFN data access connections. New network connections are not required to be established, instead duplicative network access connections are removed in the transition.
5. The transition to EVS results in a significantly simpler technology environment.
6. Existing voice services contracts remain in place throughout the transition period as an alternative.
7. EVS has a much simpler rate and billing structure. Numerous billing codes and complexity will not cloud matters during the transition.
8. A single vendor solution is visualized, which provides a single point of contact and eliminates finger-pointing.

While there is risk associated with a transition of this magnitude these factors in an environment where the entire industry is moving the same direction for enterprise customers serves to strongly mitigate against any long-lasting negative impacts associated with a move to the Enterprise Voice Services platform.

4.15.10 Implementation Timeline

Implementation Timeline

- May, 2016: EVS contract executed with vendor following procurement negotiations
 - Customers whose IT environment immediately enables taking advantage of new EVS service and pricing availability begin taking EVS services. Customers whose IT environment requires additional transition steps defer migration to EVS to subsequent years.
- May, 2016 to December, 2018:
 - DMS enhances internal capacity to support the selected Vendor in transition to EVS
 - DMS updates billing tables to accommodate simplified billing associated with EVS
 - Physical Infrastructure changes at each agency location to migrate to MFN for EVS
 - Identify lines to be migrated to SIP trunking/Hosted VoIP call paths
 - Determine capabilities of customer premise equipment to support SIP trunking/Hosted VoIP, and identify/specify any needed upgrades or additional equipment
 - Provide for “porting” of existing telephone numbers
 - Evaluate MFN bandwidth connections for required bandwidth increase to accommodate addition of EVS voice traffic
 - Set up routing and IP connectivity for VoIP CPE to communication with MFN SIP plane
 - Testing of MFN-based EVS to ensure minimal disruption
- July, 2017 – September, 2017: evaluate the need to maintain small contracts for legacy voice services for small offices, determine whether to and how to procure such small contracts.
- December 31, 2018: Transition of AT&T Voice customers to EVS is complete, AT&T Centrex/Local Services Contract Expires
- July 1, 2019: Transition of CenturyLink and Verizon Voice customers to EVS is complete, Century Link and Verizon Centrex/Local Services Contracts Expire
- September 1, 2019: EarthLink Toll Free/800 Contract Expires
- EarthLink Long Distance contract available through November 1, 2021

5. RECOMMENDED OPTION & DETAILED DISCUSSION

The recommended option for this portion of the business case is in accordance with Section 287.0571(4), F.S., which outlines the requirements for contracting with private sector vendors as they can effectively and efficiently provide services and reduce the cost of government. This statute requires analysis of feasibility, cost-effectiveness, and efficiency before proceeding with outsourcing of services.

A detailed analysis for this decision provides the following key findings:

1. An analysis of the telecommunications market concludes that the voice services being provided today are following the correct technological path in terms of capability and service delivery utilizing a VoIP/SIP service delivery topology;
2. DMS should continue additional migration to a fully SIP enabled environment which will yield improved cost savings and future unified telecommunications capabilities across the service areas for the State of Florida;
3. Continued integration with MyFloridaNet and the planned ubiquitous SIP Control Plane will enable the state to leverage reduced cost through a migration to voice services delivered over lower cost MFN data access circuit augmentation;
4. An EVS platform enables a connected enterprise characterized by access to people and information virtually anytime and anywhere for faster communication and greater collaboration using a variety of devices or mediums;
5. The voice telecommunications industry has evolved to the point where a single vendor can efficiently supply the entire range of DMS voice services and do so at a more competitive price point than DMS is currently paying in its existing multi-contract environment;
6. With the evolution of an integrated EVS solution, careful consideration should be given to ensure customer service resources within DMS work closely with vendor staff and state agencies to extend services and utilization. The integrated capabilities of EVS from the perspective of increased adoption and migration to new technologies present a significant opportunity to provide improved cost savings;
7. The option to extend competitive outsourcing service layers, (Local, 800, LD, etc.), to multiple vendors will potentially increase the cost structures due to fragmentation of bulk purchase buying power for services under a prime vendor;
8. The option to segment service layers for an EVS solution to multiple vendors, as opposed to a single vendor will present SLA challenges for DMS in support of its customer base;
9. Improved customer awareness of the capabilities of the service offering portfolio will extend the adoption of EVS to a broader customer base;
10. Improved pricing structures to DMS customers will provide the opportunity for growth of EVS as demand for evolving unified voice service layers; and
11. The assumption of growth of EVS services, will directly result in an increase for bandwidth demand at the SIP Control Plane and MFN data transport connections to agencies.
12. The accuracy and support for the billing process of SUNCOM customers is very important to the agencies.

