



*Report on the Comprehensive Infrastructure Agreement
to the Virginia Information Technologies Agency – June 2015*

FINAL AGENCY ASSESSMENT



The Virginia Information Technologies Agency (VITA) provides IT infrastructure services to executive-branch agencies throughout the Commonwealth of Virginia, primarily through a contract with Northrop Grumman. In anticipation of contract expiration in 2019, and with recognition of the complexity of change in such a large shared services environment, VITA is currently evaluating sourcing strategies to better align with current best practices and future customer requirements. Toward that end, VITA has commissioned Integris Applied, an IT sourcing advisory firm with focus on the public sector and next-generation sourcing models, to assess the current environment and develop a long-term strategy.

This report is provided by Integris Applied to VITA, its customers, and the Commonwealth of Virginia at large. It describes the agencies' perspectives on the effectiveness of the VITA / NG partnership in serving their needs. Future reports will complement these findings to provide a full assessment of the current situation and specific executable recommendations.



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1. Executive Summary

VITA is developing a second generation sourcing strategy in anticipation of the June 30, 2019 expiration of the Comprehensive Infrastructure Agreement (CIA) with Northrop Grumman. As the agency charged with operation of IT infrastructure for “in-scope” agencies, governance of COVA’s IT investments, and the procurement of IT systems for all Commonwealth agencies, VITA plays a critical role for the operation of COVA’s government and the delivery of services to Commonwealth citizens. It is important that agencies are engaged during development of the sourcing strategy to ensure that it is sustainable and will improve services to citizens, better manage cost, and balance the needs of the enterprise with the needs of individual agencies.

This Final Agency Assessment Report consolidates feedback from over 60 agency interviews conducted between February 23 and April 23, as well as formal and informal interactions with COVA stakeholders through the forums that were established to solicit feedback and engagement during this program. This final report also incorporates data gleaned from an online survey sent to 65 agencies which generated 54 responses (an 83 percent response rate). Interviews and survey data from VITA staff are not included in this report and will be incorporated in the Enterprise Report. Together, the Final Agency Report and the Final Enterprise Reports comprise are the outputs of the Situational Assessment phase of the IT Infrastructure Sourcing Strategy program (ITS).

Interviews were conducted independently by Integris Applied and without VITA participation. This approach supports VITA’s broader goal of developing a sourcing strategy that includes agency viewpoints more effectively than the process that led to the original agreement with Northrop Grumman. Views expressed during these Agency interviews are consistent with views Integris Applied has heard expressed in other states with similar first generation outsourced delivery models. The original objectives of Virginia’s IT program focused on capital investments, standardization and consolidation. However, in the time since signing the Northrop Grumman contract, agency and enterprise needs have shifted, leading VITA to ask different questions and to search for improved ways to engage with the agencies.

Over the course of the interviews, a “hierarchy of needs” became apparent. This hierarchy represents the most pressing delivery issues facing COVA agencies and is discussed in detail in Section 8 of this report. What also became apparent were key themes, or root causes, that applied across all notable service delivery issues.

The three key themes communicated by agencies over the course of these interviews are:

- **Empathy for agency business operations**
Agencies do not believe the Partnership understands or appreciates the impact service delays, disruptions or unplanned changes have on their business operations. As a result, agencies do not believe the Partnership responds with the needed sense of urgency when service interruptions occur.
- **Existence of operational silos**
Agencies experience poor communications between the various VITA and Northrop Grumman internal organizational silos. Agencies also experience poor execution of cross functional activities during ticket resolution.
- **Cost**
Agencies perceive that Partnership services are much more expensive than what can be purchased in the market. Agencies are frustrated with a lack of control and transparency around cost, forcing many to reduce other services to compensate for perceived increasing charges from VITA.



The effect of the long history of the Partnership on current opinions was manifest throughout the interviews. Interviewees recalled significant outages that in some cases were years old. Memories of these events have persisted and are highlighted whenever a disruption in a process or a service occurs.

Agencies also note that in the nine years since Northrop Grumman began providing services the Partnership should have been able to solve the service delivery issues. If process were more mature and delivery more stable, the Partnership would be able to spend more time focusing on agency business operations and requirements.

The survey data supports findings from the interviews, quantifying the importance to agencies of the most relevant Partnership characteristics and the effectiveness of those characteristics. This data demonstrates the focus agencies have on service delivery and the need for improvements in how technology services are delivered.

As VITA develops the Commonwealth's next generation sourcing strategy it will need to balance enterprise requirements, agency requirements, and citizen expectations. This effort will create tradeoffs. However, understanding and acknowledging the concerns of those who are closest to the citizens, i.e. Commonwealth agencies, is a critical building block for any improvements in the delivery of IT infrastructure services to agencies. As critical as agency feedback is to the development of COVA's sourcing strategy, this report and the final Situational Assessment report will be considered along with other inputs produced by Integris Applied to produce final recommendations.

2. Program Description

VITA sits at the center of the Commonwealth's strategy to improve service delivery to citizens. As the agency responsible for providing the information technology and services that enable government to serve the citizens of the Commonwealth, VITA must keep pace with new technologies and how Virginians are using those technologies in their daily lives. VITA's partnerships with the marketplace must provide transparency, flexibility and innovation, while meeting the needs of the agencies that sit on the front lines with citizens every day.

The current relationship with Northrop Grumman provided a significant step forward in providing consistent standards and security as well as modernizing the IT infrastructure. Technology has evolved and citizens needs have changed significantly. Information technology requirements are already beyond the requirements that could have been imagined when the existing contract was conceived. It is time to reassess the best service delivery construct to implement current and future needs.

VITA must now develop a sourcing strategy that balances the needs of agencies and the enterprise as a whole. This strategy must be developed in partnership with agencies and policy makers, incorporate marketplace capabilities and innovation, and consider both short term and long term costs. The importance of any new strategy for all stakeholders necessitates inclusivity, transparency and an "all hands on deck" approach to understanding challenges and potential tradeoffs. Only an iterative engagement model that solicits feedback and engages participation at each step will produce the right outcomes for the Commonwealth.

