

**THE GLOBAL DIGITAL ECONOMY
AND THE BOLD DOMINION**

**COMMONWEALTH OF VIRGINIA
STRATEGIC PLAN FOR TECHNOLOGY**

2002-2006

**The Honorable George C. Newstrom
Secretary of Technology**

September 2002

A MESSAGE FROM THE GOVERNOR

Most cities and states are recognized for excellence in a particular area—New York City for fighting crime, Norfolk for its shipping industry, Illinois for its public transportation systems, San Diego for its health initiatives. In the area of technology, Washington is known as a pioneer in digital government, California for developing a single look and feel for all state web sites, Pennsylvania for “PA Open for Business,” Alaska for digital democracy. These cities and states have worked aggressively to achieve their goals and are often cited as models and best practices for others.



Known as the Internet Capital, Virginia has worked deliberately to take advantage of the prosperity of the information age and has many “firsts” and “bests” to its credit, including the first state Web portal, the first Cabinet-level Secretary of Technology, the best motor vehicles services program, the first to provide real time election results, the first to offer a suite of services through mobile devices and offer live help online. Just last month, the Center for Digital Government and Government Technology magazine named three Virginia programs “best of breed,” including the Regulatory Town Hall; Absentee Ballot Tracking; and eVA, Virginia’s electronic procurement solution. The Department of Taxation has won numerous national awards for its innovative Tax Partnership with American Management Systems that has resulted in improved customer service, unprecedented access to government, organizational efficiency, and a world-class suite of Web-based applications.

I am pleased to present another Virginia’s first—our statewide technology strategic plan. Though it is not the first technology strategic plan issued by a state, I contend that it is the best. Whereas others have focused on a single, landmark initiative, Virginia is launching a comprehensive, multi-faceted campaign to improve technology in the Commonwealth, attract investments to our growing technology-based economy, revolutionize government service delivery to our Virginia customers, and, most importantly, provide significant cost savings to assist in closing the unprecedented \$5.3 billion budget crisis I inherited.

As a key ingredient to do what is necessary to balance the budget and ensure fiscal integrity, my plan for technology in Virginia calls for increased cooperation across the Commonwealth—from agencies, localities, and the business community. Working together we can add to Virginia’s list of “firsts” and “bests.” We can save taxpayers millions of dollars while providing a more efficient, effective, and convenient state government. We can increase broadband deployment and rural economic development. We can consolidate and strengthen the information technology infrastructure within the Commonwealth, leverage the state’s buying power, and overhaul state administrative systems. We can fundamentally change the way technology is planned, funded, and accounted for.

Completing any one of these initiatives furthers Virginia’s role in the global digital economy and merits national and international attention. Completing all of these initiatives secures Virginia as a leader in the rapidly growing and evolving global digital economy while generating considerable cost-savings and cost-avoidance. In this time of fiscal crisis, technology is critical to our success, and is at the heart of my plan to balance Virginia’s budget and fulfill my commitment to the people of Virginia.

I urge you to support and participate in the execution of this plan to ensure Virginia thrives in the global digital economy—an economy marked by fiscal integrity, improved public education, economic growth throughout the Commonwealth, and a strengthened quality of life for all Virginians.

Mark R. Warner

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ENABLING THE VISION

INTRODUCTION

The global digital economy is the result of decades of technological innovation, an increasingly networked economy, and the resulting breakdown of traditional geographic borders. More than the shift from a manufacturing- or product-oriented economy to one built on information and services, the global digital economy presents a significant cultural shift and a demand for fundamental change in communications and relationships, commerce, and government.

In the global digital economy and its “anytime, anywhere” nature, Virginia no longer competes on a regional, state, or national basis—it competes in the world marketplace, with Asia, Europe, South America, and Africa. Virginia cannot afford to step down as a leader in effective electronic government or curb its efforts to facilitate a technology-based economy.

Furthermore, the Virginia economy, shaken by the terror attacks and the rise and fall of the dotcom industry, demands increasingly careful stewardship of public monies and the public trust. Facing a \$3.8 billion budget gap over the next three years, Virginia’s 69th Governor Mark R. Warner called for across-the-board cuts and worked in partnership with the state legislature to shore up Virginia’s budget. Nonetheless, unprecedented revenue shortfalls and corporate accounting scandals have deepened the fiscal crisis by an additional \$1.5 billion.

Governor Warner has taken several critical steps. In addition to across-the-board cuts of up to 23 percent, establishing a process for setting government priorities, and taking concrete steps to control state spending, he has formed the Governor’s Commission on Efficiency and Effectiveness, chaired by former Governor L. Douglas Wilder. The “Wilder Commission” is charged with developing recommendations for streamlining and consolidating state government agencies and services to ensure government is cost-effective and efficient, particularly in the areas of management, procurement, and technology.

The initial recommendations of the Wilder Commission call for streamlining the procurement process to leverage the state’s buying power, developing a performance management model for state employees, and consolidating technology infrastructure. The Commission’s final report is expected in late 2002. The substance of Virginia’s strategic plan for technology in the Commonwealth stems from and is aligned with the discussions and initial recommendations of the Commission and its Information Technology Conceptual Analysis Team.

Secondly, Governor Warner appointed George C. Newstrom Secretary of Technology—one of only two cabinet-level technology officials in the nation. In addition to the Secretary’s duties to increase

technology-based economic development throughout the state and to serve as the Chief Information Officer for the Commonwealth, Governor Warner charged Secretary Newstrom with developing Virginia's first comprehensive strategic plan for technology based on his vision.

Virginia established the Office of the Secretary of Technology in 1998 to begin providing world-class technology leadership in support of Virginia's prominence in the 21st century economy. Today, Virginia enjoys a two-fold prominence: as one of the vanguard states in the use of information technology to improve government operations and as the Internet capital of the world.

GOVERNOR'S VISION FOR TECHNOLOGY IN THE COMMONWEALTH

Governor Warner is deeply committed to effective and efficient use of information technology by state government, a technology-friendly business climate across the Commonwealth, and economic development of Virginia's technology industry as a whole in the world marketplace. His vision is to ensure Virginia is competitive in and a leader of the rapidly evolving global digital economy. To that end, he provided the following three imperatives to guide the strategic planning effort:

1. Develop the role of the Chief Information Officer of Virginia so that the Commonwealth's technology resources are most effective, efficient, and meet the needs of our customers—the citizens of the Commonwealth of Virginia.
2. Ensure all of Virginia shares in the growth and success of our participation in the global market of the future.
3. Help develop Virginia as a major entity in the global economic marketplace of the future.

Virginia has many assets that make it possible to move rapidly in responding to the Governor's technology imperatives: leadership, parts of the infrastructure, a web presence, an established planning process, and outreach to the technology industry and business community. The purpose of this strategic plan for technology is to provide a blueprint by which those assets will be marshaled by the Secretary of Technology to achieve the Governor's imperatives.

GUIDING PRINCIPLES

The Secretary of Technology identified seven guiding principles to provide a sound framework for developing and implementing the strategic plan, including:

1. **Exponential change, not incremental change.** To be effective in the fast-paced global economy and respond effectively to the findings of the Wilder Commission, Virginia must take bold strides for-ward, not small, incremental steps.

2. **Technology is not an end unto itself.** Technology supports the overall mission, or business, of government operations, and is a tool to increase capacity and create efficiencies, with the ultimate goal of providing more effective and convenient services to customers. Technology is not a separate discipline—there are no “technology projects.” Technology is an enabler and a component of “business” initiatives.
3. **Technology is complex.** Technology, particularly in the new global digital economy, is complex and evolves rapidly. In addition, information often has intangible value. As a corollary, technology is expensive, yet considerable cost-savings and cost-avoidance can be achieved through pooling resources and architecting standardized products and services.
4. **Performance measurement is at the crux of decision-making.** Responsible decision-making relies on quantitative and qualitative data to determine the effectiveness of existing practices, set direction and goals, and measure success in a continuous loop. The strategic plan contains metrics and milestones to gauge progress and inform decision-makers.
5. **Technology relies on increasing cooperation across traditional borders.** Today’s increasingly networked environment requires cooperation and partnership—across agencies; among federal, state, and local governments; and between public and private sector organizations.
6. **Accountability drives results.** Government is accountable to its customers, and is accountable for the responsible stewardship of tax dollars. Similarly, the Office of the Secretary of Technology and its agencies, boards, and commissions are accountable for the implementation of the strategic plan. Each major action item includes the name, title, and organization of the person(s) accountable for successful execution.
7. **Urgency.** Virginia’s fiscal crisis and the current state of technology demands urgent, strategic action. ***We must act now.***

PROCESS

Virginia in The Global Digital Economy is the result of five, intensive months of planning. Starting in April 2002, key staff members from the Office of the Secretary of Technology, Department of Technology Planning, Department of Information Technology, Virginia Information Providers Network, and Virginia’s Center for Innovative Technology met weekly. With the assistance of an internationally renowned technology thought-leader, the strategic planning team developed and fleshed out the goals and objectives, performed analyses, and brainstormed ideas to help position Virginia as a global leader.

Key stakeholders, including executive branch agencies, boards and commissions, and the technology business community, contributed to the strategic plan, providing valuable data and input through the development process. Due to the significantly different business requirements and practices of education institutions, the education sector formed a workgroup made up of representatives from colleges and universities. The Education Sector Workgroup is developing recommendations to the Secretary in a parallel effort.

The following agencies within the Office of the Secretary of Technology are directed to implement the strategic plan:

- **Department of Technology Planning** (<http://www.dtp.state.va.us>)
DTP develops statewide technology plans, policies, standards, and guidelines. DTP also serves as the Secretary's agent in reviewing state agency technology plans, budget requests, procurements, and major projects. To involve stakeholders, DTP works closely with the Secretary's Council on Technology Services, Virginia's regional technology councils, other state agencies, local governments, and public and private sector representatives.
- **Department of Information Technology** (<http://www.dit.state.va.us>)
DIT provides state and local government with a central source for meeting their information technology needs. DIT operates a shared data center facility supporting numerous technology products and services. DIT also manages the state's telecommunications services and provides a highly reliable and robust statewide network infrastructure supporting voice, data, video, and Internet applications. Services are available to local and state government and higher education entities in all locations within the Commonwealth. DIT also assists state agencies and local governments with designing, purchasing, managing, and troubleshooting their IT resources.
- **Virginia Information Providers Network** (<http://www.vipnet.org>)
VIPNet was created in 1996 to help streamline and enhance the ways in which citizens and businesses access Virginia government. VIPNet provides the Internet gateway to Virginia government information and services via the Commonwealth's home page. VIPNet provides citizen access to many free services and information, while at the same time, building value-added services of interest to the business community.
- **Virginia's Center for Innovative Technology** (<http://www.cit.org>)
CIT increases investment in the creation of knowledge, accelerates transfer of that knowledge into the global marketplace, and promotes the growth of entrepreneurial firms by helping to create, retain, and attract technology-based businesses, jobs, and research and development. CIT provides technology companies with the business, technical, financial, e-commerce, resource location, and networking assistance they need.

