



2013 - 2016

Strategic Plan

Office for Information Technology



Message from the Chief Information Officer

Shortly after Governor Corbett took office in 2011, the Office of Administration/Office for Information Technology (OA/OIT) established a comprehensive technology strategic plan. In 2013, two years after that plan was drafted, we find that significant progress has been made toward many of the original goals in the plan. A few examples of this progress include:



- Increased Transparency and Public Participation. Pennsylvanians have been provided greater transparency into the operations of the commonwealth through the launch of the PennWATCH website in December 2012. This citizen-friendly website provides detailed information on the state budget, spending, revenue, employees and the performance of our state government.
- Formation of Strategic Partnerships. As appropriate, we have continued to leverage relationships with key external organizations. For example, the commonwealth is partnering with Harrisburg University to prepare our next generation of information technology leaders through the Certified Government CIO and Government Information Technology Management programs.
- Enhanced Delivery of Government Services. Pennsylvanians have high expectations for the service they receive from state government. As part of an ongoing effort to ensure we meet these expectations, we have started an effort to modify Pennsylvania's core websites to provide more interactive services to our citizens and businesses.
- Promotion of Innovation and Transformation. Pennsylvania has been a center of innovation since its earliest days and that commitment to innovation and transformation is core to our mission at OA/OIT. Recent awards from external organizations have affirmed that commitment. The commonwealth received five Laureate awards in 2013 from the Computerworld Honors Program for accomplishments at the Department of Public Welfare, the Pennsylvania Justice Network, and the Department of Labor and Industry. In addition, Pennsylvania received a top grade (A-) in the 2012 Digital States Survey sponsored by the Center for Digital Government.

We have achieved these milestones while continuing to provide high quality services and operate government more efficiently.

Given these many accomplishments, it became clear that the strategic plan needed to be refreshed to include updated goals and initiatives to set the direction for the commonwealth



information technology community. This updated plan is based on the Governor's priorities and reflects input from agency CIOs, agency managers and staff and staff within OA/OIT.

I look forward to working with agencies and our partners to ensure that the Commonwealth of Pennsylvania remains a recognized leader in providing innovative services and technologies that support the needs of our citizens.

Sincerely,

Tony Encinias

Deputy Secretary for Information Technology/

Chief Information Officer

Commonwealth of Pennsylvania



The key themes heard from those interviewed regarding OA/OIT's core mission. Larger font represents words that were repeated more often.



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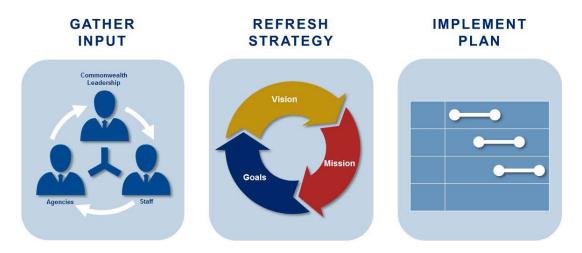
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Introduction

This document is the refreshed Information Technology Strategic Plan for the Commonwealth of Pennsylvania for the years 2013 - 2016. Based on Governor Corbett's priorities, it reflects input from agency CIOs, agency information technology managers and staff and staff within the Office of Administration, Office for Information Technology (OA/OIT). The purpose of the plan is to serve as a strategic framework for the commonwealth technology community and decision makers. It includes vision and mission statements that describe the commonwealth's aspirations regarding its use of technology and the statement of purpose for the OA/OIT. The plan also includes the commonwealth's information technology strategic goals and strategic initiatives. The strategic goals define the expected results from the commonwealth technology community's efforts, while the strategic initiatives describe how the goals are achieved.

The process we followed to develop this plan included gathering input from key stakeholders, refreshing our strategy based on that input and, as you will read in this document, the identification of the strategic initiatives required to make the goals a reality.