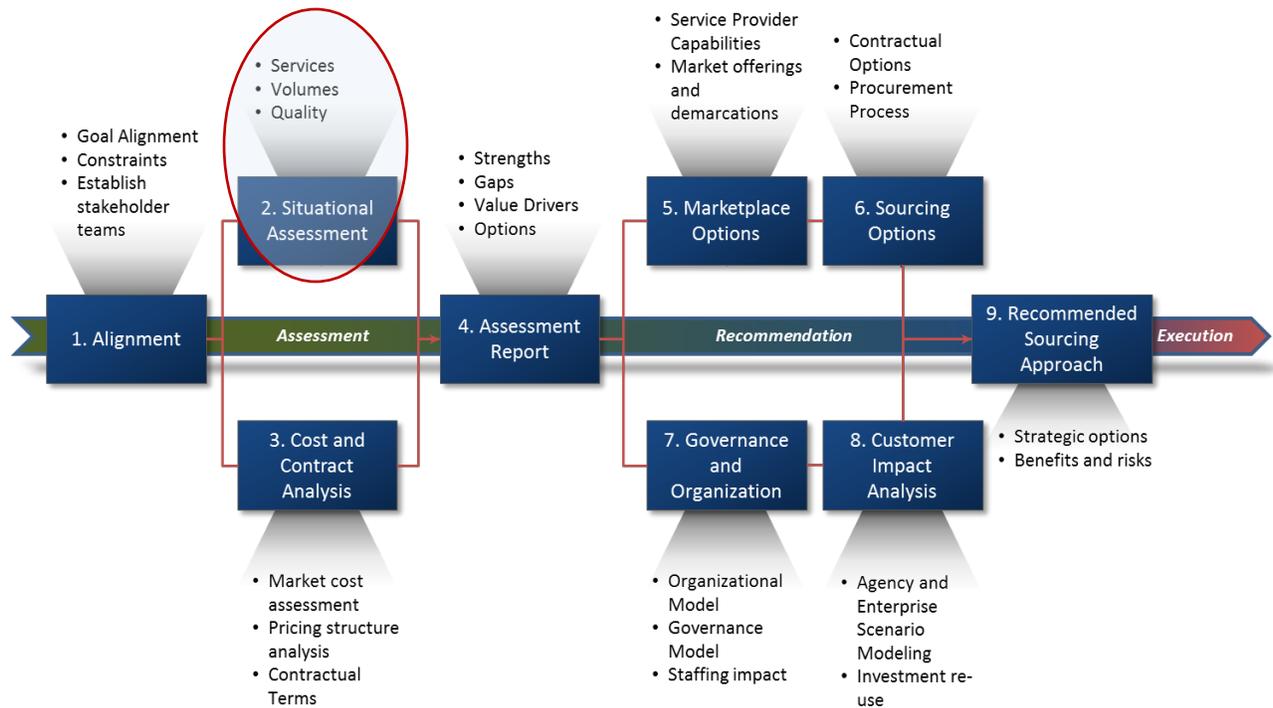
3. Objectives of the Situational Assessment

The objective of the Situational Assessment phase of the project is to obtain unfiltered input from COVA stakeholders to develop an understanding of the mission of each agency, and the priorities of the

enterprise as a whole. This input will guide the development and evaluation of recommendations for the Commonwealth's next generation sourcing strategy.

The situational assessment outputs include both the Final Agency Assessment Report which is augmented with additional content to make the Final Enterprise Report, is one of the primary building blocks in the overall IT Infrastructure Sourcing project as shown in the illustration below.

Figure 1, The Assessment Phase



The Assessment phase, which includes the situational assessment, is shown in Figure 1. The Assessment phase is critical not only for shaping the recommendations in the second half of the IT Infrastructure Sourcing Strategy program project but also for the tone it will set with agencies and other stakeholders. VITA's initiative is much more than a second generation sourcing event: it is a significant change management program for a large and complex enterprise.

The approach used for the situational assessment and the program as a whole is intended to:

- Collaborate with agencies and policy makers
- Recognize agency business requirements and customer service needs
- Create buy in for options and the need for change
- Balance agency needs with enterprise requirements
- Develop forums for ongoing dialogue and feedback

It is Integris Applied's experience in programs of this size and scale that early engagement of end users delivers the best outcomes for the organization. VITA's engagement of stakeholders through forums and interviews is the most extensive outreach program we have seen at this point in a re-sourcing initiative.



4. Approach

The situational assessment is based on interviews with VITA, and executives and IT leaders at state agencies. The purpose of these interviews was to understand the mission of each agency and the Commonwealth’s overall objectives, and the barriers that may be preventing agencies from achieving their missions. The question that frames our methodology is “looking to the future, what do the agencies need to serve their customers?” The final situational assessment will produce short term recommendations for service improvement, and will shape final recommendations for a future state delivery model. The final situational assessment will also outline tradeoffs that will likely exist between agency and enterprise needs. These tradeoffs will influence recommendations for a future state delivery model.

4.1 Communications

The VITA team, including Integris Applied, implemented a communications plan aligned with the Situational Assessment. Components of the communications plan are described throughout this document. It is important to note that all aspects of this program, from agency interviews, to the forums created for COVA stakeholder engagement, are part of an integrated program designed to create a fact-based snapshot of COVA’s future business requirements.

4.2 Preparation

Prior to conducting interviews with agency executives, Integris Applied employed the approach depicted in the exhibit below to develop a profile for each agency. This approach allowed Integris Applied to have informed discussions with agencies about mission, strategy and service delivery requirements.



Requests for interviews were communicated by VITA to the agencies through multiple channels including:

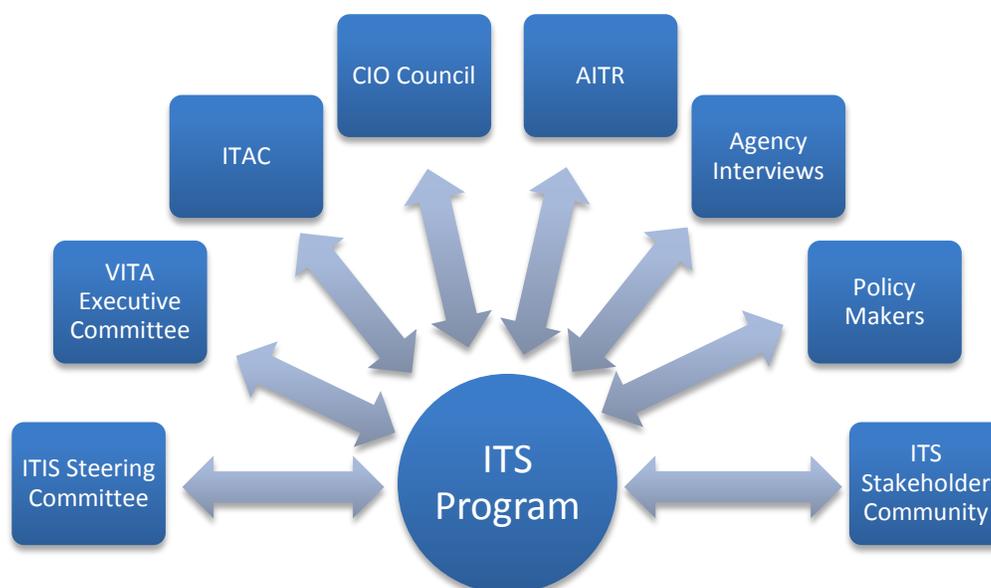
- Email from (former) CIO Sam Nixon on March 2nd.
- Email from Perry Pascual, VITA on March 9th
- Email from Deputy of Finance Neil Miller on April 1st



Interviews were preceded by an informational message which introduced the purpose of the assessment, the process and the questions that would be asked. The framework used for each interview is attached as Appendix B in this document. Each interview was conducted by two experienced consultants who documented the sessions. During the course of the interviews, the notes were compiled to uncover trends and priorities of the agencies and other stakeholders. These observations form the basis for this final report.

4.3 Forums

An objective of the IT Infrastructure Sourcing Strategy program is agency participation and engagement. As noted above, the VITA team, including Integris Applied, developed and implemented a communications strategy that includes multiple forums for dialogue and feedback. The forums used are depicted below:



4.4 Agency Complexity Framework

Since the implementation of the IT Infrastructure Services Partnership in 2006, COVA experienced the challenges that all enterprises face when implementing change programs – balancing the needs of the enterprise as a whole with the individual needs of agencies. In any model tradeoffs must be made. It is important to communicate potential tradeoffs to all stakeholders, and use those tradeoffs as a basis for how a new delivery model is implemented.