Two public advisory bodies provide assistance and guidance to the Secretary of Technology:

- **Council on Technology Services** (<http://www.cots.state.va.us>)

COTS was created in August 1998 to advise and assist the Secretary of Technology with information technology planning and decision-making. The Council is chaired by the Secretary of Technology and has up to 32 members. Current membership includes representatives from each Secretariat, four institutions of higher education, three local governments, and the legislative and judicial branches of state government. To help fulfill its mission, COTS establishes various work-groups comprised of COTS members and other subject matter experts to provide in-depth analysis of technology issues.

- **Chief Information Officer Advisory Board** (<http://www.cio.state.va.us>)

The CIO Advisory Board was created in 1999 to advise the Secretary of Technology on the proper planning, practical acquisition, effective development, and efficient use of information technology to serve the needs of agencies and institutions of higher education in the Commonwealth. Twelve executives from top Virginia companies are appointed by the Governor to four-year terms. Members are selected for their leadership, expertise, and accomplishments, and provide advice on a number of substantive technology opportunities and challenges facing the Commonwealth.

DTP is charged with monitoring the implementation of this strategic plan for technology and providing status reports. Proposed additions and modifications to the plan will be distributed annually on or about August 1. Final additions and modifications will be published by DTP on or about September 15 annually. The full plan and executive summary are available for viewing or download at www.technology.state.va.us.

STRATEGIC PLAN HIGHLIGHTS

Based on the Governor's vision for technology and three imperatives, Secretary Newstrom identified eight significant initiatives, made up of thirteen agency projects. The eight initiatives are:

1. **Revolutionize service delivery to our customers** through implementation of a customer-facing Internet portal and increasing the quantity, quality, and adoption of online services, particularly in the area of online licensure and interactive forms.
2. **Consolidate IT infrastructure and provide centralized services** as a technology utility. The plan also calls for developing a comprehensive, statewide information security program and for overhauling state administrative systems in the area of finance, planning and budgeting, and human resources.
3. **Plan, budget, and track IT expenditures** by developing a capital planning and funding process for IT, developing a comprehensive technology management policy, and improving systems to track IT expenditures.
4. **Manage IT procurement** by developing and implementing a best practice model for effective and timely IT procurements.
5. **Increase federal research and development funding** to industry and Virginia's colleges and universities, including historically black colleges and universities (HBCUs).
6. **Increase commercialization of intellectual property** from Virginia's labs, entrepreneurs, and institutions of higher education, and grow entrepreneurial companies.
7. **Increase statewide broadband deployment**, especially in Virginia's rural areas, to enhance economic development.
8. **Promote technology-based economic development** in Virginia by "growing" technology companies.

THE ROLE OF THE VIRGINIA CHIEF INFORMATION OFFICER

GOVERNOR'S IMPERATIVE:

“Develop the Role as the Chief Information Officer of Virginia’s Technology Resources so that they are the Most Effective and Efficient and Meet the Needs of our Customers — the Citizens of the Commonwealth of Virginia”

INTRODUCTION

Citizens want government to be accountable, accessible, and convenient, and to deliver its services at lower cost. They want a citizen-facing, customer-service orientation for receiving government services. These are values that have always been central to the responsible, effective functioning of government. Ever more powerful ways to manage government information makes it possible to improve business management and track outcomes. By delivering their services over the Internet, government becomes more economical and effective because these technologies are the foundation that allows agencies to deliver real-time service to their constituents.

The purpose is to expand the choices people have in dealing with their government. Broader than “electronic government” or “e-government,” Virginia is building “digital government.” The digital government model takes advantage of the possibilities for real transformation in the operation of public agencies. Digital government is digitally enabled government from end-to-end—using modern technology to share information across and deep into the enterprise. In the 21st century, digital government is:

- Citizen-facing;
- Transformational;
- Accountable;
- Efficient; and
- Fundamental.

As Chief Information Officer (CIO) for the Commonwealth, the Secretary of Technology fosters digital government by providing enterprise technology infrastructure and services, strategic direction and oversight, and leadership. These three characteristics must be in a harmonious balance for the CIO to

Citizens want government to be accountable, accessible, and convenient, and to deliver its services at lower cost.

Broader than electronic government or e-government, Virginia is building digital government.

deliver on the Governor’s imperative to use Virginia’s technology resources most effectively and efficiently. The Virginia model for a strong CIO organization is depicted in the figure below. The model is built in these four dimensions: Service, Strategy, Leadership, and Governance.

- **Service – Excellent Delivery of Enterprise Technology Infrastructure and Services**

The essential element of the CIO function—the most fundamental requirement for success—is the delivery of enterprise technology infrastructure and services that are reliable and cost-effective. Service requires an operational perspective that is monitored and measured frequently. Service agreements, which establish performance characteristics for customers, are necessary. Customer satisfaction is surveyed and cost competitiveness is measured periodically. *Service delivery is the measure of competence for the CIO.*

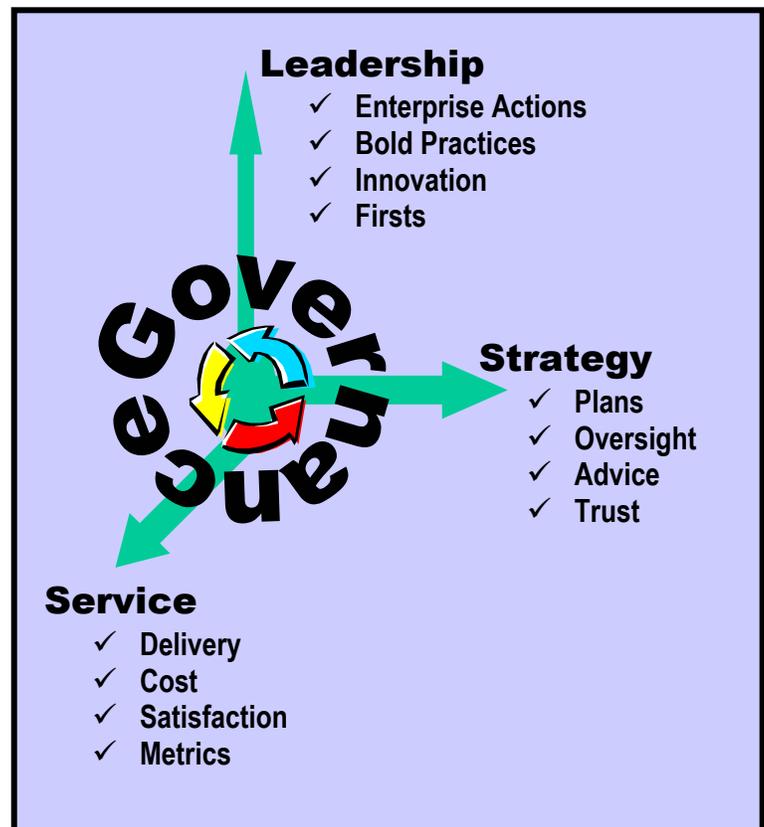
- **Strategy – Direction and Oversight**

Building on the base of exceptional enterprise technology infrastructure and services, the CIO is qualified to plan for the effective use of technology across the agencies of the Commonwealth. These plans are both strategic and operational and form the basis for establishing “best practices” in the use of information technology. The plans are the basis for establishing standards, policies, and guidelines that direct the enterprise in using technology effectively. *Strategy establishes credibility for the CIO.*

- **Leadership – Innovation and Transformation Using Information Technology**

As the CIO executes strategy, he becomes the trusted advisor to the directors of policy agencies that rely on technology to deliver government services. This role provides opportunity for leadership in transforming business processes.

Leadership includes innovation, developing “first” uses of promising technologies, and experimenting with new approaches to improving public access to government. In addition, leadership involves using newer technologies to demonstrate better ways to operate government programs for the benefit of customers and constituents. *Leadership follows from demonstrated competence and established credibility.*



- **Governance – Involving Stakeholders in Decision-Making**

As good as the CIO becomes in delivering enterprise technology infrastructure and planning the technology direction for the future, his role is principally as change agent. To be lasting, change must take hold in the culture of state agencies. This requires involving stakeholders and colleagues in the decisions that lead to change. Governance is organizing that involvement. *Governance makes change possible, achievable, and sustainable.*

SECRETARY’S CIO INITIATIVES

Service, Strategy, Leadership, and Governance have converged in this strategic plan through the following Secretarial initiatives and agency projects, described in detail in the next section of the strategic plan:

Secretary’s Initiative 1 – Revolutionize service delivery to our customers

- Agency Project 1: Implement a customer-facing Internet portal
- Agency Project 2: Increase quantity, quality, and adoption of online services

Secretary’s Initiative 2 – Consolidate IT infrastructure and provide centralized services

- Agency Project 1: Consolidate technologies
- Agency Project 2: Develop a program for statewide IT security
- Agency Project 3: Overhaul state administrative systems

Secretary’s Initiative 3 – Plan, budget, and track IT expenditures

- Agency Project 1: Develop a capital planning and funding process for IT
- Agency Project 2: Develop a comprehensive technology management policy
- Agency Project 3: Improve systems to track IT expenditures

Secretary’s Initiative 4 – Manage IT procurement

- Agency Project 1: Develop and implement a best practices model for IT procurement

Service, Strategy, Leadership, and Governance have converged in this strategic plan

SECRETARY'S INITIATIVE 1: REVOLUTIONIZE SERVICE DELIVERY TO OUR CUSTOMERS

INTRODUCTION

While certainly not the only service delivery mechanism, the Internet is a cornerstone in building Virginia's "anytime-anywhere" digital government. Self-service web-enabled applications permit more citizens and businesses to interact with government (e.g., completing transactions via the web) in a "twenty-four by seven" environment and should lead to cheaper government. When adoption rates for online services reaches critical mass among citizens and businesses, more expensive paper, voice, and face-to-face transactions are likely to decline. This will allow government to gradually downsize, while retaining or even expanding the quantity and quality of services provided.

The success of agencies web-enabling their information and services will also serve as the foundation for higher level electronic government undertakings. As agencies move away from developing strictly stovepipe applications aligned with specific agency lines of business, business processes will be restructured and government functions will be integrated across different agencies and levels of government. For example, moving towards more seamless government should mean that a new business can visit a single web business portal to accomplish simultaneously all of the required licensing and permitting functions which are the responsibility of multiple state and local government entities. Achieving that level of government integration and reengineering requires a greater investment of government resources, but promises an even higher return in cost savings and user satisfaction.