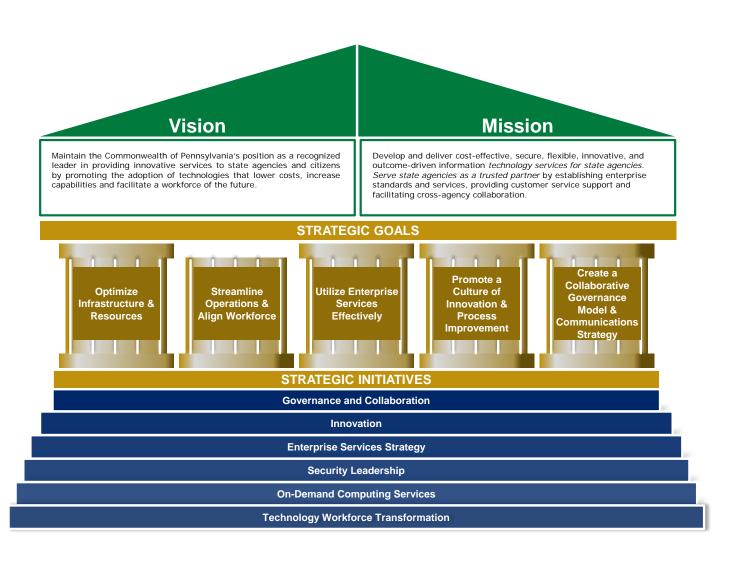


The Information Technology Strategic Plan has been refreshed based on input from key stakeholders to set the commonwealth's direction for 2013 - 2016.



Strategic Framework

The commonwealth's plan for information technology is based on a strategic framework consisting of vision and mission statements, strategic goals and strategic initiatives. The strategic goals support the vision and mission by defining the expected results from the commonwealth technology community's efforts. The initiatives provide the detail regarding how the goals are achieved.



Pennsylvania's Information Technology Strategic Framework



Vision Statement

The vision statement describes our aspirations for information technology in Pennsylvania. The vision statement provides our employees, agencies and citizens an overarching view of where the commonwealth would like to be regarding the use of technology.

Vision

Maintain the Commonwealth of Pennsylvania's position as a recognized leader in providing innovative services to state agencies and citizens by promoting the adoption of technologies that lower costs, increase capabilities and facilitate a workforce of the future.

Mission Statement

As the central information technology organization for the executive branch, OA/OIT has a clear and enduring statement of purpose that serves as a guide and inspirational tool, defining what the organization is striving to achieve.

Mission

Develop and deliver cost-effective, secure, flexible, innovative, and outcome-driven information technology services for state agencies. Serve state agencies as a trusted partner by establishing enterprise standards and services, providing customer service support and facilitating cross-agency collaboration.



Strategic Goals

To fulfill our refreshed vision and mission, OA/OIT has established five strategic goals. These goals drive the planned efforts of the commonwealth technology community and are also used for planning, prioritizing and coordinating efforts across our state organizations:

- Optimize Infrastructure and Resources
- Streamline Operations and Align Workforce
- Utilize Enterprise Services Effectively
- Promote a Culture of Innovation and Process Improvement
- Create a Collaborative Governance Model and Communications Strategy

The Commonwealth of Pennsylvania's information technology function serves an incredibly wide range of needs – from citizens executing simple transactions, to county governments managing their complex financial operations, to local law enforcement officers accessing time-sensitive public safety data. The rate of change in information technology means that it is a challenge to develop a comprehensive set of goals to drive all these priorities. However, it is for those exact reasons that we must not only have strategic goals – but use them on a regular basis to drive our decision-making and priorities in information technology. The achievement of our mission and the effective stewardship of taxpayer resources demands that our work be driven by goals. At the same time, an energized staff, quality work products and superior service delivery underlie the delivery of information technology services for the commonwealth.

In the following pages, we describe each goal in more detail, including the expected outcomes that result from achieving the goal.



The commonwealth has established five strategic goals to fulfill its vision and mission.



Optimize Infrastructure and Resources

Pennsylvania has and will likely continue to operate in a constrained fiscal environment. These fiscal pressures, combined with increased agency demands for technology infrastructure and support, require that the commonwealth continue to optimize its information technology infrastructure and resources. By investing in solutions that optimize infrastructure and resources – including our personnel – the commonwealth prepares to adapt to the changing demand for its technology services.