This challenge is also manifest in marketplace understanding of an enterprise model. Traditionally, large providers offer services that are targeted at the enterprise rather than the individual agencies. Doing so facilitates ease of contracting, reporting and delivery, and lowers costs. It is also the way “it has always been done.”



Prior to conducting interviews, Integris collected existing data about VITA services to agencies, and about the agencies themselves, to create a database that will be used to model the "complexity" of an agency through a framework that will consider factors such as types of services provided by the agency, agency regulatory requirements, public visibility, security requirements and technology spending levels.

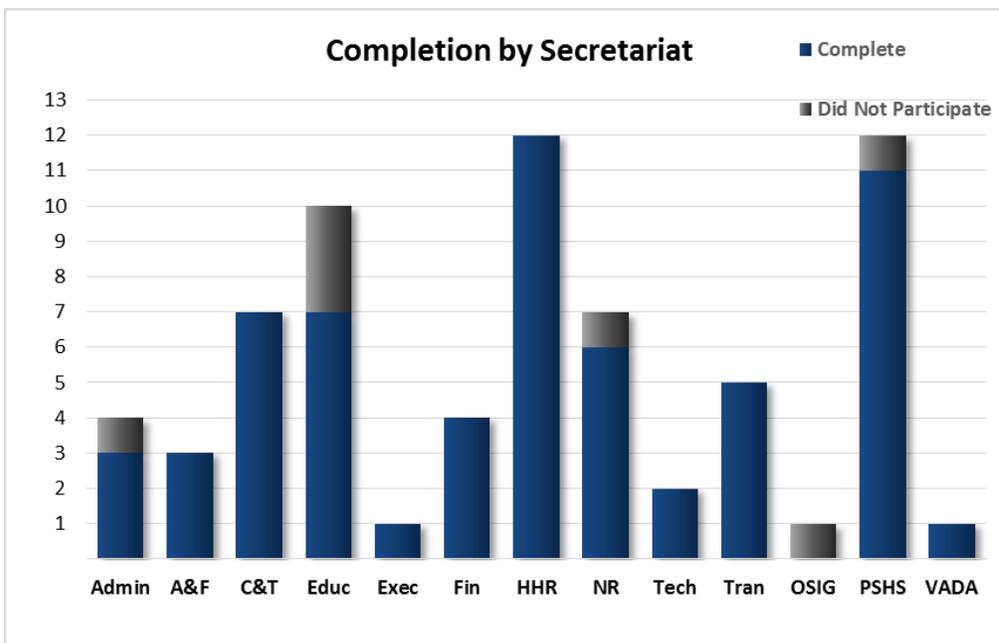
The purpose of this framework, when combined with the feedback from interviews, is to capture the unique needs of agencies in a manner that is more efficient than an agency-by-agency approach, and that is more customized than a standard enterprise-level services model may allow. This framework allows the needs of the enterprise and the agencies to be seen simultaneously, allowing a clearer understanding of sourcing strategy options, and helping the marketplace understand the Commonwealth's service needs in a more nuanced manner.



5. Agencies Interviewed

The Integris Applied team met with ninety percent of the in-scope agencies to discuss future business needs and difficulties with the current model. The organizations are shown in Figure 2 below.

Figure 2 Interviews and Meetings (see Appendix 10.1 for further detail).



Completed 60+ ninety minute customer interviews

6. Objectives of VITA / Northrop Grumman Agreement

VITA's objectives for the existing service delivery model with Northrop Grumman are outlined in the CIA, which was signed on November 14, 2005. The objectives described in article 1 of the agreement are shown below.

The Commonwealth has undertaken a comprehensive IT infrastructure transformation initiative, the primary goal of which is to significantly improve the Commonwealth's IT systems and the manner in which such systems are operated, supported, and maintained. The Commonwealth therefore desires to engage a service provider to provide a broad range of IT goods and services related to the ongoing operation, support, and maintenance of the Commonwealth's IT systems and infrastructure, as well as certain transitional services whereby Vendor shall assume responsibility for such IT goods and services from the Commonwealth and certain of its current third party service providers. Vendor acknowledges and agrees that the Commonwealth has entered into this Agreement in order to achieve the general objectives identified above in this Section and the following:

- i. Integrate and manage the IT infrastructure of executive branch agencies;*
- ii. Implement a secure Intranet encompassing in scope agencies;*
- iii. Establish a state of the art data center and back up facility;*
- iv. Consolidate agency servers in their most cost effective locations;*
- v. Implement a desktop management program for all in scope agencies;*
- vi. Establish a unified statewide electronic mail services;*
- vii. Provide a statewide customer care center;*
- viii. Employ innovative procurements, supplier partnerships, and financing arrangements to fund, expedite, and ensure the performance of future initiatives;*
- ix. Introduce innovative technology solutions supporting redefined, improved agency mission critical citizen service programs;*
- x. Improve major IT project success rates to best in class levels; and*
- xi. Achieve significant annual return on investments.*

The majority of these objectives have been substantially met. These outcomes demonstrate the value we typically see in first generation outsourcing engagements. As a result of creating the Partnership, the Commonwealth has greater insight into the costs of managing infrastructure services than most states, has improved its security profile, and has established enterprise solutions such as email which eliminate redundancy across the enterprise. While the amount of time taken to achieve these objectives has been longer than planned, or what is typical in the market, the Partnership is correct to claim credit for achieving critical enterprise wide objectives.

At the same time, the CIA is old and is not consistent with marketplace terms, conditions and pricing. Service delivery challenges, in part, have prevented the evolution of services and undermined efforts to understand agencies business requirements. Cross functional capabilities are not mature and slow processes take agency focus away from serving citizens.



7. Interview Observations

Most of the agency feedback focused on challenges they face because of the way services are currently delivered. Even though this feedback may partially be a result of the interview process, which asked agencies to identify improvements they wanted to incorporate into a new business model, the feedback was clearly dominated by the impact on agencies resulting from weaknesses in the existing VITA/NG service model. This Final Agency Report is focused on feedback received during interviews. It captures agency views of the current environment and their future needs. It is beyond the scope of this effort to validate the opinion of the interviewee or balance those opinions with alternative viewpoints.

The interviews did not differentiate between difficulties arising from VITA's statutory oversight responsibilities and those associated with the delivery of IT infrastructure services. While it may be true that agencies have challenges with VITA's legislatively mandated governance responsibilities, it is not the purpose of Integris Applied's engagement to assess those responsibilities.

It should be noted that aside from a few notable exceptions, most agencies did not want to provision their own infrastructure services. Instead, many agencies indicated their support for the role for a common infrastructure provider and acknowledged the need for oversight roles required of VITA. This acknowledgement by the agencies did not diminish the considerable pain they feel from working with the current environment.

Our observations are outlined in the following manner:

- **Common Themes** describe trends that manifest themselves across all agencies;
- **Hierarchy of Agency Needs** depicts the frequency of a topic mentioned by agencies
- **Other Observations** includes suggestions for service improvement made by agencies

7.1 Common Themes

The three common themes that emerged from the interviews are:

- Empathy for agency business operations
- Operational silos
- Cost

Each theme is discussed below.

7.1.1. Empathy for agency business operations

Agencies believe that VITA/NG does not take into account, or appreciate, the impact its actions have on the agencies. These actions include:

- Unfunded requirements
- Changes such as patches or stress tests
- Delays in projects and/or tasks

Agencies know that VITA and NG managers do not intend to create harm. Agencies believe that VITA/NG managers and operational staff are unaware of how severe an operational impact may have on an agency.