The agency projects within this Secretary's initiative are:

- Implement a customer-facing Internet portal and
- Increase the quantity, quality, and adoption of online services.

The Internet is a cornerstone in building Virginia's "anytime-anywhere" digital government.

AGENCY PROJECT 1:

Implement a Customer-Facing Internet Portal (Virginia Information Providers Network)

A customer-facing presentation of online information and services is one of the most important priorities for Virginia's Internet portal. Creating a customer-facing portal requires Virginia to implement enterprise solutions that focus on the needs of citizens and businesses. The Commonwealth's portal and all state agencies within the portal should have web sites that are intuitive, easy to use, and accessible, without jargon, confusing program names, and acronyms. Consequently, some degree of web site standardization is appropriate and requires agencies to implement enterprise solutions.

SECRETARY'S INITIATIVE 1: REVOLUTIONIZE SERVICE DELIVERY TO OUR CUSTOMERS

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

With the large number of agencies in Virginia state government, there is an equally large number of variations in web site presentation. There are variations from agency to agency and even within divisions and departments of a single agency. The hodgepodge of web presentations from agency to agency means that citizens and businesses must become familiar with a different look, feel, and navigation at each different web site, which may impede their ability to find information and services they seek. Moreover, some agencies lack knowledge of, expertise in, or resources to address web site accessibility and usability issues, which includes compliance with Section 508 of the Americans With Disabilities Act.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, VIPNet will implement a customer-facing Internet portal by creating:

- common web site design templates for state agencies that comply with and exceed all accessibility and usability standards; and
- a common look, feel, and navigation for agency web sites.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Identify and obtain necessary enterprise solutions.

VIPNet will identify needs and obtain such enterprise solutions as a content management system, search engine, web-based security training, security assessments, live online customer service, and privacy compliance.

2. Design accessibility and usability templates for agencies.

Based on national and international standards, VIPNet will develop accessibility and usability guidelines and design three templates for agencies that meet or exceed those guidelines and provide a common look, feel, and navigation.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Obtain necessary enterprise solutions
January 2003	Complete design of accessibility and usability templates

SECRETARY'S INITIATIVE 1: REVOLUTIONIZE SERVICE DELIVERY TO OUR CUSTOMERS

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- By June 2003, at least 10 agencies will deploy some or all of the enterprise solutions and at least 20 agencies will use the web site design templates.
- By June 2004, at least 20 additional agencies will deploy some or all of the enterprise solutions and at least 30 additional agencies will use the web site design templates.

AGENCY PROJECT 2:

Increase the Quantity, Quality, and Adoption of Online Services

(Virginia Information Providers Network and Department of Technology Planning)

Government is primarily in the business of providing services; therefore, it is in a prime position to reap the benefits of developing and implementing more services delivered via the Internet. Many governmental services can be performed more effectively and cheaply through the Internet. Personnel are freed up from routine tasks and can provide better service to in-person customers or be re-directed to higher level work flow activities. Online services also make interacting with government much more convenient for citizens and businesses. Tasks that previously required a visit to a government office or a telephone call during office hours can be performed by citizens and businesses whenever and wherever they please.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

Executive orders issued by the previous administration required agencies to publish forms and provide information via the Internet. As a result, many agencies are providing forms via the Internet which are required for citizens and businesses to interact with government. The most recent statewide survey of agency forms showed approximately 50 percent of those forms are now accessible electronically. (See Executive Order 51 agency survey, October 2000.)

However, such forms and information are often presented primarily from agency-centric data silos in a static, non-interactive manner. Agencies have typically not created fully interactive, integrated online processes that enable citizens and businesses to exchange information with government entities and make any required payments electronically. Rather, most forms are merely downloadable and printable or the online agency processes have a web-enabled front end (form completion and payment submittal)

SECRETARY'S INITIATIVE 1: REVOLUTIONIZE SERVICE DELIVERY TO OUR CUSTOMERS

but lack backend integration with the agency's databases and internal systems. Thus, those agencies may be re-keying information that they received electronically.

Virginia's e-government shortcomings have been more precisely documented in the professional licensing realm. A 2001 e-government study by Brown University ranked Virginia in the bottom five of states for providing professional license renewal services online. A recent internal survey of Virginia agencies responsible for licensing professionals shows that less than five percent of Virginia's 600,000 licensed professionals may renew their licenses online. And no agencies offer the ability for the initial filing of a license application via the Internet.

Those few agencies that have made more significant progress in providing fully interactive and integrated online services are beginning to realize cost savings from their e-government commitment. For example, DMV began accepting credit cards in FY 1997. That year, 2.56 percent (or 209,022) of all payments to DMV were made via credit card transactions. The average cost of a credit card transaction in FY 1997 was \$1.67. By FY 2001, DMV had introduced a variety of service options (from touch tone phones to the Internet to kiosks) and had web-enabled numerous driver and vehicle services, including vehicle registration and driver's license renewals. In FY 2001, 10.55 percent (or 1,179,765) of all payments to DMV were made via credit card transactions and the average cost of a transaction decreased to \$1.35 as the agency introduced a variety of electronic renewal options. (See Jack Christian's presentation to the Joint Commission on Technology and Science, November 28, 2001.)

Similarly, the Department of Health Professions has projected more than \$500,000 in annual cost savings through web-enabling business access to its health professionals databases. Perhaps most importantly, both of those agencies have received high customer satisfaction marks because of the efficiency and convenience of those online services.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

The Commonwealth should move its agencies from:

- Publishing static forms and information via the Internet to transforming business processes via the web;
- Agency-centric data silos to integrated views of information and services;
- Being accessible online to being interactive in real-time; and
- Web-enablement to stakeholder empowerment.

In the “to be” environment, VIPNet will partner with state agencies to bring more services online and do so in a fully interactive and integrated manner. VIPNet will help those agencies to leverage the network's services, including its electronic payments portal, so that agencies can implement their online services in

SECRETARY'S INITIATIVE 1: REVOLUTIONIZE SERVICE DELIVERY TO OUR CUSTOMERS

the most cost effective and timely manner possible. VIPNet will also market the availability of online services to Virginia's citizens and businesses. Cost savings and internal business process efficiencies are maximized when adoption rates reach critical masses of online users.

HOW WE ARE GOING TO GET THERE – "GAP CLOSING MEASURES"

To move the Commonwealth from the stated "as is" environment to the desired "to be" environment, the following "gap closing measures" have been identified:

1. Governor's Executive Order directing that executive branch agencies provide business processes, including all licensing and permitting transactions, in a fully interactive manner via the Internet.

VIPNet's development resources and existing services, including its electronic payments portal, will provide the tools necessary for many agencies to meet the Order's requirements. The Secretary of Technology may grant waivers to this requirement on a case-by-case basis where an agency identifies a legal requirement or hardship requiring that the business process be available additionally or only in a paper version.

2. Publish an Interactive Business Directive.

The Department of Technology Planning will publish an Interactive Business Directive for executive branch agencies and institutions of higher education that will also be offered as guidance to local governments. The Directive will help guide agencies in facilitating online citizen and business transactions with the Commonwealth.

3. Provide agencies with an evaluation tool for projecting and measuring cost savings when fully interactive, integrated business processes are provided via the Internet.

VIPNet will provide agencies with an evaluation tool for projecting and measuring cost savings when fully interactive, integrated business processes are provided via the Internet. That tool will help agencies project cost savings gained by web-enabling their services and measure cost savings after they have web-enabled their services.

4. Develop and implement the electronic payments portal and other interactive services.

VIPNet will develop and implement interactive services such as PIN-based user authentication, conference registration, constituent notification, activities calendar, shopping cart, and wireless enabled services.

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5. Increase the percentage of professionals who may apply for and renew their professional licenses online.

VIPNet will assist agencies with the development and implementation of online licensing services, to include initial application for licensure and license renewals.

6. Assist agencies in the development of six new, fully interactive, integrated online services.

VIPNet will develop and implement such interactive, integrated online services as boat registration renewals, hunting and fishing license purchases, pesticide permit renewals, job registration service, moving violations payments, and criminal background checks.

7. Implement Virginia Business Portal.

VIPNet will develop and implement a “one stop shop” web portal for all interaction with government required for new and existing businesses in partnership with applicable agencies and local governments.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Publish Interactive Business Directive Complete development of electronic payments portal Complete development of conference registration service Complete development of constituent notification service
October 2002	Complete development and begin phased implementation of moving violations online payments; completion date TBD Complete agency evaluation tool for projecting and measuring cost savings
November 2002	Complete development and implementation of electronic payments portal for criminal background checks
December 2002	Complete development and implementation of boat registration renewal service Complete development and implementation of job registration service
January 2003	Complete development and implementation of online hunting and fishing license purchases
April 2003	Complete development and implementation of online pesticide application permitting

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Completion Date	Deliverable
June 2003	Achieve a 25 percent adoption rate for web-enabled business processes Assist agencies to increase to 75 percent of all professionals who may renew their licenses online Initiate plan for design and development of Virginia Business Portal
June 2004	Achieve a 50 percent adoption rate for web-enabled business processes Assist agencies in providing at least 75 additional business processes via fully interactive, integrated online services as described in Interactive Business Directive Assist agencies to increase to 100 percent of all professionals who may apply for and renew their licenses online Implement Virginia Business Portal

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Fully interactive, integrated online business processes will be provided by 100 percent of all executive branch agencies by June 2004.
- A 50 percent adoption rate for web-enabled business processes will be achieved by June 2004.

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

INTRODUCTION

The stovepipe nature of many agency business processes and technology implementations has led to significant duplication, overcapacity, and non-standardization. The overspending of resources to support these independent actions has been at the expense of other business-related process improvements and innovations.

The Commonwealth can achieve significant fiscal benefits from consolidating technology resources and providing centralized services. For example, the multiplicity of data centers and servers can be consolidated to better maximize product functionality. Moreover, consolidating technology can help move the organization toward developing baseline technology standards utilizing enterprise-oriented, centralized applications. This approach will provide many benefits, such as seamless service and improved efficiency, that will outlast individual projects and the current and future administrations.

The agency projects within this Secretary's initiative are:

- Consolidate technologies;
- Develop a program for statewide information technology security; and
- Overhaul state administrative systems.