5.1 Summary of the Three Options Considered In This Business Case

Support services for Florida's telecommunications voice services have been outsourced to various vendors through the evolution of the telecommunication marketplace via various contract procurements since 1975. Since 1975 there have been numerous iterations of telecommunication complexities and vendor combinations in support of voice service. The current service layers are provided today by AT&T, Verizon, CenturyLink, EarthLink, Citrix Conferencing, BT Conferencing, Cisco, Avaya, and Unify (formerly Siemens).

None of the options considered in this business case contemplate that any services or activities currently being performed by DMS resources will be outsourced to an outside vendor. However, option 2 stipulates replacing vendor services with DMS resources as appropriate, based on the business model employed, for a combination of both insourced and outsourced service operations.

The three options are:

1. Option 1 - Insourcing of Enterprise Voice Services and functions. This is a logical option to consider since the business case is required for large outsourcing procurements and should therefore consider whether "insourcing" would be a less costly option to the State of Florida. Insourcing would require the assets, capabilities and staff to construct and operate a statewide Enterprise Voice Services internet-based communications platform. This would require the State of Florida to become one of the very largest telecommunications operators in the state, and devote the corresponding resources to develop and support a large telecommunications operation. In essence, the State of Florida would become a "CLEC" (Competitive Local Exchange Carrier). Outsourcing of existing service operations of voice services as they exist today with additional integration of services as appropriate would be required based upon ability for the state to execute a given service layer appropriately.
2. Option 2 - Combination Insourcing and Outsourcing (Usage Based IP Model) whereby DMS outsources the significant telecommunications functions and transitions them to a usage-based IP data model for contract cost and user pricing; and,
3. Option 3 - Combination of Insourcing and Outsourcing (Fixed Flat Rate Model) whereby DMS outsources the significant telecommunications functions and transitions them to a flat-rate IP data model for contract cost and user pricing.

Each of these three options has been evaluated with regard to the following attributes as supported by Section 4 - Options and Cost Benefit Analysis:

- Estimated or measured direct and indirect costs for labor, hardware, and software;
- Qualitative and quantitative benefits and advantages;
- Risks, disadvantages, pros and cons;
- Assumptions and constraints; and
- The schedule and sequence of key activities or events.

5.2 Summary Comparison of the Three Options

The implementation of the choice between the three options cannot begin until the proposed solution has been approved and the required funds have been authorized in the Appropriation for the relevant fiscal year(s). Appropriated funds are available at the start of the following fiscal year calendar (July 1-June 30) after state budget approval.

5.2.1 Option 1 – Insource

The Department of Management Services would request the establishment and funding for state FTE positions and physical assets to support telecommunications operations as appropriate. Upon approval, DMS would establish an internal voice support services organization composed of these full-time state employees based upon the choice of service layers to insource and outsource. These positions would be incorporated into the department’s Legislative Budget Request (LBR) for funding each fiscal year. The level and appropriateness of outsourcing will be determined by what services are deemed attainable through state resources.

5.2.2 Option 2 – Combination Insourcing and Outsourcing (Usage Based IP Model)

For this option, DMS would release an ITN to qualified vendors and negotiate a new contract for the identified EVS service features based upon existing voice service portfolio with consideration for emerging technology/capabilities. This option is predicated on maintaining a per minute usage cost/billing structure delivered over a data centric infrastructure. Support for legacy voice service delivery must be maintained for DMS customers until such time as adequate migration or transition to IP based voice services can be accommodated.

5.2.3 Option 3 – Combination Insourcing and Outsourcing (Fixed Flat Rate Model)

For this option, DMS would release an ITN to qualified vendors and negotiate a new contract for the identified EVS service features based upon existing voice service portfolio with consideration for emerging technology/capabilities. This option is predicated on the evaluation of existing voice service offerings, cost structures, trends, and projections for an outsourced procurement option for EVS using a fixed flat rate model. The fixed flat rate model builds on the same data-based voice services as in Option 2 and converts the usage-based voice services contracts that DMS manages with its vendors to a tiered billing model that establishes pre-defined rates for services based on specific tiers of volume. Support for legacy voice service delivery must be maintained for DMS customers until such time as adequate migration or transition to IP based voice services can be accommodated.

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Note: Option 1 is not included in this comparison table intentionally as it is has been deemed not cost effective or feasible for implementation. See Section 4.4.1 for more details.