7.1.2. Operational Silos

Agencies feel that they must deal with VITA and Northrop Grumman internal organizations individually while these silos do not coordinate activities between themselves. In other words, the cross functional activities upon which service delivery is based are not working efficiently. For example, a trouble ticket or work request may be closed when the Northrop Grumman server group completes its portion of the work even though Northrop Grumman’s end user computing group has not completed tasks associated with the ticket. Agencies also feel that they, and VITA, never know which internal VITA or Northrop Grumman groups will need to be included in projects resulting in uncertainty when work will be completed.

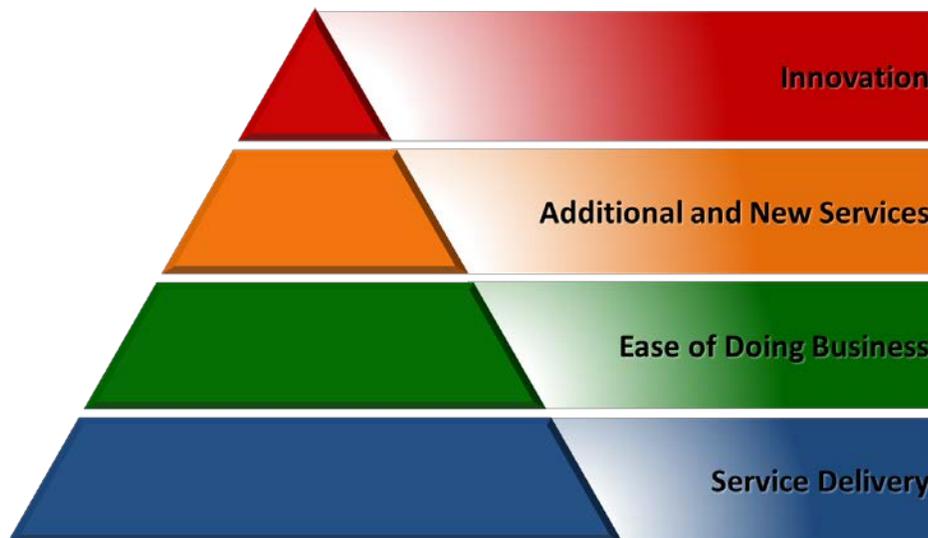
7.1.3. Cost

Agency complaints include high cost, continuously rising charges from VITA/Northrop Grumman, and lack of transparency. Agencies described how the IT portion of their budgets continues to grow, often at the expense of other budget items because overall budgets have been reduced. Most feel that the costs charged by VITA are dramatically higher than prices they would pay if services were purchased in the market, especially for disaster recovery and data storage. They provided numerous examples of priority projects that were not pursued because the solution would have been cost prohibitive. In some cases, agencies stated that they cannot afford needed disaster recovery.

7.2 Hierarchy of Agency Needs

Feedback collected in the interviews fell into a hierarchy with the strongest feedback focused on the most basic needs. The observations in this section are presented according to the hierarchy shown in figure 3 below.

Figure 3 – Hierarchy of Agency Feedback



The sections below discuss the feedback in each level of the hierarchy shown above.



7.2.1. Service Delivery

The strongest feedback from interviews was related to the impact of service delivery on the ability of agencies to conduct their business. Interviewers heard consistent feedback about the same problems from the majority of agencies. Any new business model for VITA will need to improve levels of service responsiveness.

A summary of the most frequently cited issues are described during the interviews are presented below.

Service Outages

Historical and current outages were a leading topic amongst interviewees. Many of these outages have been publicly embarrassing for the Commonwealth. Agencies recounted the impact of outages on their business. Agency IT staff are often involved at nights and weekends to restore services. Agencies believe that services should be more stable given the maturity of the service provider. Agencies frequently reported that VITA/NG does not appear to respond with a similar sense of urgency or awareness of the impact on services.

Service Problems

Many agencies reported a similar lack of awareness of the impact of change control and security changes on business operations of the agencies. Many agencies reported that they find service problems from patches and security updates then need to assemble the proof of problems before the Northrop Grumman internal group responsible for that service would respond.

Examples of service interruptions at the Department of Social Services resulting from problems with change control include a long running problem with inoperable MS Office systems. It was eventually established that the cause was rollout of multiple modified versions of MS Office. Another example was a Mainframe system that shut down when patches did not work. When the system was restored out-of-date back up files were used, requiring another restore while the 60 person department couldn't work for whole day and the agency IT staff was diverted to work on the problem.

Critical Services

Many agencies, such as the Departments of Taxation, Social Services and Elections, have critical time periods when their core systems must operate. Change Control processes normally take these freeze periods into account when making system upgrades, patches, rollouts, etc. Agencies consistently reported that the internal silos at Northrop Grumman do not appear to communicate with those responsible for the change control process, with the result that changes are rolled out without respect for the risk to agency operations. An example from the Department of Taxation described McAfee server updates implemented during a freeze period without knowledge of either agency or the Partnership management. Errors in the updates and lack of back-out procedures resulted in rebuilding the servers during peak tax season.

Many agencies such as the departments of Corrections or Behavioral Health and Developmental Services, also have critical systems that cannot be degraded or interrupted. A poignant example cited by the agency of Northrop Grumman's decision to perform annual security stress testing on Department of Behavioral Health and Developmental Services during the daytime. The testing degraded the patient care systems during peak patient hours. These systems control access to medications, allow access patient records for treatment, discharges, and consultations, as well as controlling the pharmacy operations, distress badges, convict control. As a result, this department has an unfortunate saying "Security trumps patient safety".



Critical Dates

Many agencies have deadlines that they must meet. With the current model, agencies have no assurance when a project can be completed. Even starting months in advance, agencies say they are never sure if a project can meet their deadlines. Elections must prepare for major volume increases the day of federal elections each two years. Alcoholic Beverage Control (ABC), like many agencies is opening facilities on target dates. Delayed store openings for ABC that missed the Christmas season, meant both extra cost of the unused facility but also lost revenue when citizens simply went to a supermarket and bought wine there instead.

Sudden Upgrades

Multiple agencies reported that they were obliged to make sudden upgrades of servers that were either out of capacity or were too out of date to support the business. The problem for the agency was the unexpected diversion of staff for problems that should have been foreseen with routine monitoring.

Field Support

Many agencies have significant staff located at remote agency sites and several have a large number of staff who do not work in agency facilities. The most striking example is the Department of Taxation that has over fifty percent of its workforce working remotely without office space in agency facilities. This is a major advantage to attracting employees and a major source of cost savings. Without effective remote field support service, staff cannot work for extended periods while their PCs are sent away for repair.

7.2.2. Ease of Doing Business

The impacts described by agencies of working with the Partnership are not as dramatic as the service delivery issues described above. However, nearly every agency cited the excessive amount of time and effort their IT staff expended to work with the Partnership. The ongoing impact of this diversion of agency staff appears as important as service delivery issues because it absorbs agency IT staff to deal with the infrastructure, it diverts effort from agency priorities.

Examples cited during the interviews are shown below.