AGENCY PROJECT 1:

Consolidate Technologies

(Department of Technology Planning and Department Of Information Technology)

From the standpoint of its business operations, Virginia state government can be characterized as a highly decentralized enterprise. The best business practices of decentralized enterprises, however, also include centralization of administrative and support functions where economies of scale and efficiencies of operation can be realized while still effectively sustaining multiple business organizations. Technologies that provide utility functions such as data centers, distributed computing assets, and help desks are examples of functions that are logical candidates for consolidation within Virginia's current IT environment. Consolidating these types of core technologies will allow the Commonwealth to provide more effective services at reduced cost.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

The Commonwealth currently supports numerous technologies spread across agencies and institutions of higher education. In this environment, enterprise-wide levels of IT services to citizens and state and

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local government employees have not been established. Similarly, enterprise-wide service levels of technology, such as system availability, user satisfaction, and IT service satisfaction, have not been established for the various users of the Commonwealth's technology.

The lack of an enterprise-wide approach to technology has led to inconsistent service levels in terms of quality and functionality to citizens. Access to state information databases by local governments has also been impeded.

Executive branch agencies (except those under the Secretary of Education) identified their current computing environments through a survey sent out by the Department of Technology Planning that was completed in June 2002. (See Appendix Two for complete survey results.) The table below summarizes the survey results and additional information gleaned from the 2001 agency IT strategic plans submitted to the Department of Technology Planning.

Summary Matrix – Executive Branch IT Infrastructure

Focus Areas	Current Technology Infrastructure Information
Mainframes	<p>Executive branch agencies (excluding Education) are supported by six (6) mainframes, all of which are located in Richmond: Department of Information Technology (4), Department of State Police (1), and Department of Agriculture and Consumer Services (1). Mainframes have 3,540 GB of disk space.</p> <p>Twenty (20) agencies reported fifty-two (52) mid-range computers dispersed across the Commonwealth, including Department of Taxation (6), Department of Transportation (13), Department of Correction (4), and Department of Alcoholic Beverage Control (7). Mid-range computers have 7,956 GB of disk space.</p> <p>172 applications are running on mainframes and 224 applications are running on mid-range computers.</p>
Servers	<p>Executive branch agencies (excluding education) have deployed 2,329 servers:</p> <p>Agency servers have 95,933 GB of disk space.</p> <p>Agencies plan on replacing 1,471 of these servers over the next 5 years.</p> <p>66.8% are smaller servers with an average annual cost of \$4,912 and the remaining 33.2 % are enterprise level servers with an average annual cost of \$11,325.</p>
Distributed Computing Assets	<p>Executive branch agencies have a total 1,420 local area networks (LAN), with 27 of those LANs being managed by another agency or an outside vendor. A total of 92,717 devices with an annual cost of \$49.3 million are connected to the servers in these LANs.</p> <p>52,190 desktop, portable, and PDA computers with 27,127 to be replaced over next 3 years.</p> <p>34,515 peripherals with 15,464 to be replaced over next 3 years.</p> <p>6,012 network devices with 2,048 to be replaced over next 3 years.</p>

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Focus Areas	Current Technology Infrastructure Information
ERP Applications	<p>Agencies identified a total of 830 needs not currently being met by the central systems. The following were identified 50+ times by the 62 agencies that responded to the survey:</p> <ul style="list-style-type: none"> Financial - Accounts payable tracking, revenue and accounts receivable tracking, expenditures mapped to budget, fund allocation tracking, and travel reimbursement Personnel – Time tracking, and staff training tracking Inventory – Inventory control
IT Human Resources	<p>Executive branch (excluding Education) IT full time equivalents (FTEs) is 2,286 with an annual cost of \$154.9 million at an average annual salary of \$67,226 per FTE:</p> <ul style="list-style-type: none"> 1,572 classified staff at an average of \$56,156 per FTE per year 85 hourly staff at an average of \$30,655 per FTE per year 450 contractors at an average of \$115,643 per FTE per year 179 other IT staff at an average annual salary of \$67,119 per FTE <p>VDOT (386), DMV (204), DSS (192), VDH (113.27) and TAX (107) utilize the most FTE IT resources. 360.5 staff from DIT are included in the staff counts above at a cost of \$21,983,343. The DIT staff cost is not included in any other table because the cost is completely recovered.</p>
Network	<p>All agencies are on COVANET, with the exception of higher education, the Virginia Employment Commission, the Department of Corrections, and the Department of Health, which utilize Net.Work.Virginia. The Department of State Police is in process of migrating to COVANET. DIT manages the COVANET contract, whereas DIT and VPI jointly manage the Net.Work.Virginia contract.</p>

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, a comprehensive initiative for capturing economic benefits and service efficiencies gained by applying proven best practices to the central provision of Virginia state government’s information technologies will be implemented. The Commonwealth needs to define and implement appropriate levels of service and availability in order to fully realize the benefits of consolidation. Execution of this initiative will require:

- consolidating technologies into one or more IT service centers;
- completing the Commonwealth’s enterprise architecture;
- implementing enterprise-wide applications;
- deploying infrastructure that supports common utilities;
- establishing service level and availability standards for consolidated systems;
- establishing methods for measuring user satisfaction of centralized services; and
- establishing standard technology products and services to be used in the consolidated environment.

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Anticipated benefits include an increased ability to:

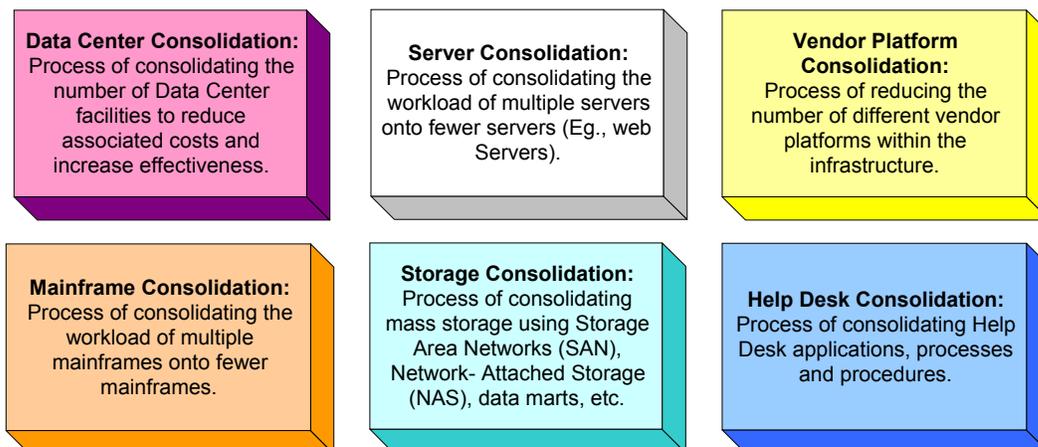
- support citizen-centric government at the community level;
- promote interoperability, cost and resource sharing, and IT centers of excellence across the Commonwealth;
- implement IT partnerships and standardization across Virginia;
- implement effective cost controls;
- leverage state IT services and infrastructure; and
- cultivate a higher degree of alignment, integration, and extensibility.

The Department of Technology Planning and the Department of Information Technology will work collaboratively to create the “to be” environment, with

DTP leading the planning effort and DIT leading the implementation effort. The plan will take into consideration, and will be inclusive of, information technology resource management across executive branch agencies, institutions of higher education, and local governments; however, the initial phase of the plan will be directed at executive branch agencies only. It is acknowledged that the environment and technology needs of the education secretariat are differentiated and often unique, and will therefore require a separate, yet complementary, effort.

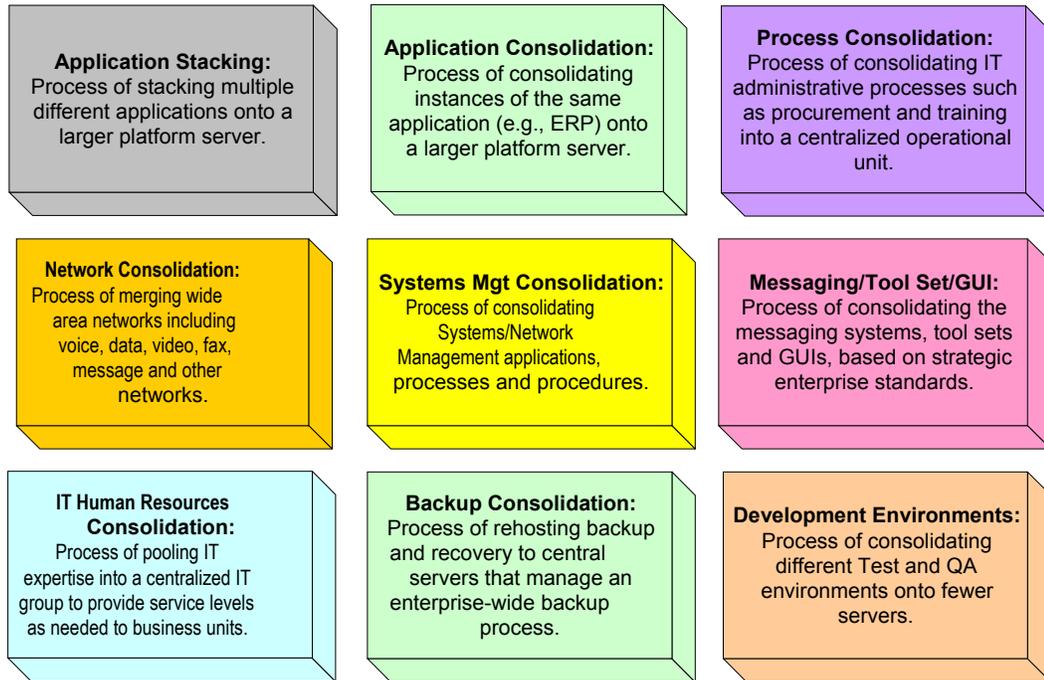
Preliminary Tier 1 and Tier 2 targets of opportunity for technology consolidation within the Commonwealth have already been identified. These targets will need to be refined further as the process continues. Some of the targets of opportunities have dependencies which will need to be addressed to determine the most effective means for providing improved services and reduce costs. Tier 1 opportunities include data center, mainframe, server, storage, helpdesk, vendor platform, and help desk consolidation. See chart below:

Virginia State Government – Focus Areas for Consolidation Tier 1 - Higher Opportunity within Commonwealth



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Tier 2 - Lower Opportunity within Commonwealth



Data collected by DTP's recent IT survey will be used to identify specific opportunities within each tier and any additional opportunities for technology consolidation. A business case will be developed for each consolidation opportunity and submitted to the Secretary of Technology for review. Based on approved targets of opportunity, the "to be" environment will be refined and documented. Targets of opportunity and the business case will take into account the dependencies as the opportunities are studied. Cost will be a factor as well as desired levels of service, impact on citizens and state services, and implementation issues.