EVS Options	Estimated Cost Annually	Findings
<p>Option 2- Insource/Outsource, Usage Based IP- Model</p>	<ul style="list-style-type: none"> ▪ 30% on traditional access lines and 20% on SIP trunking and Hosted VoIP services. ▪ 40% on its usage-based products, including Switched Long Distance, Dedicated Long Distance, Toll-Free and Conferencing. ▪ Cost savings begin in FY 2016-17. 	<ul style="list-style-type: none"> ▪ Most feasible, lowest risk. ▪ Leverages MFN to reduce access costs. ▪ Consistent with current industry direction. ▪ Consolidates “buying power” of DMS to reduce costs in a single-vendor solution. ▪ FCC changes to Access Charge framework promotes reduced costs of usage. ▪ Minimizes additional operational costs for DMS, and promotes reduced billing costs. ▪ Potential high transition costs if new vendor is selected and key milestones are not met.
<p>Option 3 – Insource/Outsource, Fixed Flat-Rate Model</p>	<ul style="list-style-type: none"> ▪ 30% on traditional access lines and 30% on SIP trunking and Hosted VoIP services. ▪ 50% on its usage-based products, including Switched Long Distance, Dedicated Long Distance, Toll-Free and Conferencing. ▪ Cost savings begin in FY 2016-17. 	<ul style="list-style-type: none"> ▪ Highest risk and highest execution complexity in the near term. ▪ Leverages MFN to reduce access cost. ▪ FCC changes to Access Charge framework promotes reduced costs of usage. ▪ Industry may not be fully prepared to embrace model. ▪ Execution risk is high in implementing a flat rate solution. ▪ Potential high transition costs if key milestones are not met.

Figure 22 - Options Summary Comparison

Figure 15 illustrates the total projected costs of the current state, compared to cost estimates for Options 2 and 3 over the period FY 2016-17 through FY 2025-26. Total costs include all vendor payments, DMS direct and indirect costs, and any additional capital costs resulting from the implementation of Options 2 or 3. Figure X assumes that an EVS Contract is executed in May of 2016, which allows for a full 10-years of analysis between FY 2016-17 and FY 2025-26