- Must deal with internal VITA and Northrop Grumman silos to get them to do their portion of the work, and then deal with the next internal group for the next part of the process
- Problems passed from one service delivery silo to the next silo
- “Fight with VITA every day about something”
- VITA has multiple requirements that require lot of IT staff hours
- IT staff have to develop ‘proof of problem’ in order to get someone to acknowledge a problem
- Every part of VITA/NG enforces its own set of rules. Requirements rolled out to agencies in multiple areas with due dates and consume agency manpower
- No one at VITA/NG seems responsible for ensuring service works, work orders are completed, and problems are actively resolved, so the agency must do the follow up.
- Frequently the agency compensates for infrastructure work that is poorly executed
- Lots of agency effort required for work requests, project approvals, trouble tickets, patches, lack of system monitoring
- Break-Fix services take a lot of coordination/follow-up/management to get the service entirely fixed
- Agency provides field support to remote staff to eliminate extensive employee downtime

- Help Desk services are deemed inadequate so the agency staffed a group to supplement services

Agencies did not discern between VITA's statutory governance functions and service delivery functions when discussing challenges related to working with the Partnership. It is Integris Applied's impression that historical and current service delivery challenges have exacerbated concerns agencies might have about VITA governance functions that are not directly related to service delivery.

7.2.3. Ordering Additional Services and New Services

Almost every agency noted difficulties with the work request process, noting that it is both slow and uncertain. Agencies do not have the ability to predict if they can meet business deadlines or to predict when services will become available. In most cases, agencies told the interviewers that they initiate work requests as early as possible even before they can clearly define what they will need.

A simple example comes from the Department of Elections. Deadlines for increased capacity to support national elections are known far in advance. Even when the agency starts work orders far in advance, they have still not been able to increase capacity in time to meet these deadlines. The majority of agencies gave the example of the 4-6 month lead time to stand up a new server. Most said the lead time should be two weeks.

Requests for new services appear to face significant resistance from the Partnership to the point of extinguishing many of the requests. A sample of the difficulties cited during the interviews are shown below.

- VITA decides which new service offering it will create. The offerings have been limited and not aligned to the business requirements of individual agencies. An example from the Department of Behavioral Health and Developmental Services illustrates the reason a Partnership-developed tablet solution is not acceptable. Mental institutions need mobile devices that fit in a pocket because staff must have both hands free to suppress violent patients. The requirement is real since the agency averages of one patient or staff member is sent to the emergency room each day from this violence.
- Each internal group within VITA and Northrop Grumman appears to have its own rules. To obtain new services, the agency must resolve the objections of each internal group. The agency is left alone to try and get a new service approved.
- VITA/NG tries to develop an in house solution rather before considering a solution that exists in the market.
- The first agency that wants a new service pays the full cost of developing a solution.
- Some services have no accepted solution. The Department of Elections needs a short term intensive increase in capacity each two years. Typically their website gets about one hundred hits per week. When there is a federal election, they get eight million hits that one evening. The entire system needs to be prepared for the single day, then ramp down for another two years. This would be possible if the agency could use services available in the market.

Many agencies feel that the internal groups in VITA and Northrop Grumman who process requests for new services are unreceptive to providing solutions. A new model for VITA will need to provide incentive for both VITA and provider(s) to provide additional and new services.



7.2.4. Innovation

Agencies report varying degrees of need for innovation. Those with significant amounts of business change, such as Department of Motor Vehicles, Jamestown-Yorktown Foundation and the Department of Corrections, identify a need to employ new services or internal systems.

Most of the services involve new technology and many are already developed in the market. The new service delivery model adopted by VITA needs to allow the integration of these services on the infrastructure without violating the need for security, standardization and economies of scale.

Trends. Even though the new business model will need to adapt to as yet unimagined services, most of the trends for new services are already visible. An illustrative list cited by the agencies is shown below.

<ul style="list-style-type: none"> Mobile workforce Mobile apps portal Telework Electronic case records Records imaging Bring-Your-Own-Device Electronic signatures (legal signatures) Identity verification, especially for mobile devices Hosting an apps store Use of 3rd party hosting services SaaS applications Clinical information management Multiple cloud solutions 	<ul style="list-style-type: none"> ePermits applications Special purpose tablets (i.e., for museums or medical environments) Mobile apps Movement of large data between 3rd parties Low cost storage for data intense applications such as photo images Mobile devices specialized for various types of field staff Bar codes (e.g., on licenses, permits, museum displays) Mobile ticket sales Connectivity solutions for staff in remote areas Electronic content systems
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Services. Many of the services are specific niche solutions unique to the business of a single agency. There is an abundance of these that are already known to the agencies. The VITA Service Leads aptly call these “Purple Squirrels” because they are only seen once. However, there are a lot of different Purple Squirrels, as shown by the list below. Any new business model will need to allow the addition of specialized services to support agencies.

<ul style="list-style-type: none"> Specialized mobile applications (medication management, patient monitoring, patient control) Drones for aerial photography Drones for perimeter surveillance 3D gallery video exhibits 	<ul style="list-style-type: none"> Telemedicine devices and apps Specialized wearables for wide variety of uses Ticketing software, accounting systems Curatorial collection system Fund Raising software
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Sound systems for museum displays Animation and holograms Bar coded visitor displays	Nesting applications (eg., facilities operating expenses) Wifi for wooded areas
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7.3 Additional Observations

Support for shared infrastructure and oversight. While most interviews with agencies focused on difficulties with the current model, multiple agencies voiced their support for shared infrastructure services. Many voluntarily acknowledged that oversight functions required of VITA are necessary.

The chart identifies topics referenced in many interviews as difficulties or suggested changes to the current model.



Impact of routine requirements on small agency budgets. The budgets of small agencies are so small that routine oversight requirements can cost a significant percent of the agency's total budget. Agencies want VITA to assist with the requirement or provide lighter requirements for tiny agencies.

Need standard choices to purchase different of levels of service. VITA/NG offers generally offers a single choice of service. When an agency needs something different, it must request a specially built solution. This expensive alternative is not sensible in routine areas where agencies, or individual parts of agencies have needs that could be supported by standard levels of service (such as Bronze, Silver, Gold and Platinum services) as is common in the marketplace. Two immediate areas are Break-fix support for PCs and levels of security.

Resources for small agencies. VITA could have experts-on-demand to help with tasks that would be easier for someone familiar with the required task. Small agencies have few or no IT staff. The learning curve for occasional mandated activities is steep. Experts at VITA could significantly reduce the effort needed by assisting small agencies with audit plans, security risk assessment, business impact analysis, disaster recovery plans, vulnerability scans.

Need for additional shared services. Agencies pointed out that shared services don't need to be only infrastructure services. There are various areas of common needs, such as employee badges and processing credit card payments, which could be filled by common solutions for multiple agencies. They would not have to be one-size-fits solutions. There could be several solutions serving different profiles that would each apply to multiple agencies.

Security should provide services. In the current model, VITA's security staff set standards, provide oversight, and mandate actions by agencies. However, these security staff are not equipped to provide support to the agencies to meet the standards. Instead, the agencies individually develop services or pay Northrop Grumman to develop solutions. A number of the agencies want VITA's security staff to economically provide multiple levels of optional services, not just oversight.



Speed of delivering services. Agencies report that individual employees are often unproductive for days waiting to have their pcs repaired. The break-fix service level is too long. The majority of agencies cited the delays to set up email, passwords and computers for new employees can take weeks. Most agencies also mentioned that standing up new servers usually takes several months.

7.4 Interview Summary

Even though agencies vary widely in both the nature of their mission and their infrastructure requirements, many themes were common between agency interviews. The topics cited in at least 50 percent of all interviews are a good representation of the most common concerns.