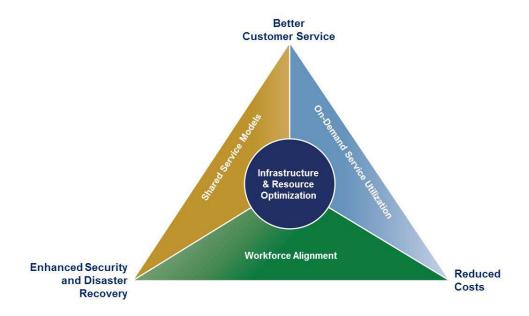
The commonwealth has already centralized much of its core information technology infrastructure and implemented a number of shared service models. However, more must be done. Major infrastructure components such as servers, storage systems, data communication connections, power



The expected outcomes of our strategic goal Optimize Infrastructure and Resources

- Increased Capacity Utilization
- Increased Service Levels
- Enabled Enterprise Disaster Recovery System
- Increased Agency Satisfaction
- Reduced Time to Delivery
- Competitively Priced Services to Agencies
- Decreased Security Risk

supplies, environmental controls and security devices should be viewed as "utilities" provided on demand. This means that computing capacity is made available on an asneeded basis, much like other utilities (electricity, water, etc.). For example, we recently launched a procurement for computing services that will leverage a capacity-on-demand model in which agencies consume resources as a service and pay only for what they use. The net result of this new innovative computing model is better customer service to commonwealth agencies, including enhanced security and disaster recovery services, at a reduced cost.

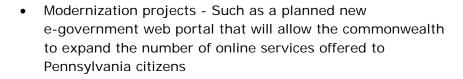


Optimized infrastructure and resources result in better customer service, reduced costs, and enhanced security and disaster recovery services.



Streamline Operations and Align Workforce

As OA/OIT examines ways to drive efficiencies and better serve agencies, the commonwealth's information technology workforce must align to meet the evolving needs of stakeholders, the changes in the commonwealth's portfolio of services and the expected shifts in our delivery models. Our plan to implement a new on-demand computing model is just one example of major changes that are driving the need for workforce transformation. Other drivers of workforce transformation include:





The expected outcomes of our strategic goal Streamline **Operations and Align** Workforce are:

- Increased Worker Morale
- Reduced Employee Turnover
- · Increased Skill-Level of **Practitioners**
- Created Succession Plans
- Formalized Career Paths
- Transitioned People and Resources
- Centers of Excellence Which may include leveraging core capabilities in one agency to support needs in another agency
- Movement toward Software as a Service The movement to on demand software hosted in the cloud

These technology trends, as well as challenges such as the large percentage of the technology workforce nearing retirement age and changes being discussed in retirement and benefit packages, drive the commonwealth to align its workforce to achieve the goals in this plan. We need to train and deploy staff in a way that addresses the functions, specialties and key tasks required under these new ways of operating.

The commonwealth will work with agency information technology staff as well as human resources professionals to design the technology workforce of the future. In addition to the likely need to train and deploy staff in new ways, agencies continue to face significant challenges in recruiting and retaining information technology personnel. The related initiative will consider current strategic technology initiatives and the potential future landscape.

> Building the information technology workforce of the future must include addressing the drivers for the changes to realize the intended benefits of such changes.





Utilize Enterprise Solutions Effectively

In recent years, the commonwealth has made significant investments in a number of solutions and toolsets that can be leveraged across agencies. We must ensure that we use our existing solutions more effectively and develop approaches to identify and deploy other enterprise shared services. OA/OIT will work with agencies to assess their current capabilities and resources. Where a solution or strong capability exists in an agency that is not found elsewhere, the agency will be encouraged or incented to share that resource with other agencies. In some cases, a center of excellence may be created to deliver the solution or capability as a service across the commonwealth. This



The expected outcomes of our strategic goal Utilize Enterprise Solutions Effectively are:

- Increased Service Levels
- · Increased Agency Satisfaction
- Increased Agency Ownership
- Reduced Time to Delivery
- Increased Cost Savings
- Decreased Security Risk

approach promotes the sharing and mutual-use of high-impact solutions and capabilities within other state agencies and results in financial and service-level benefits for the commonwealth.

The opportunity to create a center of excellence within an agency incents strong service performance and encourages leadership in service delivery. As a result of this strategy, high value information technology services are distributed throughout the commonwealth and opportunities for career growth are made available to our staff.



Effectively utilizing enterprise solutions involves the sharing of key capabilities, mutual use of high impact solutions and establishing centers of excellence.