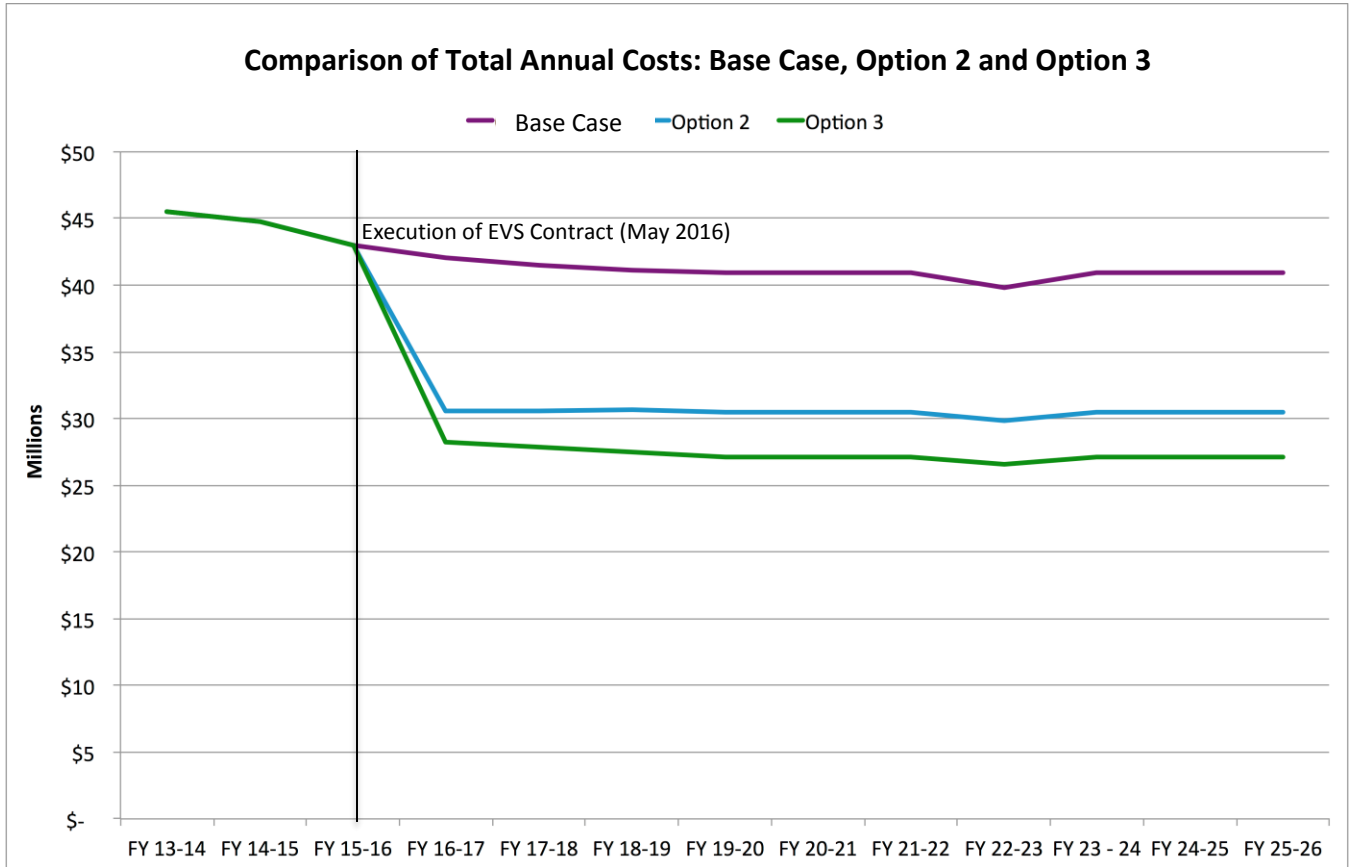


Figure 23 -Comparison of Total Annual Costs between the Current state, Option 2 and Option 3

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5.3 Recommendation

It is recommended that DMS issue a combination insourced and outsourced competitive procurement as an Invitation to Negotiate (ITN) for a newly structured enterprise voice services portfolio and support contract as outlined by Option 2. This procurement should identify and incorporate a SIP enabled VoIP delivery methodology with integration to MFN for data connection to state agencies.

Consideration should be given to this procurement being limited to a single vendor for bulk services to increase the state's purchasing power.

Option 2 – Combination Insource and Outsource, provides the least amount of risk to the state while allowing competitive market forces to lower total cost of service delivery. This option leverages DMS' existing staffing and service capabilities along with savings through driving lower cost with bulk buying power. Savings and cost reductions in Option 2 will be driven by DMS' negotiations in the ITN with the selected prime vendor and additional subsequent improved cost structures for the upcoming MFN-2 implementation. It should be noted that this business case does not fully integrate the reduced data transport cost at this time due to MFN-2 being not yet implemented.

5.3.1 Business Case Recommendations Summary

The following section is provided as a single summary of all recommendations from throughout the business case. They represent key points that should be reviewed and considered as DMS moves forward with its chosen path for EVS.

1. It is recommended that EVS be based upon Session Initiation Protocol (SIP) for VoIP implementations;
2. Support for legacy telephony solutions should be maintained with plans to migrate to VoIP solutions as appropriate given budgetary constraints or as invested premise-based solutions reach end of life status;
3. Review of Florida Statue 282.0041(24) provides the ability for DMS to provide telecommunications services. Today that is limited to delivery of service to a single building or contiguous building complex. With the implementation of an EVS VoIP solution, the ability to extend services down to the physical handset or mobile device needs examination to ensure QoS (Quality of Service) is maintained along with E911 registration information;
4. The STEPS contract is set to expire March 2, 2015. Given that the desire to procure equipment is driven by an agency's expressed choice of physical hardware, it is not recommended that DMS eliminate this ability for agencies to procure telephony hardware and software outside of an EVS solution. It is recommended that DMS move this option to a standard equipment procurement vehicle at the state DMS level outside of the Division of Telecommunications.
5. It is recommended that the STEPS replacement contract have established boundaries for supported features that create the minimum acceptable capabilities requirement for integration into EVS established by the Division of Telecommunications;
6. Utilization of cloud-based service delivery should be incorporated into the EVS portfolio to help reduce total cost of ownership over time for embedded hardware/software based solutions at the state agency level;

7. It is recommended that the state utilize dedicated facilities for interconnection to the MFN SIP control plane and dedicated facilities for VoIP service feature implementation from the service provider to ensure high levels of service delivery and QoS;
8. Careful consideration should be made for emerging interconnection capabilities that fall outside of dedicated facilities. E.g., Internet-based voice via secure Virtual Private Network (VPN) connections at remote office/mobile locations;
9. Participation in E911 is not mandatory and end users may opt-out of the service at the device level. It is recommended that a review of this be done to determine the proper policy constraints to maintain proper E911 service information;
10. With the advent of mobile devices connecting via VoIP, it is recommended that GPS location services always be enabled for improved 911 support;
11. To ensure accurate 911 information is maintained for a state EVS, it is recommended that the vendor solution provide robust automation that clearly identifies the VoIP device regardless of movement within the physical topology of the network;
12. For multi-tenant service delivery options, careful consideration should be given to the configuration and integration of premise-based equipment to ensure management is sustainable. The segmentation of the service delivery must be managed end-to-end within the delivery configuration to ensure proper network administration is maintained. Further, all back-office functions (customer service requests and invoicing for service layers) must be properly partitioned and identifiable by the serving vendor for concise administration.
13. DMS should specifically procure a managed services environment for its EVS services with the selected vendor;
14. Given that a migration to VoIP via a SIP Control Plane will yield an increase in services over MFN, it is recommended that DMS negotiate this increase as part of the MFN-2 Invitation to Negotiate that is currently under procurement;
15. To ensure consistency, it is recommended that QoS be maintained at both the MFN and customer edge levels;
16. The overarching theme of the procurement should be to continue moving to IP-enabled voice services since communications requirements are becoming vastly more bandwidth intensive in terms of service capacities. E.g., Convergence of voice with data centric services like web conferencing with full video and application level integration/sharing capabilities;
17. DMS should continue to utilize MPLS as its core routing technology over a dedicated infrastructure to ensure VoIP SIP services are delivered with high reliability and call qualify;
18. The utilization of dedicated services should be established based on SLA requirements driven by customer needs. The use of shared services should be reviewed and used where SLA requirements are established at the best effort levels where applicable based on customer needs;
19. DMS should seek to negotiate flat rate pricing for these services in the future ITN;
20. The EVS procurement should have the goal of full availability of SIP Enabled VoIP services and supporting capacity via MFN for agencies for improved cost, support and feature capabilities;
21. The evolution of EVS will require careful consideration of service delivery to the edge of DMS' customer's network where MFN services are delivered in that QoS requires additional LAN based evaluation to ensure services are maintained at appropriate levels.
22. It is recommended that a business case be developed to evaluate and make recommendations for continued delivery for call center services that integrate into EVS. A large portion of voice services, in