The four most common concerns cited throughout all interviews are:

- 64% - Cost
- 61% - Silos/Difficulty to deal with partnership
- 57% - Flexibility/One-size-fits-all solutions
- 52% - Slow/Responsiveness

To support the interview process, and to deepen our understanding of agency concerns, Integris Applied also conducted an online survey focused on immediate delivery needs and capabilities required to meet future mission objectives. Survey questions were developed based on issues deemed most pressing to the agencies during the interviews. The survey is attached in the appendix of this report.

8. Agency Survey Feedback

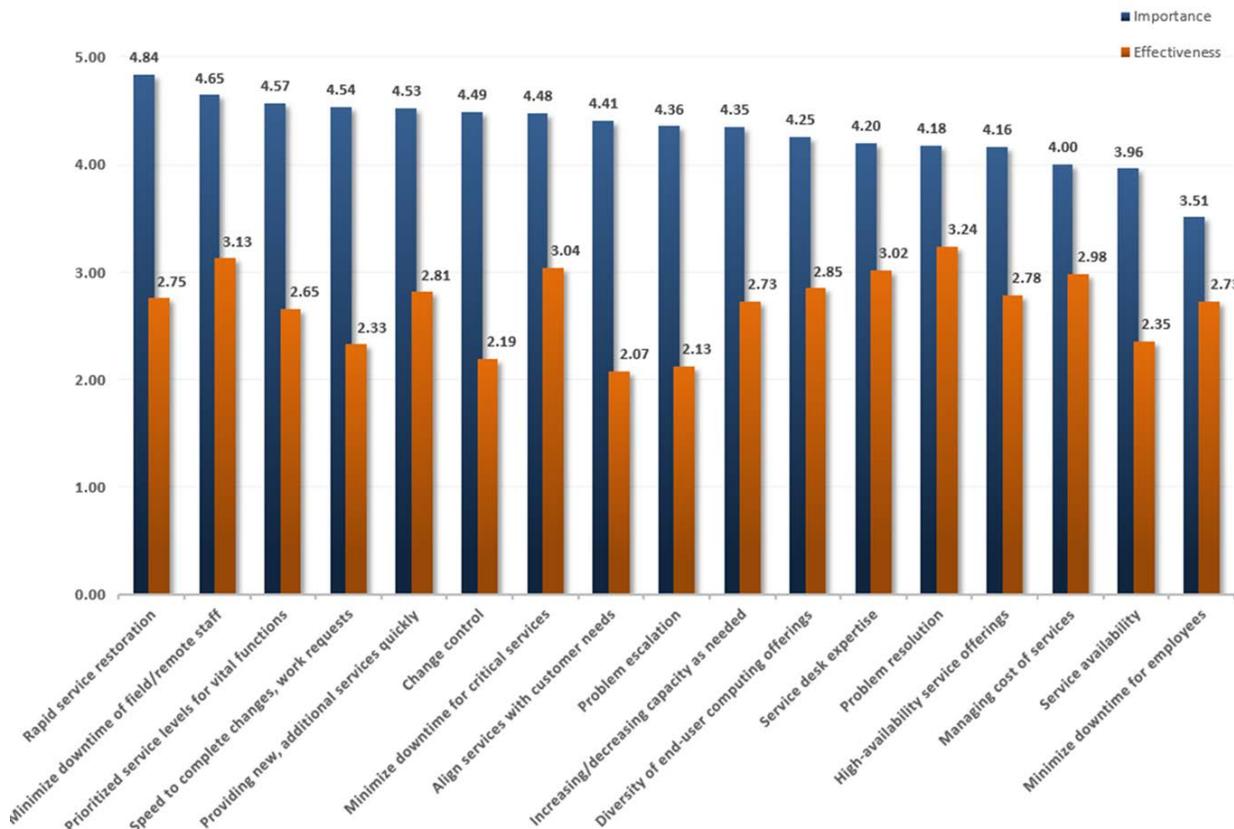
Surveys were sent to AITRs at 65 agencies with questions designed to confirm the feedback collected during the agency surveys. Completed responses were received from the following 54 agencies.

Secretariat	Agency	Secretariat	Agency	
Agriculture and Forestry	Department of Agriculture and Consumer Services	Health and Human Resources	Comprehensive Services for At-Risk Youth and Families	
	Department of Forestry		Department for Aging and Rehabilitative Services	
Administration	Compensation Board		Department of Health	Department of Health Professions
	Department of Elections		Department of Medical Assistance Services	Department of Social Services
	Department of General Services		Dept. of Behavioral Health and Developmental Services	Woodrow Wilson Rehabilitation Center
	Department of Human Resource Management		Department of Conservation & Recreation	Department of Environmental Quality
Commerce and Trade	Board of Accountancy		Department of Game and Inland Fisheries	Department of Historic Resources
	Department of Housing and Community Development		Marine Resources Commission	Virginia Museum of Natural History
	Department of Labor and Industry		Virginia Outdoors Foundation	Alcoholic Beverage Control, Department of
	Department of Mines, Minerals and Energy		Department of Corrections, Central Activities	Department of Emergency Management
	Department of Professional and Occupational Regulation	Department of Fire Programs	Department of Forensic Science	
	Department of Small Business and Supplier Diversity	Department of Juvenile Justice	Department of Military Affairs	
	Virginia Employment Commission	Department of State Police	Department of Veterans Services	
Virginia Racing Commission	Department of Aviation	Department of Motor Vehicles		
Education	Department of Education - Central Office Operations	Public Safety & Homeland Security	Department of Rail and Public Transportation	
	Frontier Culture Museum of Virginia		Department of Transportation	
	Jamestown-Yorktown Foundation		Motor Vehicle Dealer Board	
	State Council of Higher Education for Virginia			
	The Library of Virginia			
	The Science Museum of Virginia			
	Virginia Museum of Fine Arts			
Department of Accounts				
Finance	Department of Planning and Budget			
	Department of Taxation			
	Department of the Treasury			



The initial questions were designed to validate the importance of certain Partnership characteristics to the agencies, most notably service delivery. After validating the importance of a characteristic, agencies were asked how effectively the Partnership was delivering upon that characteristic. A display of the responses is shown in Figure 4. Fifteen of the 17 processes were given an “importance rating” of 4 or higher on a scale of 5. Notably, 5 of the characteristics scored low for effectiveness. These results are consistent with agency interviews that identified the impact of service delivery and cost as two of the most important areas of concern.