Process Improvement

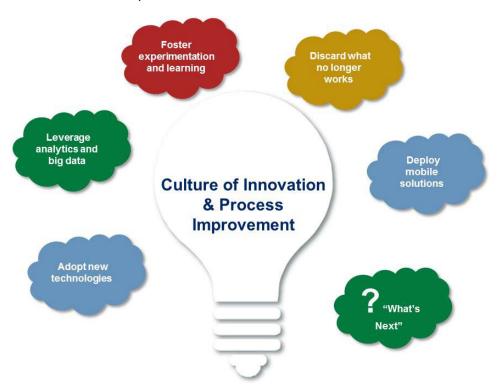
Innovation has been a key tenet of Governor Corbett's administration, as evidenced by the newly created Governor's Innovation Office. In achieving our information technology goals, Pennsylvania promotes a culture of innovation and process improvement. We continue to build a culture where thinking and experimenting are encouraged. To continuously innovate, agencies, OA/OIT and other stakeholders will connect and communicate more openly, easily and effectively and share best practices and ideas.

Innovation is contagious. It helps the commonwealth select concepts and technologies that convert powerful ideas into



- Reduced Time to New **Technology Adoption**
- Enhanced Service Delivery
- Increased Innovation Submissions
- Increased Innovation **Achievements**

solutions that improve how we function. Discovering and creating new technologies spurs the development of valuable products, processes and services – which translate into better services for Pennsylvania citizens. The implementation of mobile computing technology and the increased use of "big data" analytics are examples of innovation that the commonwealth is exploring. The commonwealth also continues to look to the private sector and other government entities for examples of innovative solutions.



A culture of innovation results in the creation of adaptive strategies, identification of new services and the adoption of emerging technologies that can change operations and generate significant value.



Create a Collaborative Governance **Model and Communications Strategy**

The goals and initiatives described in this plan are ones that can only be achieved through collaboration. To that end, OA/OIT and agencies must make decisions together. The results reached through collaboration and collective governance are more far-reaching and enduring than decisions made by a single agency. A compelling future vision and leadership presence, a participatory management style and positive organizational communications strengthen our performance.



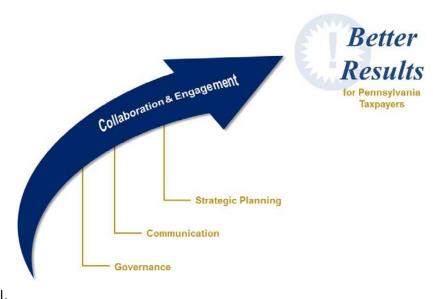
The expected outcomes of our strategic goal Create a **Collaborative Governance Model and Communications** Strategy are:

- Increased Agency Satisfaction
- Reduced Agency Waivers **Increased Agency Ownership**
- Increased In-Person Communication

Open and collective governance offers many benefits: Areas of redundancy across the commonwealth are more easily identified; agencies and OA/OIT gain insight into the operations and outcomes of other business units; and agencies benefit from each other's successes and failures. This open approach allows us to identify opportunities to create synergies, converge programs and increase security governance.

Strategic planning within the agencies also supports the relationship each agency has with OA/OIT. The strategic planning process enables agencies to determine the direction of the organization, their current position and possible opportunities for partnership with OA/OIT and other commonwealth agencies.

A robust communication program also helps the commonwealth in many ways. Communication improves service delivery, agency relations and employee morale - in fact, proactive, frequent and two-way communications impact virtually every facet of the commonwealth's operations. If commonwealth employees are informed and engaged, communication with other enterprise stakeholders is likely to be improved as well.



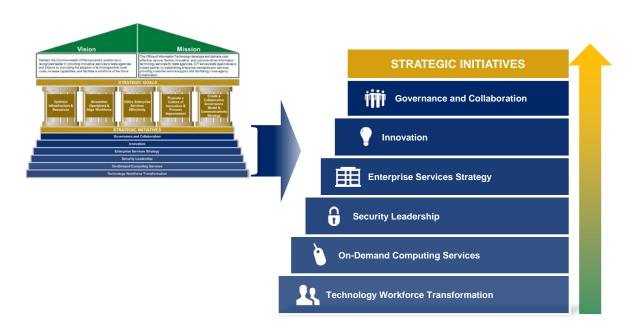
Collaboration and engagement lead to better results for the commonwealth and its taxpayers.