terms of volume of calls, are directly tied to this service layer. It would be prudent to fully explore all options for improvement and potential cost reductions.

- 23. DMS should consider releasing a Request for Information (RFI) to allow the voice services vendor community to provide responses that address operations, technical, and unified capabilities based upon key desires of the state and items identified in this business case.
- 24. DMS should ensure that adequate state resources are maintained and/or supplemented in the execution of EVS to ensure that a smooth transition of service layers is accomplished for DMS customers. These resources should be focused on working with the service provider throughout the process.

5.3.2 Suggested Procurement Evaluation Criteria

The following are recommendations for consideration as the evaluation criteria that could be used in the development of the ITN. This information is intended to provide insight into options that may strengthen DMS’ ability to choose the appropriate vendor in the best interest of the state.

Evaluation Criteria	Description	Recommended Percentage
Technical Solution	Technical solution meets or exceeds the technical specification of the procurement	33 percent
Corporate Viability & Abilities	Fiscal strength of corporation and historical ability to deliver services as prescribed in the procurement	5 percent
Terms and Conditions	Acceptance of state Terms and Conditions	5 percent
Pricing	Pricing model across all service requirements	37 percent
Support Services	Ability to provide support services for administrative and technical aspects of the procurement	5 percent
Service Level Agreement	Service level agreements meet or exceed both technical and administrative requirements of the procurement	15 percent

Figure 24 - EVS Evaluation Criteria

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6 STATE BUSINESS PROCESS & POLICIES

Section 287.0571 (4)(i), F.S. A description of differences among current state agency policies and processes and, as appropriate, a discussion of options for or a plan to standardize, consolidate, or revise current policies and processes, if any, to reduce the customization of any proposed solution that would otherwise be required.

In the context of the SUNCOM service portfolio, there are no impacts to existing state agency processes or policies that are not currently being managed effectively by DMS. The intended service delivery maintains a current steady state of services to all SUNCOM customers and as such the new EVS procurement does not present any additional burden on the state.

It is anticipated that efficiencies will be gained through continued migration of services to an EVS portfolio with respect to effective processes and policies. The standards, technology, and scope of services are defined by the Division of Telecommunications today, which should be continue for definition of EVS.

Review of Florida Statue 282.0041(24) provides the ability for DMS to provide telecommunications services. Today that is limited to delivery of service to a single building or contiguous building complex. With the implementation of an EVS solution, the ability to extend services down to the physical handset or mobile device needs examination to ensure QoS is maintained along with E911 registration information beyond traditional handoff points at the agency level.

7 PERFORMANCE METRICS REVIEW

Section 287.0571 (4) (j), F.S. A description of the specific performance standards that must, at a minimum, be met to ensure adequate performance.

The current contracts contains for voice services contain various definitions for Service Level Agreement (SLA). These metrics are somewhat inconsistent in execution due to the segmentation of the services over numerous contracts. Within the context of EVS, the following performance metrics/SLA should be considered:

1. Understand and measure call quality components. The following should be used to assess VoIP call quality: jitter, MOS, R-Factor, gap density, burst density, QoS prioritization, and compression techniques.
2. Implement QoS prioritization.
3. Conduct a site survey to review current WAN bandwidth levels, traffic flows, and existing switches for bottlenecks and choke points. Then, identify or determine specific needs through testing and modeling.
4. Deploy analysis tools strategically for maximum visibility. Placing network analysis consoles and probes on your network requires a clear understanding of VoIP traffic patterns.
5. Implement VLANs to isolate and monitor VoIP issues. Organize your VoIP traffic by VLAN user groups.
6. Compare jitter to overall network bandwidth utilization to understand response time.
7. Set up proactive monitoring of VoIP activity.
8. Automate problem resolution through trouble ticket escalation processes and/or threshold breakpoints.
9. Establish baseline network traffic metrics to allow for automation of impending trouble potential.
10. Establish service layer availability at a 99.9 percent minimum.