HOW WE ARE GOING TO GET THERE – "GAP CLOSING MEASURES"

To move the Commonwealth from the stated "as is" environment to the desired "to be" environment, the following "gap closing measures" have been identified:

1. Establish permanent oversight, management, and implementation teams.

Oversight, management, and implementation teams will be defined, authorized, and deployed to direct, monitor, and control the consolidation project. Toward that end, it is recommended that:

- An Executive Oversight Committee, comprised of deputy secretaries, be established to oversee the overall implementation of the consolidation.
- An IT services director be hired to have full responsibility for the project and the permanent

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services provided by the consolidation effort. This individual will report to the Director of the Department of Information Technology and provide project information to the Executive Oversight Committee as requested or required.

- A dedicated team consisting of key Commonwealth IT resources, consultants, and agency personnel be appointed to implement the consolidation and provide permanent service delivery if required. This team will report to the IT services director.

2. Prioritize the targets of opportunity and develop business case.

To assess the impact of cost and service delivery on the targets of opportunity, a “due diligence” process will be undertaken to supplement information already gathered through DTP’s IT survey. This process will require an assessment of each target of opportunity to identify the desired service levels, availability standards, and impact on state services. Targets will be prioritized based on cost and desired service levels for the enterprise. Costs will include estimates of start up, implementation, and ongoing maintenance costs to the Commonwealth. DIT will lead the effort to prioritize the targets of opportunities and develop the business case. DTP will coordinate oversight with the Secretary of Technology and Executive Oversight Committee.

3. Develop standard products and services for each target technology slated for consolidation.

To reduce costs, improve service delivery, and obtain best practices in the industry, standard products and services will be developed for the targets of opportunity. Examples include hardware, operating systems, systems software, application software, and services supported at the enterprise level such as security products and services. DIT will lead the effort to develop standard products and services for the consolidated environment and make recommendations on outsourcing or insourcing to the Secretary of Technology. All standard products and services will comply with the Commonwealth’s enterprise architecture.

4. Begin consolidation of technologies.

Implementation of the consolidation effort will address all important tasks required for a smooth transition. The transition will address the following:

- required resources;
- appropriate schedules and timelines;
- procurement process;
- costs and the allocation of costs to agencies;
- monitoring performance measures, service levels, and availability for services;
- transition of agency IT services;
- user acceptance;

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- contingency planning and disaster recovery;
- testing process procurement strategies; and
- coordination between state agencies and federal and local governments.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
October 2002	Hire or appoint IT services director; assemble project team; appoint Executive Oversight Committee
January 2003	Prioritize targets of opportunities and complete business cases for implementation
November 2003	Implement standard products and services
June 2004	Complete consolidation of first priority targets
June 2005	Complete consolidation of second priority targets
June 2006	Complete consolidation of third priority targets

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Reduction in quantity and cost in the following areas:
 - Data centers
 - Mainframe/midrange computers
 - Servers
 - Local area networks/telecommunications
 - Human resources (through normal attrition).
- 99.5 percent availability of all centralized services to customers.
- 90 percent customer satisfaction level at "very satisfied" or higher.
- All centralized services have a tested disaster recovery plan and comply with homeland security standards, APA SAS70, and Commonwealth security standards.

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

AGENCY PROJECT 2: Develop Program For Statewide Information Technology Security (Department of Technology Planning)

Our current comprehension of the very real risks of security breaches demands that the Commonwealth have a sound, consistent base of IT security that transcends the limitations of and variability among the diverse agencies within state government. Developing a program for statewide information technology security will improve security throughout state agencies, particularly in the smaller agencies where a lack of funding has prevented the implementation of sound security policies and standards. This program will provide better protection of the Commonwealth's critical IT resources against attacks.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

Denial of service attacks, viruses, web site hacking, attempted unauthorized access to databases, and malicious corruption of code have increased in recent years in both the public and private sectors. Some of the Commonwealth's larger state agencies have excellent defenses against these computer incidents; others do not. Failure to prevent or contain intrusions may result in an inability to access critical information in a timely manner and hamper the Commonwealth's ability to respond to emergencies. Cyber attacks may also result in financial loss, noncompliance with state or federal statutes, degraded customer service, and loss of public confidence.

Historically, implementation of IT security programs has been decentralized to the agency level. The Commonwealth's current policy is that each agency head is responsible for the security of the agency's information technology resources. All state agencies are responsible for taking appropriate steps to secure their information technology resources through the development of an agency information technology security program. Agencies are required to maintain documentation of their information technology security programs consistent with the requirements of the Information Technology Security Standard, COV Information Technology Resource Management Standard (ITRM) SEC2001-01.1. The agencies' internal auditors have addressed compliance with the ITRM security standard as part of internal control audits.

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

The Commonwealth's continued efforts to prepare for and protect against cyber attacks have gained momentum over the past 18 months with these significant events:

- May 2001 - The Commonwealth's first security architecture document was published by the Enterprise Architecture Workgroup of the Council on Technology Services. This foundational document provides a framework for consistency, coordination, and collaboration in applying security safeguards across the Commonwealth's entities.
- May 2001 – The Commonwealth Information Security Center was established at James Madison University, in partnership with George Mason University, Virginia Polytechnic Institute and State University, and Hampton University. The Center's goal is to become a leading provider of information security services and research.
- December 2001 - The Department of Technology Planning updated existing and published new information technology security policies, standards, and guidelines for state agencies, institutions of higher education, and local government.
- January 2002 – Governor Warner's Executive Order 7 was issued. The order requires all agencies to complete and file a business continuity plan with the Governor's Office by May 31, 2002.
- March 2002 - House Bill 823 approved and enacted. The legislation authorizes the Secretary of Technology to conduct technology security audits.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

Against the backdrop of the “as is” environment, Virginia should develop and implement a statewide IT security program:

- to ensure that a consistent level of IT security is achieved across the Commonwealth to protect the state's IT assets, attain high-level IT security skills, communicate IT security alerts and best practices, and respond to and recover from cyber attack; and
- to facilitate collaboration with other entities such as law enforcement, public affairs, internet service providers and other service providers for rapid response to security breaches.

In the “to be” environment, a statewide IT security program will take into consideration, and will be inclusive of, protecting critical IT assets and infrastructure across executive branch agencies, institutions of higher education, and local governments, in cooperation with service providers and businesses where appropriate. The program will build upon the Commonwealth's security architecture and the published security policy, standard, and guideline.

**SECRETARY’S INITIATIVE 2:
CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES**

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Implement the statewide security program.

DTP will undertake the tasks required to design, develop, and implement a statewide security program and associated services, taking into account resources, schedules, costs, performance measures, etc. This effort will involve the participation of other agencies such as the Auditor of Public Accounts and the Division of the State Internal Auditor.

2. Create a statewide information security office.

This office will include a cyber-incident response team and an IT security audit function. The Department of Technology Planning has proposed a best practices model for this office that calls for the establishment of a statewide security program which provides the following services:

Function	Service Name	Description
1) Critical Infrastructure Identification	1a) Critical IT Infrastructure Assurance	1a) Identify IT infrastructure that is deemed critical to the operation of the state and ensure that appropriate enterprise safeguards and emergency recovery procedures are established.
2) Direct Response	2a) Incident Alerts and Reporting	2a) Serve as a focal point for disseminating statewide alerts regarding security threats, active attacks, protective measures, and incident status.
	2b) Incident Response Assistance	2b) Provide direct assistance to entities to contain, eradicate, and recover from security attacks.
	2c) Incident Resolution	2c) Provide direct assistance to entities in isolating cause, reason and perpetrator of attack, and methods to prevent similar future attacks.
3) Infrastructure Protection	3a) Penetration Testing	3a) Perform a series of controlled “attacks” against an entity’s security safeguards to assess strengths and vulnerabilities.
	3b) On-site consulting	3b) Facilitate the networking of specialists to entities so as to provide supplementary consulting services regarding security protection.
	3c) Procurement contracts	3c) Ascertain the need for statewide procurement contracts for security products and services.
4) Technology Watch	4a) Product and Services Review	4a) Stay abreast of new technology, products and services and assess, summarize, and report their security impact and value.
	4b) Best Practices Review	4b) Stay abreast of new standards, methods, and practices in the industry and assess, summarize, and report successes and best practices.

**SECRETARY’S INITIATIVE 2:
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Function	Service Name	Description
5) Technology Audits	5a) Security Program Audits	5a) Using risk-based audit criteria, perform security audits to determine compliance with published security standards and advise on security programs and control structures.
6) Education and Promotion	6a) Proactive Training and Certification	6a) Facilitate training opportunities which assist entities in the development of skills in such areas as risk assessment, safeguard implementation, incident response plans, and incident detection and forensics.
	6b) Security Awareness Promotion	6b) Facilitate communications and events which promote IT security awareness and preparedness.

Staff resources will be required to direct, process, and coordinate services and establish collaborative relationships with external entities such as law enforcement, public affairs, internet service providers, and other service providers. The security program staff director will report to the Secretary of Technology. Direct operational responsibilities for administering an entity’s security program will be provided by a resource network of state and local government employees. The resource network could be viewed as a security “SWAT team” of pre-approved, de-centralized volunteers who are deployed as needed when a security breach occurs.

3. Formalize the involvement of higher education in the development and operation of a statewide security program.

The expertise of the Center for Secure Information Systems at George Mason University and the Commonwealth Information Security Center at James Madison University are critical to the design and promotion of the security program. It is also anticipated that both Centers can provide or facilitate security training needs. Additional resources of security expertise from other institutions of higher education may be identified and recruited to participate.

4. Develop evaluation tools which measure cost savings generated by a statewide security program.

DTP will develop evaluation tools which help state agencies measure cost savings generated by the statewide security program. It is expected that a return on investment from this program will accrue primarily from cost savings due to early detection, containment, or avoidance of computer incidents. In addition, security staff augmentation and hardware and software purchases made off of statewide procurement contracts will result in more competitive pricing than in the current “as is” environment, especially for smaller entities. Revenue streams will be generated for consulting services, training fees, and general subscription fees.

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Establish statewide IT security program implementation plan and structure
October 2002	Identify critical IT infrastructure Implement security safeguards and emergency recovery procedures for critical infrastructure
November 2002	Begin conducting IT security audits
December 2002	Complete 2002 report on statewide IT security assessment
January 2003	Implement IT security direct response services
July 2003	Implement IT security infrastructure protection services Implement IT security education and promotion services Implement IT emerging technology watch services
December 2003	Complete 2003 report on statewide IT security assessment

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Establishing statewide IT security service level agreements with 100 percent of executive branch agencies, excluding institutions of higher education, by July 2003. (Metric = 62 IT security service level agreements.)
- Completing IT security audits for 100 percent of all executive branch agencies, including institutions of higher education, by December 2003. (Metric = 92 IT security audits.)