Strategic Initiatives

The commonwealth's strategic goals are furthered through the implementation of key strategic initiatives, described in this section. The strategic framework displayed below shows the relationship of the initiatives to each other. Starting at the bottom of the framework, transformation of the workforce provides the foundation for achievement of our strategic goals and the long-term implementation of the other initiatives. An agile, focused workforce is needed to implement and support a new "utility"-like model for computing services, which will be launched to provide better on-demand services at reduced cost, which is the next strategic initiative. However, this new on-demand computing model is not successful without a secure technological infrastructure – displayed below as the middle layer in the framework. Next, the security leadership initiative highlights investments that continue to improve the commonwealth's security solutions, followed by innovation that propels the commonwealth forward to develop the best suite of products and enterprise services for our customers. Finally, all of these efforts are coordinated through a collaborative governance process that oversees all of the initiatives.

The strategic initiatives listed below should be used as a framework for commonwealth agencies to align their technology initiatives, approaches and major objectives. A description of OA/OIT's approach to meeting the strategic initiatives is provided below and will help drive the tactical technology planning efforts. Agencies may use OA/OIT's strategic initiative approach as their guide to formulate strategic initiative approaches and activities that best fit their agency to help ensure the alignment of commonwealth and agency priorities.



The commonwealth's strategic goals are achieved through the six initiatives. The initiatives build upon each other, with Technology Workforce Transformation serving as the foundation for the other initiatives.



Technology Workforce Transformation

The Technology Workforce Transformation initiative aligns to the following strategic goals: Streamline Operations and Align Workforce, Create a Collaborative Governance Model and Communications Strategy and Create a Culture of Innovation and Process Improvement.



The commonwealth is preparing its technology and human resource professionals to meet the demands and expectations of the technology environment of the future. At the same time, agencies are facing significant challenges in recruiting and retaining information technology personnel. The commonwealth needs to train and deploy staff to address the functions, specialties and key tasks required under the new on-demand computing model, other enterprise projects and changing citizen expectations. This initiative seeks to enhance the current human resource environment and consider the future technology landscape to define potential future end states. This group of projects entails working collaboratively with agency technology and human resource professionals to address current challenges and to identify future challenges to prepare our technology workforce to successfully support the commonwealth now and into the coming years.

See chart on page 15.



OA/OIT Approach to Meet Strategic Initiative: Technology Workforce Transformation

Description	Expected Timing
Assess and Invest in Training Programs Provide access to the proper training, certification and learning opportunities based on proven frameworks, such as ITIL, to prepare our staff for the nature of work required within new service delivery models.	Intermediate Term
Align Information Technology Positions to our Strategic Direction Evaluate the HR impact of our strategic initiatives to determine if new classifications and opportunities need to be created for IT employees.	Intermediate Term
Reform Human Resources for Information Technology Positions Build a human resources support structure that enables the commonwealth to find and recruit employees with the appropriate skillsets. Deploy performance management approaches that motivate and retain talented employees and incent strong service delivery.	Longer Term



On-Demand Computing Services

The On-Demand Computing Services initiative aligns to the following strategic goals: Optimize Infrastructure and Resources, Utilize Enterprise Services Effectively and Create a Culture of Innovation and Process Improvement.



The on-demand computing services initiative allows OA/OIT to efficiently meet fluctuating demands in technology capacity. The commonwealth will replace the expiring Data Powerhouse contract with a new vendor agreement for computing services that uses a capacity-on-demand model in which agencies consume resources as a service and pay only for the resources that are used. The result of this new innovative computing model is better service to the agencies, increased availability, enhanced security services, state-of-the-art disaster recovery services and efficient use of taxpayer dollars.

See chart on page 17.



OA/OIT Approach to Meet Strategic Initiative" **On-Demand Computing Services**

Description	Expected Timing
Procure On-Demand Computing Services This effort is underway to complete evaluation and negotiations to select a vendor to provide on-demand computing services.	Immediate Term
Implement Standard Configuration Management Processes In conjunction with the switch to on-demand computing services, implement standard configuration management processes consistent with ITIL standards.	Intermediate Term
Implement Enterprise Disaster Recovery Approach In conjunction with the switch to on-demand computing services, implement a comprehensive new approach to disaster recovery.	Intermediate Term
Transition to On-Demand Computing Environment Closely aligned with information technology workforce transformation, this activity involves an analysis of gaps between the existing and future computing environments, and planning for implementation of the tasks and activities needed to complete the transition.	Longer Term



Security Leadership

The commonwealth is a leader among state governments in protecting its data and applications against external and internal threats. This initiative allows OA/OIT to continue to enhance the security infrastructure of the commonwealth and help protect against threats. Strengthening the ability to identify and protect against security threats through a combination of robust controls, intelligent reporting and security management tools is critical for the commonwealth's continued protection.