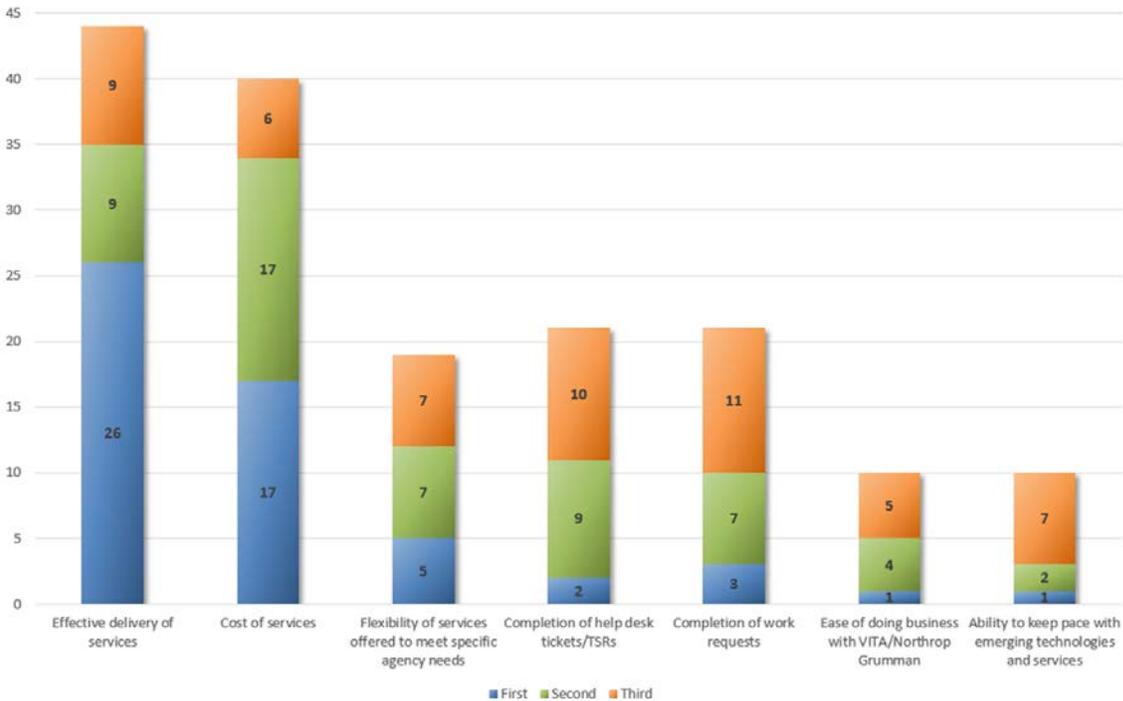
Figure 4 – Importance vs Effectiveness



We then asked agencies to choose the top three needs they have from the current service delivery model. The results supported the Hierarchy of Needs developed from the interviews – effective service delivery is the most important agency need, followed closely by cost. Figure 5 shows how frequently each area was named as first, second or third in importance.



Figure 5 – Relationship activities ranked in top 3 for importance



The next question asked agencies to identify which of the same areas depicted in Figure 5 cause the most difficulty for their agency. Figure 6 compares the rankings from Figure 5 with how problematic agencies considered the same items. Cost, completion of work requests, and flexibility of offerings emerged as the areas that are most problematic for the agencies.

Figure 6 – Most Important vs Most Problematic

Important	Problematic
1. Effective delivery of services	1. Cost of services
2. Cost of services	2. Completion of work requests
3. Flexibility of services offered to meet specific agency needs	3. Flexibility of services offered to meet specific agency needs
4. Completion of help desk tickets / TSRs	4. Effective delivery of services
5. Completion of work requests	5. Ease of doing business with VITA / Northrop Grumman
6. Ease of doing business with VITA / Northrop Grumman	6. Completion of help desk tickets / TSRs
7. Ability to keep pace with emerging technologies and services	7. Ability to keep pace with emerging technologies and services



After evaluating the relationships between importance and effectiveness, we turned our attention to the use of agency resources to support delivery needs. The agencies were asked if they diverted their IT staff to compensate for infrastructure service needs not met or provided by the current provider in ten areas identified during the agency interviews. The results, shown in figure 7, indicate that a significant number of agencies are compensating for weak service delivery or services not provided by the partnership. Over half of the agencies reported providing their own desktop support, support to remote and field staff, and Help Desk services.

Figure 7 – Diversion of agency staff

Role	Percent of Agencies
Desktop support	72.73%
Support for remote and field staff	61.82%
Help desk (infrastructure)	54.55%
Infrastructure monitoring	47.27%
Security (infrastructure)	45.45%
Conferencing services	38.18%
Bring your own device	36.36%
Data network	32.73%
Office phone systems	27.27%
Disaster recovery	27.27%

The survey also requested agencies to identify the top three areas of support they would need in the coming years. This free-form response identified the following areas.

Agency feedback during the interviews has been largely focused on lowering cost and improving service delivery. Results from the online survey corroborate this feedback. As noted in Figure 8, lower cost was cited by 19 agencies as their top area where additional support is needed. Flexibility also emerged as a priority for a future delivery model, and second only to cost.

Figure 8 – Identified areas of required support and number of responses

First named area	Second named area	Third named area
19 - Lower cost	12 - Improved flexibility	19 - Improved flexibility
7 - Better service deliver	9 - Lower cost	11 - Lower cost
7 - Keep pace with new technology	8 - Keep up with new technology	5 - Better service delivery
6 - other individual answers	6 - Better service delivery	4 - keep up with new technology
5 - Improved work request process	4 - Improved work request process	4 - other individual responses
4 - Improved flexibility	4 - Improved agency support	3 - Improved work request process
	3 - Other individual responses	



Agencies were also asked to identify those technologies they would find useful to implement their longer term strategies. Figure 9 displays the technologies the agencies expect to utilize in the foreseeable future on a scale of 1 to 5.

Figure 9: Future Technologies

Technology	Average
Teleworking (non-COV office buildings or facilities)	4.31
Security services	4.22
Cloud-based storage environments	4.15
Mobile solutions	4.14
Cloud-based environments for mission critical applications	4.11
Cloud-based development environments	3.96
Disaster recovery services	3.92
System monitoring	3.90
Data center services	3.88
Collaboration systems, such as SharePoint	3.74
Software as a service	3.67
Customer relationship management systems (CRM)	3.40
Bring your own device	3.20
Wearable technology	2.51

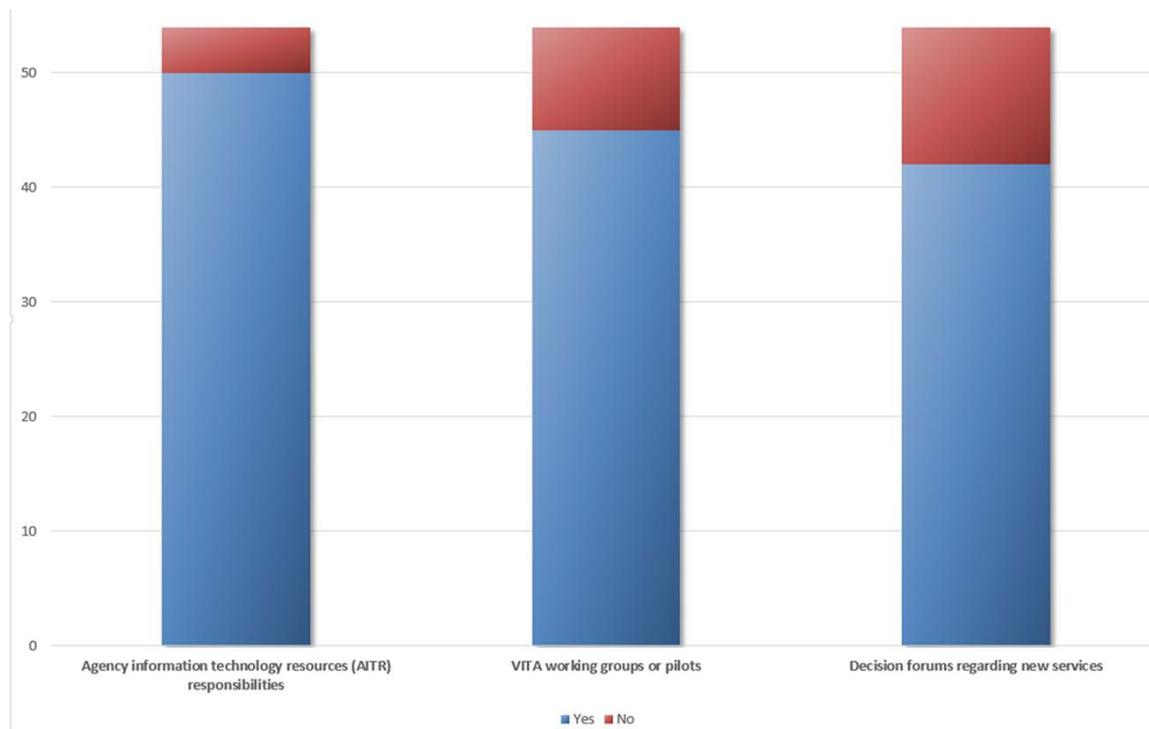
Finally, the survey asked agencies about the level of involvement agencies would like with VITA in the future. Any future delivery model must deploy a governance framework with substantial agency involvement. Understanding at what level the agencies desire to participate is important in setting expectations for their engagement with VITA and the enterprise in the future.