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

AGENCY PROJECT 3: Overhaul State Administrative Systems (Department Of Technology Planning)

While the private business sector rapidly assimilates advances in administrative systems and associated technologies that better support core business activities, the public sector, with few exceptions, continues to employ outdated administrative processes and systems. The Commonwealth currently maintains multiple, aging administrative systems that do not effectively and efficiently support the business of state government and do not realize the cost savings that naturally accrue from the centralization of administrative systems and technologies. Providing centralized, consolidated administrative systems will not only streamline the payroll, accounting, personnel, and benefits processes; but will open up opportunities for data collection, data mining, and enterprise-wide reporting.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

The Commonwealth currently supports legacy systems for statewide budgeting (Program Budgeting System--PROBUD), accounting (Commonwealth Accounting and Reporting System--CARS), personnel (Personnel Management Information System--PMIS), benefits (Benefits Eligibility System--BES), payroll (Commonwealth Integrated Payroll/Personnel System--CIPPS), and fixed assets (Fixed Asset Accounting and Control System--FAACS). All of these systems are mainframe-based, hosted at the DIT data center, and grew out of applications developed from the late 1960's through the mid-1980's. All have been enhanced over the years, including the provision of limited online interfaces.

With some notable exceptions, these systems provide consolidated statewide data within their respective subject areas. Agencies from all branches of government feed data into the CARS and CIPPS systems. However, the eight universities operating under the state's decentralization initiative only submit summary data by subobject code, not individual transactions, to CARS. Likewise, decentralized institutions and agencies outside the executive branch are not obligated to use PMIS or CIPPS.

Over the years, most agencies of any size have developed their own in-house administrative systems that they use for day-to-day management purposes. Each of these systems has interfaces that feed the central systems with required data. In their 2001 IT portfolio submissions, executive branch agencies identified some 52 systems used within their organizations in such a manner. Moreover, executive branch agencies' 2001 strategic IT plans identified a total of 35 future projects for enhancement to or replacements of such systems (including 11 within institutions of higher education).

The current hodgepodge of administrative systems is an appropriate opportunity to apply contemporary technology tools to streamline service provision and provide more cost-effective platforms for statewide

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

applications. The concept of replacing statewide administrative systems with a suite of ERP modules is no longer an abstract one, with several states having begun such efforts.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, the Commonwealth will renew its focus on increased efficiencies and effectiveness that should be gained from centralization and consolidation of state administrative systems. There will be a recognition that the use of standardized enterprise resource planning (ERP) systems, including the uniform business process reengineering needed to effectively support their application, has become a recognized business best practice.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

- 1. Develop a business case for modernizing the Commonwealth’s financial and human resource information processes and systems.**

The Secretary of Technology has authorized the Enterprise System Workgroup of the Council on Technology Services. The workgroup’s charter defines its mission as developing a business case for the modernization of Virginia’s administrative systems.

- 2. Governor’s Executive Order requiring the Secretaries of Technology, Finance, and Administration to jointly develop a strategic plan and schedule for overhauling the existing statewide administrative systems.**

By April 2003, the Secretaries will develop a strategic plan that presents the business case for modernizing the Commonwealth’s budgeting, financial, and personnel systems and outlines the goals, objectives, strategies, and schedule for a proposed modernization project. The scope of modernization activity will transcend all agencies and secretariats; however, initial emphasis will be on the Commonwealth Accounting and Reporting System (CARS), Commonwealth Integrated Payroll/Personnel System (CIPPS), Benefits Eligibility System (BES), Fixed Asset Accounting and Control System (FAACS), Personnel Management Information System (PMIS), and Program Budgeting System (PROBUD).

SECRETARY'S INITIATIVE 2: CONSOLIDATE IT INFRASTRUCTURE & PROVIDE CENTRALIZED SERVICES

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Formalize involvement of Secretaries of Finance and Administration Charter and organize the planning team
October 2002	Complete detailed assessment of the "as is" environment Identify strategic goals and objectives
December 2002	Complete business case for modernization, including a credible ROI at agency and Commonwealth levels, using both qualitative and quantitative measures
January 2003	Identify strategies, proposed project schedule, and estimated project costs
February 2003	Complete project risk assessment
March 2003	Coordinate final plan with all key stakeholders
April 2003	Publish the plan

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Establishing the business case that current administrative systems can be replaced for an amortized annual cost at least 20 percent less than the current total annual direct and indirect costs of operating, maintaining, and utilizing such systems.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

INTRODUCTION

The Code of Virginia vests the Secretary of Technology with statutory responsibility for guiding the effective management of technology in the Commonwealth. (See Title 2.2, § 2.2-226.) To help fulfill that responsibility, the Commonwealth should plan, budget, and track information technology to encourage investment and return on investment, i.e., the best value for price paid. The current biennial budget cycle hinders the concept of viewing IT resources as investments. Funding for IT that enables strategic business-driven needs should not be constrained by a legislative cycle. Rather, funding for IT should be evaluated and managed as an investment in assets contributing to the overall benefit of the Commonwealth. A capital planning and funding process should be established by which funding decisions are based on, and aligned with, appropriate investment return (hurdle) rates, over acceptable investment time periods.

If the Commonwealth makes effective investment in and implementation of information technology, potential savings could be realized. Development of comprehensive planning, budgeting, and tracking methods is essential and will define a structured, disciplined approach to insure that effective investments are made and that a current inventory of statewide IT resources is maintained.

The agency projects within this Secretary's initiative are:

- Develop a capital planning and funding process for information technology;
- Develop a comprehensive technology management policy; and
- Improve systems to track information technology expenditures.

AGENCY PROJECT 1: Develop A Capital Planning And Funding Process For Information Technology (Department Of Technology Planning)

Establishing a technology fund for enterprise-wide projects will enable agencies to move from a reactive spending model to a proactive one, which will be based on the strategic planning process set forth by the Secretary of Technology and the Department of Planning and Budget. Projects that benefit the entire enterprise will have a central source of funding.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

The Commonwealth's current IT capital planning and funding process is marked by the following characteristics:

- Funding is decentralized to the agencies and based on a biennial budget cycle, i.e., two-year funding cycles, regardless of the length of the project.
- Incentives to save dollars in IT projects are minimal as any agency IT savings are swept up by the legislature or the Department of Planning and Budget.
- Since funding and planning for IT projects is decentralized, potential enterprise-wide projects must be funded at the agency level.
- All projects are evaluated and prioritized at the agency level. Agency IT requests over \$100,000, and less than \$1 million, are evaluated for approval by the Department of Technology Planning. IT requests of \$1 million and higher require the additional approval of the Secretary of Technology.
- A discretionary technology fund for enterprise-wide projects does not exist.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

To ensure the best value for the price paid, the Commonwealth's “to be” IT capital planning and funding process should emphasize strategic investments in enterprise-wide IT projects. This environment will be characterized by:

1. Definition of enterprise-wide IT projects as those which demonstrate an ability to implement the following business enterprise strategies:
 - Improving the quality of information and decision making;
 - Promoting continuous improvement;
 - Improving procurement of goods and services;
 - Optimizing service delivery by improving stewardship of limited resources;
 - Promoting collaboration and cooperative systems development; and
 - Reducing gaps between availability and adoption of technology.
2. Establishment of a fund expressly reserved for enterprise-wide IT projects.
3. Multi-biennial funding commitments from the fund for approved IT enterprise projects. Appropriation and release of funds to be explicitly based on achieving specified milestone deliverables.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

4. Requirement of a reinvestment of a percentage of cost savings back into the fund.
5. Evaluation, approval, and prioritization of agency project requests from the fund based on a:
 - Strong alignment to enterprise business strategies;
 - Solid business case supported by a favorable return on investment and total cost of ownership;
 - Proven technical feasibility; and
 - Strong alignment to IT enterprise architecture policies, standards, and guidelines promulgated by the Department of Technology Planning.
6. Review of initial agency project requests and evaluation of ongoing funding commitments to be conducted by the Department of Technology Planning and the Department of Planning and Budget, with assistance from the Council on Technology Services. Recommendations to be vetted via an investment governance board comprised of cabinet secretaries and chaired by the Secretary of Technology.
7. IT project funding requests which do not meet the criteria for initial or ongoing funding as an enterprise-wide project are to be evaluated and prioritized within the requesting agency's budget.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Redesign the Commonwealth's IT capital planning and funding process to emphasize strategic investments in enterprise-wide IT projects.

An implementation plan is underway in the Department of Technology Planning that establishes the tasks required to design, develop, and implement the Commonwealth's desired capital planning and funding process. The plan will address resources, schedules, costs, performance measures, etc. It is anticipated that legislation will be required in the 2003 Session to create the proposed enterprise project fund.

2. Publish policies, standards, and guidelines for IT capital planning and funding process.

The Department of Technology Planning will publish policies, standards, and guidelines necessary to implement the Commonwealth's desired capital planning and funding process.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Submit legislative proposal to Governor's Policy Office and Department of Planning and Budget
November 2002	Complete review and approval of legislative proposal
January 2003	Introduce legislation
April 2003	Legislation enacted and approved
July 2003	Legislation effective Publish policies, standards, and guidelines to implement IT capital planning and funding process

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Adoption and implementation of the IT capital planning and funding process by 100 percent of all executive branch agencies by September 2003.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

AGENCY PROJECT 2: Develop A Comprehensive Technology Management Policy (Department of Technology Planning)

A comprehensive technology management policy establishes an IT investment management-based IT strategic planning methodology for selecting, controlling, and evaluating IT investments that best support the business needs of the Commonwealth. The Enterprise Program Management and Commonwealth Project Management components of the policy, along with the supporting tools, will establish standard, repeatable processes, based on best practices, to effectively implement technology. Implementation of the policy will improve support to agencies, establish clear levels of accountability for technology investments and projects, and provide for continuous identification and management of risks.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

A comprehensive technology management policy does not currently exist within the Commonwealth. Current technology management practices provide little, if any, structured guidance on how technology investments decisions should be made. As a result, opportunities to enhance program and project management capabilities and to increase IT project success are diminished. The Secretary of Technology has directed DTP to draft a new, comprehensive technology management policy. To assist in the development of standards, guidelines, and tools which support the policy, the Council on Technology Services has chartered a Technology Management Workgroup.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

The CTM policy will be based on IT Investment Management (ITIM) practices, that treat the management of IT resources as assets within an investment portfolio. The CTM policy will provide an overarching framework for the management of technology. The policy will include: IT Strategic Planning (ITSP), Enterprise Program Management (EPM), and Commonwealth Project Management (CPM). The objectives of the CTM policy are to:

- Establish a methodology for selecting, controlling, and evaluating IT investments that best support the business needs of the Commonwealth;
- Provide a framework for the migration from current enterprise architecture to the desired future enterprise architecture; and
- Define a process to ensure that technology IT projects deliver business value on time and within budget.