Alignment to Strategic Goals



The Security Leadership initiative aligns to the following strategic goals: Optimize Infrastructure and Resources, Streamline Operations and Align Workforce, Utilize Enterprise Services Effectively and Create a Culture of Innovation and Process Improvement.

See chart on page 19.



OA/OIT Approach to Meet Strategic Initiative: **Security Leadership**

Description	Expected Timing
Realign Security Governance with Agencies Develop a security governance approach that aligns with the agencies' needs while still ensuring that required information is shared across the commonwealth.	Immediate Term
Expand Security Awareness Training Offer expanded training that reinforces to commonwealth staff how to avoid threats and reduce operational risk.	Immediate Term
Update Enterprise-Wide Security Strategy Review and update the existing security strategy for the commonwealth, including resources and policies, while continuously managing vulnerabilities, addressing threats and assessing agency security risks.	Intermediate Term
Implement Enterprise Security Services Develop enterprise security services that include identity and access management.	Longer Term



Enterprise Services Strategy

The Enterprise Services Strategy initiative aligns to the following strategic goals: Optimize Infrastructure and Resources, Utilize Enterprise Services Effectively and Create a Culture of Innovation and Process Improvement.



Developing an enterprise services strategy helps the commonwealth drive both innovation and efficiency. Agencies that serve as centers of excellence are able to provide the highest quality services while continuously improving their operations. The execution of our enterprise services strategy enables us to align the commonwealth's enterprise portfolio with the capabilities and available resources of our state agencies.

See chart on page 21.



OA/OIT Approach to Meet Strategic Initiative: Enterprise Services Strategy

Description	Expected Timing
Update Enterprise IT Service Management (ITSM) Tool Suite Transition to a new software platform to provide a high quality ITSM tool suite to commonwealth agencies and their users.	Immediate Term
Develop Shared Services and Center of Excellence Strategy Develop a strategy to more effectively utilize commonwealth solutions and capabilities through shared services and the creation of centers of excellence.	Intermediate Term
Enhance Utilization of Integrated Enterprise System (IES) Ensure that OA/OIT and the agencies have an understanding of the full capabilities of our Integrated Enterprise System (IES) and work with agencies to identify how it can be better leveraged to deliver new functionality or improve existing operations.	Intermediate Term
Monitor Project Portfolio Health Establish common standards and mechanisms for evaluating and monitoring the health of projects across the commonwealth.	Intermediate Term
Update Enterprise Email Services Email is critical to the commonwealth agencies and has been a centralized service for over a decade. The next generation of email services must be delivered to support new requirements, ensure quality service and be cost effective.	Intermediate Term
Update Enterprise Portal, Agency Sites and Intranets to New Technology Platforms Transition to new technology platforms to stay on top of current trends so that the agencies can continue to provide high quality services to their users.	Longer Term



Innovation

The Innovation initiative aligns to the Create a Culture of Innovation and Process Improvement strategic goal.



The innovation initiative focuses on the creation of growth strategies, new services and the potential adoption of mobile, "big data" analytics, and other emerging technologies that can change operations and generate significant value for agencies and the citizens of Pennsylvania. These key activities encourage a holistic, multidisciplinary framework that enables OA/OIT, which serves as the commonwealth's research and development unit, to take a strategic approach to innovation.

See chart on page 23.



OA/OIT Approach to Meet Strategic Initiative: Innovation

Description	Expected Timing
Create Information Technology Community Innovation Programs and Partnerships	Intermediate Term
This initiative enables OA/OIT and agencies to partner with each other and/or the private sector and higher education organizations to develop innovative business solutions.	
Adopt Mobile Technology	Intermediate
The commonwealth is moving toward adopting mobile technology solutions to meet the evolving expectations of our citizens. This technology will improve operations for our workers, partners and citizens. Our mobile technology must include our operating environment including applications, hardware, software and security.	Term
Establish a Wireless Strategy	Intermediate
As the commonwealth further adopts mobile technologies, applications and bring your own device (BYOD), we need to establish a coordination plan to address agency wireless needs and the associated infrastructure.	Term
Implement Data Governance Strategy	Intermediate
The use of open data and analytics and "Big Data" – large, complex and sometimes unstructured data sets - can provide commonwealth agencies with additional insight into ways to increase their operational efficiency and customer service.	Term
Collaborate with Other States	Longer Term
Cross-state collaboration focused on the sharing of best practices, user preferences and performance enhancement strategies can provide low-cost improvement opportunities for the commonwealth.	