11. Establish proactive review of all metrics with follow up to a monthly vendor meeting for discussion and resolution of issues found.
12. SLA's should be managed to ensure DMS customers are receiving the highest levels of service possible with accountability for service offering.

8 PROJECTED TIMEFRAME

Section 287.0571 (4)(k), F.S.) The projected timeframe for key events from the beginning of the procurement process through the expiration of a contract.

The EVS procurement to contract expiration timeline is suggested to be established for 10 years, with a renewal/evaluation interval at year five, at which time new negotiations for service features and reduced pricing should take place. This contract should be put in place prior to the expiration of existing voice services contracts to allow for a phase migration of services to the new EVS portfolio of service.

Having this contract in place would allow sufficient time to sunset existing voice services contracts while supporting legacy service layers as appropriate. Additionally, this allows sufficient time to realize cost savings and optimization of telecommunication advancements as the new layers are established. It is estimated that once the Invitation to Negotiate (ITN) responses are received, DMS will need an estimated six (6) to nine (9) months for completion of the ITN documents, response evaluation, negotiations, and contract execution.

Given the number of contracts under consideration, in addition to the six to nine months for completion of the procurement process, the timeline suggested in this business case includes an additional 24-48 months for transition based on the sunset of existing projects and proposed plan that should be established by the EVS vendor.

Key Events:

- Obtain legislative direction and finalize ITN;
- Complete ITN solicitation and DP100;
- Release ITN to public;
- Complete procurement process and develop recommendation to award. Once the negotiations are concluded, DMS can complete a fiscal impact analysis and provide an update in time for the 2016 legislative process;
- Post Intent to Award;
- Prepare and execute contract. If there is a protest, the migration will not be completed on time resulting in a delay in the project;
- Establish project plans that encompass the service layers by agency to the satisfaction of both DMS and DMS customers;
- Migration of services over a 24-48-month migration period;
- If necessary, request contract extensions to enable smooth transition of service layers;
- Migration complete;
- Steady state of services; post migration;
- Process service requests as required; daily;
- Evaluate renewal and negotiate pricing reduction as possible;
- Steady state of services; post renewal;

- Process service requests as required; daily; and
- End of contract period.

9 PUBLIC RECORDS COMPLIANCE

Section 287.0571 (4) (l), F.S. A plan to ensure compliance with the public records law.

The procurement and a subsequent awarded contract should state that any and all records produced are subject to Ch. 119, Florida Statutes. The service provider shall allow DMS access to all documents, papers, letters, or other material subject to Ch. 119, Florida Statutes for which public record requests are made or received by the department.

10 CONTINGENCY PLAN

Section 287.0571 (4) (m), F.S. A specific and feasible contingency plan addressing contractor nonperformance and a description of the tasks involved in and costs required for its implementation.

The procurement of EVS should include language drafted in consultation with DMS legal counsel and DMS procurement staff. The contract should outline a plan, subject to negotiation process, to address contractor non-performance.

The procurement should maintain provisions to address the termination for cause in the event of non-performance by the Contractor and remedies for non-performance consistent with those available in rule 60A-1.006, F.A.C.

DMS should include provisions in the new contract for financial consequences in the event the service provider does not meet established and measured performance expectations. The provisions should provide incentive for a Contractor to cure any problems with performance before an event of default occurs.

Suggested Remedies for DMS for Default and Obligations upon Termination:

- Terminate this Contract by providing the service provider with appropriate written notice of the effective date of termination;
- Seek Equitable Relief and/or Institute legal proceedings against the Contractor to collect payment of any money owed including, but not limited to re-procurement costs, system replacement costs, and liquidated damages; and initiate proceedings to have Service Provider placed on the Suspended Vendor list;
- Once placed on the Suspended Vendor list, state agencies will be advised not to do business with the Service Provider without written approval from State Purchasing until the state receives reimbursement for all re-procurement costs; and
- Upon prior notice to the Service Provider, after the expiration of any cure periods, perform any term, condition, or covenant that has been breached by the Service Provider at the reasonable expense of the Service Provider.

General Suggested Termination Rights:

- The ability to terminate individual service areas to allow the Agency to insource components when they are able to perform those duties in the best interest of the state; and
- Service Provider must provide termination assistance services, detailed below.