**SECRETARY’S INITIATIVE 3:
PLAN, BUDGET, AND TRACK IT EXPENDITURES**

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Publish the CTM policy.

The CTM policy is being developed by the Department of Technology Planning and represents a consolidation of statutory requirements; current policies, standards, and guidelines; industry “best practices”; and guidance from the Secretary of Technology.

2. Implement supporting tools.

Complete execution of the CTM policy during 2002-2003 will require DTP to develop and implement supporting tools, including: ITSP, EPM, and CPM standards and guidelines; web-based technology management support systems such as the Major Project Status Reporting System (known as the “dashboard” project) and the Procurement and Project Approval Request (PPAR) System; and training and development activities such as templates, centers of excellence, reference libraries, and workshops.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Publish CTM Policy and CTM Glossary Standard
December 2002	Publish Commonwealth Project Management Guideline Complete project management forms and templates
May 2003	Publish IT Strategic Planning Standard
June 2003	Publish Technology Portfolio Management Standard Publish Commonwealth Project Management Standard Publish Program Management Guideline Publish Program Management Standard Publish IT Strategic Planning Guideline
	Complete Procurement and Project Approval Request System Complete project manager development program
	Create centers of excellence Create reference libraries
	Develop workshops

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- The number and percentage of major IT projects rated "on track" by the Secretary of Technology will be 65 percent in year one and 80 percent in year two.

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

AGENCY PROJECT 3:

Improve Systems To Track Information Technology Expenditures

(Department Of Technology Planning And Department of Information Technology)

Improving Commonwealth systems used to track technology budgeting and expenditures is essential to making sound, business investment decisions. An Information Technology Investment Management (ITIM) strategy is the foundation for the Commonwealth approach to technology management. Unless significant enhancements are made to the information systems now available, including the use of an expanded technology portfolio, Commonwealth decision makers will continue to make significant business investment decisions without a clear understanding of the current and planned technology investments that support their business strategies.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

The current Commonwealth Technology Portfolio is a repository for agency information technology investments organized from a business driven, application portfolio perspective. Information in the portfolio was designed to support both Commonwealth and agency IT strategic planning and to capture a current or “as is” view of the Commonwealth’s IT architecture. The Technology Portfolio can facilitate migration planning toward the “to be” Commonwealth IT architecture by allowing agencies to share data about their current portfolios, thereby enhancing the Commonwealth’s overall technology management processes.

However, the current Commonwealth Technology Portfolio is not integrated with the current Commonwealth Accounting and Reporting System (CARS). Historically, CARS expenditure codes have proven inadequate for capturing technology expenditures in terms of the current technology architecture. The Department of Planning and Budget (DPB), the Department of Accounts (DOA), and the Department of Technology Planning have discussed the need for revising or replacing CARS to better support identification of technology expenditures. As an interim solution, DTP, working closely with DPB, DOA,

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

and DIT, completed an update of the current CARS coding structure in May 2002 to better support identification of technology expenditures during the next budget biennium. The CARS update provides a stop-gap measure for capturing more accurate IT expenditure information.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

A long-term solution to accurate accounting of technology expenditures will be incorporated into a “Version 2” upgrade of the current Commonwealth Technology Portfolio. Version 2 will incorporate appropriate integration of CARS (or the CARS replacement) and related management information systems. The Secretaries of Administration, Finance, and Technology will collaborate in development of the portfolio through, respectively, the Department of Human Resource Management, the Departments of Planning and Budget and Accounts, the Departments of Information Technology and Technology Planning, and the Council on Technology Services. The proposed “to be” solution will implement best practices gleaned from the current Commonwealth Technology Portfolio and provide additional information about technology assets, vendors, projects, personnel, and cost data. Version 2 of the Technology Portfolio will require integration with CARS, the Fixed Asset Accounting and Control System (FAACS), Personnel Management Information System (PMIS), Program Budgeting System (PROBUD), the Commonwealth Procurement and Project Approval Request (PPAR) System, and the Commonwealth Major IT Project Status Reporting System (“dashboard”).

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

- 1. Governor’s Executive Order to require the Secretaries of Technology and Finance to jointly develop systems that accurately budget and account for IT expenditures.**

The Secretaries of Technology and Finance will jointly develop improvements to the Commonwealth’s budgeting, accounting, and reporting systems to adequately track and measure Virginia’s IT expenditures and the performance of IT investments in meeting defined business objectives. This portion of the project will require extensive integration, intensive management, and exceptional cooperation between agencies in both secretariats and other participating organizations.

- 2. Implement Version 2 of the Commonwealth Technology Portfolio.**

A preliminary analysis of Version 2 project requirements, schedule, and costs is underway in the Department of Technology Planning. Use of Version 2 by state agencies during the 2004-2006

SECRETARY'S INITIATIVE 3: PLAN, BUDGET, AND TRACK IT EXPENDITURES

strategic planning and budgeting cycle will require complete implementation of the project by July 2003.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Charter Version 2 project team Implement web site
October 2002	Complete project plan
November 2002	Complete Version 2 requirements
February 2003	Complete data analysis/modeling/design
March 2003	Develop appropriate IT portfolio management and reporting standards and guidelines
April 2003	Complete development of Version 2 Complete systems and end user test plans
May 2003	Complete systems and end user testing
June 2003	Complete Version 2 rollout to agencies to include supporting investment management process changes

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- Version 2 of the Commonwealth Technology Portfolio will support investment management decisions during execution of the FY 2004-2006 budget.
- By July 2003, investment management process changes that utilize information from the Commonwealth Technology Portfolio, will be adopted by 100 percent of state agencies.
- By July 2004, Version 2 of the Commonwealth Technology Portfolio will provide sufficient information to support an investment decision 90 percent of the time, with not more than 10 percent of investment decisions requiring information from sources outside of the portfolio.
- By July 2005, through the utilization of improved investment management processes and information from the Commonwealth Technology Portfolio, Commonwealth IT cost savings are predicted.

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

Procurement of technology (information technology and telecommunications) products and services for state agency and local government use is an essential component of managing technology in the Commonwealth. On July 1, 2002, the Department of Information Technology became authorized to procure technology goods and services of every kind (i) for its own benefit or on behalf of other state agencies and institutions or (ii) by such other agencies or institutions to the extent authorized by the Department of Information Technology. This change provides the Secretary of Technology, through the Department of Information Technology, the opportunity to define and implement an improved technology procurement process that will enable the Commonwealth to consolidate and leverage its purchasing power for products and services and improve internal business processes associated with acquisition of technology, leading to a more efficient and effective use of Commonwealth funds and personnel and an ability to explore all options to focus on core business activities.

AGENCY PROJECT 1:

Develop And Implement A Best Practice Model For Information Technology Procurement (Department Of Information Technology)

A new technology procurement business process based on best practices will:

- enable the Commonwealth to consolidate and leverage its purchasing power for technology products and services;
- embrace and implement innovative solutions and tools to meet the Commonwealth's business, technology, and procurement requirements;
- emphasize customer and vendor involvement; and
- increase the use and usefulness of statewide technology contracts by the Commonwealth's organizational entities.

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

In the “as is” environment, approximately 100 statewide contracts for IT goods and services are in place. Measurement data relating to statewide contracts is generally incomplete, unavailable, or difficult to obtain. Use of statewide contracts is not mandatory by state agencies except for telecommunications services. The Commonwealth's current governance model and procurement environment are decentralized to the agency level. Some aspects of existing procurement processes are not being sufficiently addressed at the agency level, e.g., requirements definition and contract administration and compliance.

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

In an effort to centralize IT procurement, House Bill 519 was enacted and became effective on July 1, 2002. (See House Bill 519, Chapter 579, 2002 Acts of Assembly.) The legislation transfers sole authority to procure IT goods and services to the Department of Information Technology, which had already been vested with authority to procure all telecommunications services for state agencies. House Bill 519 provides the means to make significant improvements in the existing IT procurement business process. For example, DIT is authorized to develop policies and procedures that address the unique characteristics of IT procurements and to implement procurement solutions and tools that reflect best practices for IT procurements.

House Bill 519 requires that all new procurement policies and procedures comply with Virginia's Administrative Process Act (Title 2.2, § 2.2-4000 et seq.), which typically involves a rigorous and lengthy approval process. DIT's new technology procurement policies and procedures will not be formally adopted until compliance with the administrative process is complete. In the interim, IT procurements will continue to be governed by existing procurement policies and procedures in the Agency Procurement and Surplus Property Manual, published by the Department of General Services. Compliance with the Administrative Process Act is expected to decrease the speed with which implementation of new procurement policies and procedures and future revisions can be made.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, the Department of Information Technology will develop and implement a best practices model for centralized IT procurements which:

- is paperless, one stop, and easy for customers and for business;
- is solutions, not product, oriented;
- is business driven and managed, not overshadowed by the procurement process itself;
- is enterprise oriented to effectively leverage our buying power;
- has contract vehicles that are standardized, fair and effective;
- is performance based; and
- invites, promotes, and sustains positive industry partnerships, particularly with small-, minority-, and women-owned businesses.

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Determine the opportunities for consolidating and leveraging technology purchases across the Commonwealth.

DIT has already gathered, or will gather, information about:

- the top technology vendors in the Commonwealth for FY 2002 (based on dollars paid out to those vendors);
- the “inventory” of technology assets in place throughout agencies in Virginia;
- the technology budget plans for FY 2003; and
- an inventory of statewide technology contracts currently in place.

DIT will work with agencies, institutions of higher education, localities, the Secretary of Technology, the Council on Technology Services, the Department of Technology Planning, and its IT partners to identify and implement contract consolidation opportunities and prioritize and implement statewide contracts.

2. Research, define and implement a “best practices” business model for delivery of technology procurements and contracts that will support the consolidation and leveraging of the Commonwealth’s purchasing power, while streamlining and reducing the time required for conducting the associated procurement and contracts business processes.

DIT will work with agencies, institutions of higher education, localities, the Secretary of Technology, the Council on Technology Services, the Department of Technology Planning, and its IT partners to determine business needs, implement innovative procurement solutions and tools to fulfill those needs, and identify best practices.

This effort will require close examination of existing statutes, Executive Order 29 (2002), future reports and recommendations of the Governor’s Commission on Efficiency and Effectiveness and the Joint Commission on Technology and Science, and current procurement practices, policies, and procedures to identify legal and practical barriers to improved IT procurement processes. The time required to complete requests for proposals (RFPs) and invitations to bid (IFBs) for statewide and spot procurements will be included.