Governance and Collaboration

The Governance and Collaboration initiative aligns to the following strategic goals: Optimize Infrastructure and Resources, Utilize Enterprise Services Effectively, Create a Collaborative Governance Model and Communications Strategy.



With the complexity of the commonwealth's information technology solutions and the growing volume of data managed by the commonwealth, governance and collaboration are as critical as ever. This initiative is designed to coordinate the investments and policies of the commonwealth information technology community. Central to governance and collaboration are the concepts of leadership, authority, accountability and transparency. Effective governance and collaboration also enable the commonwealth's agency CIOs to serve as empowered leaders to ensure efficient and effective collaboration across state agencies.

See chart on page 25.



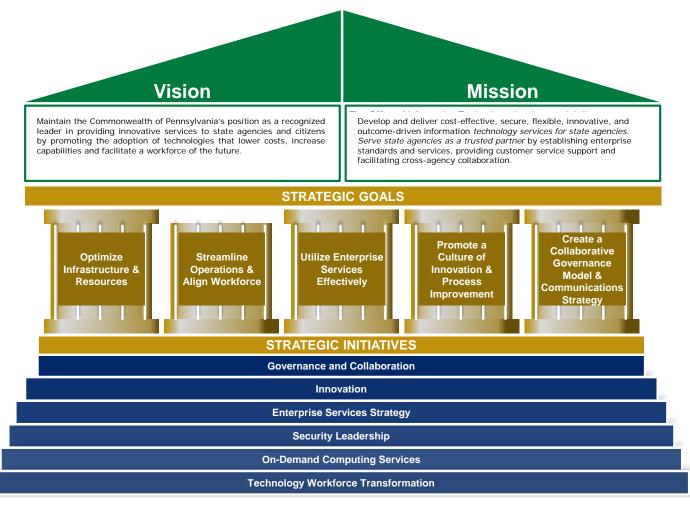
OA/OIT Approach to Meet Strategic Initiative Governance and Collaboration

Description	Expected Timing
Assess Governance Structure The governance structure provides a place at the table for agency CIOs to formalize and ensure equality in decision making. The structure should ensure agency CIOs have the means for making important decisions, and making those decisions the right ones. Agency CIO empowerment increases productivity and leads to a heightened quality of work life.	Immediate Term
Develop a Communication Strategy for OIT Develop and implement tailored communications and feedback mechanisms through facilitation and advanced planning with staff and stakeholders based on a common understanding of the future vision, mission and goals.	Immediate Term
Update the Interactive Agency Strategic Planning Process Facilitate the strategic planning process for agencies to drive the development of agency-specific strategies and alignment of resources to shared goals.	Immediate Term
Form Functional and Technology User Groups Form user groups for commonwealth applications such as IES and other cross-functional areas.	Immediate Term
Create a CIO Handbook The CIO handbook is a collection of instructions, processes and procedures intended to provide on-the-spot guidance for CIOs on topics ranging from key contacts to procurement and contracts and other standards of service.	Intermediate Term
Automate Information Technology Bulletin Review Process Create an approach that formalizes policies for establishing, reviewing, and approving processes for Information Technology Bulletins.	Longer Term
Implement Vendor Roundtables at Lower Levels Create opportunities for vendors to share information about products and trends with commonwealth staff at all levels.	Longer Term



Summary

This plan includes an updated set of goals and initiatives to set the direction for the commonwealth's information technology community. This plan is not just for OA/OIT but for the entire commonwealth technology community, including our vendor partners. It is based on Governor Corbett's priorities, as well as input from a variety of stakeholders solicited through a collaborative process. With this plan, a new technology direction is established for the Commonwealth of Pennsylvania for the next three years. OA/OIT looks forward to working with our partners in achieving our vision, mission and goals through our strategic initiatives.



The strategic framework sets the technology direction for the commonwealth.