Recommended Termination Assistance Services:

- Service Provider must cooperate fully with DMS and any new service provider;
- All processes and procedures performed by the Service Provider must be explained and appropriate documentation provided for each service layer under contract;
- Answer questions related to the migration and transition of services; and
- Termination Assistance Services rendered prior to the termination date of the contract will be at no additional cost to DMS. Services rendered after termination of the contract will be at a reasonable rate, established in writing.

Financial Consequences Suggestion:

Financial consequences language including amounts should be included in the ITN and awarded contract. This language should be developed in consultation with DMS legal counsel and DMS Purchasing staff.

Two specific areas to address:

- Should the service provider fail to achieve service operation as defined by a mutually negotiated and acceptable implementation plan through the ITN process; as a result of activities/tasks directly within the service provider's control, then the service provider shall pay an appropriate amount based upon the contractually agreed upon service level agreement until service operation is deemed acceptable by measured contract stipulations per the agreed upon plan; and
- Should the Service Provider fail to achieve the Performance Metrics prescribed in the contract, as a result of activities/tasks directly within Service Provider's control, then the Service Provider shall pay DMS liquidated damages for each Performance Metric not met.

11 TRANSITION PLAN

Section 287.0571 (4) (n), F.S. A state agency's transition plan for addressing changes in the number of agency personnel, affected business processes, employee transition issues, and communication with affected stakeholders, such as agency clients and the public. The transition plan must contain a reemployment and retraining assistance plan for employees who are not retained by the state agency or employed by the contractor.

Section 287.0571(n), F.S., requires a business case to address issues that may arise when work currently being done by state employees is transferred to a contractor. If, at the completion of the current voice service contracts, DMS decides to contract with a new vendor, the following steps are advised to ensure a smooth

transition of service. In the event that the one of the current voice service contractor is awarded, the transition plan would only require publishing the new EVS service model with pricing to include legacy service support.

Additional specifics can be reviewed within the cost benefit analysis section for Option 2.

11.1 Transition Plan

The transition plan suggestions below outline key activities that must be completed while working with the DMS and the incumbent vendors as appropriate. To ensure a complete and successful ramp up of a team that can provide implementation, engineering, and support services for EVS, the new service provider should be required to provide a detailed migration plan that takes the following into consideration:

- Resources
- Knowledge Transfer
- Migration Project Management Planning
 - Communications Plan
 - Engineering Review
 - Provisioning Planning
- Network Operations Center
- Administrative Services

11.2 Resources

DMS should ensure that adequate state resources are maintained and/or supplemented in the execution of EVS to ensure that a smooth transition of service layers is accomplished for DMS customers. These resources should be focused on working with the service provider throughout the process.

The service provider will confirm the resources needed to provide the support services based upon the technical specifications agreed upon in the ITN. On-boarding of resources is the assignment of resources by both the vendor and DMS and getting them engaged as a complete project team. It is important to note that it is the responsibility of both DMS and the service provider to engage in this process at a focused and high level of assignment for the duration of the transition period. Any inconsistencies in resources may inject high degrees of risk to the migration plan.

The new service provider should be committed to identifying the best resources to fulfill the needs of the project plan. It is anticipated that due to the large number of DMS customer sites, the service provider should be prepared to assign several dedicated technical project managers and engineering teams. The DMS project team should work with the service provider to define a Staffing Plan that outlines (per resource role) the required skill set and desired on-boarding date that meets the expectations of the Transition Plan. The Staffing Plan should be documented and accepted by DMS prior to execution. The on-boarding date for the resources will correspond with the needs of the Knowledge Transfer activities to ensure that resources are on-boarded to fully participate in the activities with the service provider's resources as appropriate.

11.3 Knowledge Transfer

Knowledge Transfer activities are critical to the success of any transition plan. Knowledge Transfer should consist of three major components: Job Shadow, Reverse Job Shadow, and Policy/Procedure Training. DMS should provide resources to lead and facilitate the Knowledge Transfer work activities. The new service provider

should be responsible only for participation as per the ITN agreement for migration. During the Knowledge Transfer work effort, multiple service providers will still be the sole parties responsible for support and maintenance of a specific service layer that are operational through the migration period.

The activities to be completed for each service layer within EVS should be documented in Knowledge Transfer Plans. The service provider should monitor the Knowledge Transfer Plans on a weekly basis to confirm that resources are completing their Knowledge Transfer activities in a timely manner. A weekly presentation to DMS should occur to ensure compliance with this task.

11.4 Migration Project Management Planning

The new service provider is responsible along with DMS for ensuring that the project management plan meets the expectations of the voice service customers.