As shown in Figure 10 below, most agencies indicated that they wanted to be informed via their AITR, which is a legislative requirement and status quo. A majority indicated that they wanted to participate in working groups or pilots. This response demonstrates a high level of interest but the question was not balanced by an estimate of the amount of time and effort such involvement would be involved.

The last part of the question asked how many agencies would like to be involved in forums regarding new services, and 73 percent of agencies indicated that they would like to participate. As above, the questionnaire did not provide any estimate of the effort that would be required. However, the desire by the responding agencies to be involved is clear.



Figure 10: Agency Engagement with VITA



9. Final Agency Assessment Conclusions

With exceptions, most agencies did not want to provision their own infrastructure services. Instead, many agencies indicated their support for the role for a common infrastructure provider and acknowledged the need for oversight roles required of VITA. However, the majority of agencies feel considerable pain from working with the current delivery environment. While each agency has its own concerns, the interview process highlighted those themes that must be addressed in a new model:

1. Empathy for agency business operations
2. Existence of operational silos
3. Cost

Nearly all agencies suffer from the same service delivery issues and difficulty working with the Partnership. Differentiation amongst agencies was related to the amount of change each agency faces from budgetary stress or business change. Small agencies have additional needs due to lack of IT resources and the cost impact on supporting even routine oversight requirements from their small IT budgets.

Additional data from interviews and the online survey highlights the fact that agencies are focused on present needs versus future desires, and seek changes that alleviate pressures created by service delivery challenges. They seek more control over costs and would like more transparency into the components of their charges.



Appendix – Agency Survey Questions

IT Infrastructure Services Sourcing Strategy Survey

1) Please rate the importance of each of these operational processes to the efficient operation of your agency. Scale 1 to 5 or Not Applicable with 1 being “not at all” and 5 being “critical importance”

Answer Options

1. Align service specifications and standards with customer needs
2. Minimize service downtime for critical agency services
3. Minimize downtime for individual employees
4. Minimize downtime of field and remote staff
5. Increasing and decreasing computing capacity as needed
6. Speed to complete changes and work requests
7. Change control (avoiding changes during blackout periods, notice in advance of changes, change back-out plans...)
8. Providing new or additional services in a timely manner
9. Managing cost of services
10. Problem resolution
11. Problem escalation
12. Rapid service restoration
13. Service availability
14. Service desk (VITA Customer Care Center or VCCC) expertise
15. Prioritized service levels for vital business functions
16. Diversity of end-user computing platform offerings
17. High-availability service offerings

2) How effective is the current service provider at each of these same operational processes. Scale 1 to 5 or Not Applicable with 1 being “not effective” and 5 being “very/highly effective”

Answer Options

1. Align service specifications and standards with customer needs
2. Minimizing service downtime for critical agency services
3. Minimizing downtime for individual employees
4. Minimizing downtime of field and remote staff
5. Increasing and decreasing computing capacity as needed
6. Speed to complete changes and work requests
7. Change control (avoiding changes during blackout periods, notice in advance of changes, back out plans...)
8. Providing new or additional services in a timely manner



9. Managing cost of services
10. Problem resolution
11. Problem escalation
12. Rapid service restoration
13. Service availability
14. Service desk expertise
15. Prioritized service levels for vital business functions
16. Diversity of end-user computing platform offerings
17. High-availability service offerings

3) Please rank the importance of each of the following for your agency. With 1 being the most important, 2 the next most important, etc.

Answer Options

1. Effective delivery of services
2. Ease of doing business with VITA/Northrop Grumman
3. Completion of work requests
4. Completion of help desk tickets/TSRs
5. Flexibility of services offered to meet specific agency needs
6. Cost of services
7. Ability to keep pace with emerging technologies and services

4) Please rank the importance of each of the following for your agency. With 1 being the most important, 2 the next most important, etc.

Answer Options

1. Effective delivery of services
2. Ease of doing business with VITA/Northrop Grumman
3. Completion of work requests
4. Completion of help desk tickets/TSRs
5. Flexibility of services offered to meet specific agency needs
6. Cost of services
7. Ability to keep pace with emerging technologies and services

5) Have you had to supplement Infrastructure Services because your needs were not being met? Please indicate Yes, No or Not Applicable.

Answer Options

1. Security (infrastructure)
2. Help desk (infrastructure)
3. Desktop support
4. Support for remote and field staff
5. Bring your own device

6. Infrastructure monitoring
7. Conferencing services
8. Office phone systems
9. Data network
10. Disaster recovery

6) Please identify the types of new services, technologies or support that are most likely to be needed by your agency in the next few years. Scale 1 to 5 or Not Applicable with 1 being “not at all” and 5 being “critical importance”

Answer Options

1. Data center services
2. Cloud-based development environments
3. Cloud-based storage environments
4. Cloud-based environments for mission critical applications
5. Security services
6. Disaster recovery services
7. Software as a service
8. Mobile solutions
9. Wearable technology
10. Bring your own device
11. System monitoring
12. Customer relationship management systems (CRM)
13. Collaboration systems, such as SharePoint
14. Teleworking (non-COV office buildings or facilities)

7) Tell us what you need to support your agency’s strategy in the coming years. What are the 3 characteristics you would most like to see in a future delivery model? For example: Lower costs, ability to keep pace with emerging technologies and services, flexibility, improved work request delivery, etc.

Answer Options

1. Characteristic 1
2. Characteristic 2
3. Characteristic 3

8) Please answer some questions about your agency’s involvement with VITA. Our agency WANTS TO BE actively engaged in...

Answer Options

1. Agency information technology resources (AITR) responsibilities
2. VITA working groups or pilots
3. Decision forums regarding new services



9) Please answer some questions about your agency so that we can identify trends for agencies with different business needs. Which regulatory requirements apply to your agency?

Answer Options

1. HIPAA
2. CJIS
3. IRS1075
4. PCI
5. SSA

10) VITA believes Infrastructure Services could/should enhance the means by which your agency interacts with stakeholders or includes them as part of your processes (e.g. business partners or other agencies), as well as consumers of your services. Please indicate the types of stakeholders or customers below.

Answer Options

1. HIPAA
2. CJIS
3. IRS1075
4. PCI
5. SSA