11.4.1 Communication Plan

DMS, along with both the current contractor and the new service provider (determined by service layer), should implement a Communication Plan that identifies and addresses the concerns of all key stakeholders during the Transition period and the life of the contract. The Communication Plan outlines the following:

- Communication Event
- Communication Vehicle
- Stakeholders Impacted
- Communication Start Date
- Communication End Date
- Frequency of Communication
- Owner of the Communication

The purpose of the Communication Plan is to document identified communication needs and processes that will be used to address these. The communications objectives are to:

- Identify key stakeholders
- Provide communications timely and accurately
- Provide feedback mechanisms to ensure feedback is appropriately reviewed
- Adjust the communication plan as necessary to improve gaps identified through the process

11.4.2 Engineering Review

It is critical that a comprehensive technical engineering review take place with DMS as the facilitator between the current contractor and the service provider (based on service layer). All technical aspects of the physical, logical, and technical definitions for the current voice service layer must be documented. This documentation should be utilized in the transition planning phase with the service provider's project managers and engineering teams.

Careful consideration should be given to voice service customers whereby critical public services are provided to ensure no impact to the state's public takes place. Adequate planning and testing are critical steps to ensure that no service interruptions occur.

Additionally, it is also noted that due to economic conditions, the state has gone through a number of downsizing efforts since the inception of the various voice service layers. With that in mind, a number of voice service customers do not have adequate telephony/network engineering staff to provide a high level of support. To ensure this is not detrimental to the process, the service provider should be made aware and compelled to provide additional resources as necessary to ensure complete coverage of service transition at the service provider and customer levels.

11.4.3 Provisioning Planning

Proper provisioning planning is the identification of all physical components and assets required to delivery each service to a voice service customer. The service provider's project management team must address each voice service customers provisioning needs adequately to avoid service interruption. It is recommended that DMS and the service provider establish a separate project plan or sub-plan that is unique to each customer that outlines the following:

- CPE requirements
- Service type
- Service requirements
- Service configuration, to include all routing definitions; dial plans; telephone numbers; etc.
- Service nature, e.g., critical public service, general use, best effort, etc.
- Voice service customer involvement capabilities, e.g., does the customer have telephony/network engineering staff available?
- Capabilities of existing customer infrastructure
- Critical dates that preclude migration of service, such as Legislative Session, Public events, etc.

11.5 Network Operations Center

The transition of the Network Operations Center (NOC) services is one of the most critical customer facing tasks in the plan. DMS must ensure that both the current contractor and a new service provider maintain a steady state service availability for all aspects of the NOC service layer as prescribed in the ITN. The current service providers NOC services (by service layer) must remain fully functional and staffed up until the final cut over of all service layers to the new service provider's network/telephony topology.

11.6 Administrative Services

The administrative functions required by the service provider are determined by the ITN. However, the transition of customer service, account services, and billing services are critical in nature to the transition plan. A full definition of the requirements for customer service, and account team interaction should be addressed in the ITN and subsequent transition plan. The billing aspects should be defined such that DMS does not incur significant rework of its billing and reconciliation processes.

12 AMERICAN WITH DISABILITIES ACT OF 1990, AS AMENDED

Section 287.0571 (4) (o)F. S. A plan for ensuring access by persons with disabilities in compliance with applicable state and federal law.

The Americans with Disabilities Act (ADA) prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. To ensure that the service provider is compliant with state and Federal ADA laws, the procurement should request that the service provider outline a plan to identify and address any ADA concerns.

13 CONTRACTUAL PROVISIONS

This business case does not address specifics of the contractual provisions as set forth in section 5 of 287.0571, F.S., as they will be fully defined in the ITN document that is released to the vendor community. The ITN will take into consideration all other sections of the business case to aid in the development of the contextual language as appropriate.

14 APPENDIX

14.1 Business Case Working Group and Interview List

14.1.1 Division of Telecommunication (DivTel) – Working Group

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14.1.4 Agency Acronym

Agency Acronym - Full Name

AGR	Department of Agriculture and Consumer Services
AHCA	Agency for Healthcare Administration
APD	Agency for Persons with Disability
BOR	Board of Regents
CIT	Department of Citrus
DBPR	Department of Business and Professional Regulation
DCA	Department of Community Affairs
DCF	Department of Children and Families
DEO	Department Economic Opportunity
DEP	Department of Environmental Protection
DFS	Department of Financial Services
DHSMV	Department of Highway Safety and Motor Vehicles
DJJ	Department of Juvenile Justice
DLA	Department of Legal Affairs
DMA	Department of Military Affairs
DMS	Department of Management Services
DOC	Department of Corrections
DOE	Department of Education
DOEA	Department of Elder Affairs
DOH	Department of Health
DOL	Department of Lottery
DOR	Department of Revenue
DOS	Department of State
DOT	Department of Transportation
DVA	Department of Veteran Affairs
EOG	Executive Office of the Governor
FDLE	Florida Department of Law Enforcement
FPC	Florida Parole Commission
FWC	Florida Wildlife Commission
PSC	Public Service Commission
SBA	State Board of Administration