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

3. **Involve customers and vendors/partners in the technology procurement business process to ensure that the deliverables of that process meet or exceed customer expectations while, at the same time, establish and maintain “best practices” contracts/agreements with vendor/partners.**

DIT will work with agencies, institutions of higher education, localities, the Secretary of Technology, the Council on Technology Services, the Department of Technology Planning, and its IT partners to define customer and vendor/partner expectations and to establish the business processes required to address those expectations. As part of maintaining contracts/agreements with vendors/partners which utilize best practices, DIT will establish a process to monitor and modify, with assistance from the Office of the Attorney General, the terms and conditions of the Commonwealth's technology contracts.

4. **Expand the use and usefulness of statewide technology contracts by focusing those contracts on the products and services of greatest need in the Commonwealth as a whole and marketing the availability of those contracts throughout the Commonwealth.**

The number of statewide contracts will be reported at the end of each month in FY 2003. DIT will work with agencies, institutions of higher education, localities, the Secretary of Technology, Council on Technology Services, Department of Technology Planning, and its IT partners to communicate information about and market the availability of statewide contracts.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2002	Establish procurement procedures required to implement HB 519 Develop legislative proposal to address expedited IT procurement and submit to Governor's Policy Office and Department of Planning and Budget Establish procurement oversight process and organization
November 2002	Complete review and approval of legislative proposal
January 2003	Introduce legislation Complete recommendation for changes to terms and conditions in technology contracts Identify and prioritize specific opportunities for consolidating and leveraging technology purchases across the Commonwealth Establish a database for customer and vendor/partner information and promotional plans for procurements Define all requirements of the new procurement business model

SECRETARY'S INITIATIVE 4: MANAGE IT PROCUREMENT

Completion Date	Deliverable
February 2003	Begin implementation of action plans, priorities, and associated metrics for consolidating/leveraging Virginia's purchasing power; communicating with, determining, and measuring expectations of major customers and vendors/partners; and marketing products and services on statewide contracts
April 2003	Legislation enacted and approved
July 2003	Legislation effective
November 2003	Complete changes to policies and procedures and vendor procurement manual

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- The average time to process an IFB or an RFP will improve by 10 percent from July 1, 2002 to June 30, 2003.

ONE VIRGINIA

GOVERNOR’S IMPERATIVE:

*“Ensure That All of Virginia Shares In The Growth And Success
Of Our Participation In The Global Market Of The Future”*

INTRODUCTION

Virginia state government’s commitment to technology extends beyond efficient and effective use of information technology to improve internal government operations. An external obligation exists to foster a technology-friendly business climate across the entire Commonwealth. It is clear that all of Virginia must participate in the benefits of economic development and that all Virginians—students, workers, and seniors—must be provided the opportunity to excel in the 21st century. In some cases, this will include reaching out to underserved regions and populations to make sure they are included in opportunities for economic development, education, and government contracts. Coupled with the understanding of the power and promise that technology-based economic development holds, we can create “One Virginia,” propelled by technology offering prosperity for all.

In support of the Governor’s imperative to create “One Virginia,” the following Secretarial initiative and agency project is described in detail in the next section of this strategic plan:

Secretary’s Initiative 5 – Increase federal research and development dollars

Agency Project 1: Enhance federal funding to Virginia’s colleges and universities and industry

SECRETARY'S INITIATIVE 5: INCREASE FEDERAL RESEARCH & DEVELOPMENT DOLLARS

INTRODUCTION

A vibrant and well-funded statewide research and development infrastructure is essential to create “One Virginia.” Given its geographic proximity to the federal government and its strong record of attracting funds for government and industry, Virginia needs to attract more than its fair share of research and development (R&D) funding to its colleges and universities, and the industries and communities that work with and support them. These institutions and their satellite centers and offices are located throughout the Commonwealth. As a result, benefits from additional R&D funding will generate capital investments and increased employment throughout Virginia. Virginia recently ranked eighth in the 2001 New Economy Index produced by the Progressive Policy Institute. (Virginia ranked 12th in 1999.) Moving up further in these rankings will require an effort from the Commonwealth as a whole and not just from selected prosperous regions.

AGENCY PROJECT 1: Enhance Federal Funding To Virginia's Colleges and Universities And Industry (Center For Innovative Technology)

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

Federal statistics paint a potentially misleading picture of Virginia's “as is” environment. 1999 data from the National Science Foundation (NSF) showed Virginia ranked third in overall federal research and development (R&D) obligations with \$5.75 billion received. However, much of those funds do not stay in the Commonwealth but flow through industrial and government service intermediaries to other destinations.

NSF's 1999 statistics also showed that total academic R&D in Virginia, including industry-funded R&D, totaled \$523 million. Virginia's colleges and universities, however, received only \$264 million in 1999 and \$283 million in 2000. Four of Virginia's historically black colleges and universities (HBCUs) received \$13 million total in 2000.

When compared to other states, Virginia has no institutions of higher education ranked in the top 50 listing of R&D expenditures compiled by NSF. In the 2000 ranking, only two Virginia institutions made

SECRETARY'S INITIATIVE 5: INCREASE FEDERAL RESEARCH & DEVELOPMENT DOLLARS

the top 100: Virginia Polytechnic Institute and State University (51) and the University of Virginia (58). Five institutions appeared in the top 200: Virginia Commonwealth University (106), the College of William and Mary (157), George Mason University (173), Old Dominion University (180), and Eastern Virginia Medical College (188). Part of the reason for Virginia's relatively weak national rankings may be that Virginia's congressional delegation has historically been reluctant to earmark funds for higher education. During the period from 1997 to 2001, the Commonwealth ranked 38th among the states in Congressional earmarking. The practice has increased recently, however, and as a result, Virginia ranked 25th among states in Congressional earmarking for 2001, with \$17.2 million out of a total \$1.67 billion.

Other important sources of federal funds, from an economic development perspective, are the Small Business Innovation Research (SBIR) program and the Commerce Department's Advanced Technology Program (ATP). Both programs fund companies in early or high-risk R & D stages when traditional and venture funding is difficult to acquire. Virginia has consistently done well in SBIR funding, although the Commonwealth's share of actual dollars received has been static at about six percent of the total. Virginia ranks third among the states behind Massachusetts and California in SBIR funding. In contrast, only 30 Virginia companies have participated in ATP since 1990 and represent a total federal investment of \$43.3 million, ranking Virginia thirteenth among the states.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, Virginia will improve its capture of federal R&D funding, particularly for its college and universities. In the “to be” environment, major stakeholders will commit to an exceptional level of cooperation and collaboration and CIT will coordinate their efforts.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

- 1. Increase research and development funding for Virginia's colleges and universities, including the historically black colleges and universities (HBCUs).**

Improvements in Virginia's rankings for research and development will contribute to overall economic development goals for the Commonwealth.

- 2. Increase Virginia's SBIR funding.**

Increasing Virginia's SBIR funding through the outreach and support efforts of its partnership with

SECRETARY'S INITIATIVE 5: INCREASE FEDERAL RESEARCH & DEVELOPMENT DOLLARS

the Small Business Administration's (SBA's) Federal and State Technology Program (FAST) will result in improving the economic development potential for participants in this federal program. The purpose of Virginia's FAST program is to increase SBIR applications from regions outside of Northern Virginia, to increase participation by minority and women-owned businesses, to diversify the applicant pool (particularly towards biotechnology companies), and to improve the commercialization rates for SBIR-funded technologies.

3. Increase Virginia's ATP funding.

Additional Advanced Technology Program (ATP) projects will improve Virginia's access to early stage high risk funding for new technologies.

4. Develop a unified statewide list of research and development priorities.

In its role as coordinator of the major stakeholders, CIT will create a mechanism for developing a unified statewide list of research and development priorities and communicating those priorities to federal appropriators.

TIMETABLE FOR DELIVERABLES

Completion Date	Deliverable
September 2003	Designate lead personnel on federal initiatives
December 2002	Establish proposal teams
February 2003	Develop unified statewide list of research and development priorities
March 2003	75 SBIR proposals submitted
April 2003	Submit six federal funding proposals
June 2003	Announce SBIR and ATP awards Announce federal R & D awards Federal R&D funding to colleges and universities to increase by 20 percent
July 2003	SBIR funding increased by one percent of the national total
July 2004	ATP funding increased by 25 percent

SECRETARY'S INITIATIVE 5: INCREASE FEDERAL RESEARCH & DEVELOPMENT DOLLARS

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- By the end of FY 2003, federal research and development funding to Virginia's colleges and universities will increase by 20 percent (\$57 million over projected 2002 federal obligations), including an additional \$2.6 million that CIT will assist Virginia's historically black colleges and universities to capture. Funding levels will be reported by the National Science Foundation (NSF).
- By the end of FY 2003, CIT will increase Virginia's share of total federal SBIR funding from 6 percent to 7 percent, an increase of approximately \$10.8 million over current funding levels, as reported by the Small Business Administration.
- By the end of FY 2004, CIT will increase ATP funding to Virginia's companies by an additional \$10.8 million, a 25 percent increase over funding received to date, as reported by the U.S. Department of Commerce.

ECONOMIC DEVELOPMENT

GOVERNOR'S IMPERATIVE:

“Help Develop Virginia As A Major Entity

In The Global Economic Marketplace Of The Future”

INTRODUCTION

The Commonwealth's commitment to technology also extends to an external obligation to develop Virginia's technology industry as a whole in the world marketplace. The Governor's imperative builds on Virginia's long-standing commitment to this external obligation. To illustrate, as recently as July 2002, Virginia was recognized as the only state in the nation to move up in a national ranking of high technology job markets. This growth in technology employment moved Virginia up to sixth place nationwide by technology employment, according to *Cyberstates 2002: A State-by-State Overview of the High Technology Industry*, a report released by the American Electronics Association. For the second straight year, Virginia moved up in state ranking by technology employment, replacing Illinois this year in sixth place.

According to the Progressive Policy Institute, “The most successful states...are the ones that do the best job of helping entrepreneurial companies grow.” Virginia has experienced increasing success in attracting and growing entrepreneurial technology companies. According to data from the Virginia Employment Commission, Virginia has averaged 7.9 percent growth in technology companies over the past decade. Therefore, as it responds to the Governor's imperative to develop as a major global competitor, Virginia must focus on growing and attracting entrepreneurial technology companies. These companies tend to be small and young, although larger, older companies, particularly in the technology field, can also be entrepreneurial.

Some of these companies have had the foresight to expand in rural and underserved communities or to form partnerships with Virginia's colleges and universities. Other companies spin out of the Commonwealth's colleges and universities or develop from technologies licensed from these facilities. In terms of the dollar return for research dollars expended, Virginia schools are not as well known as some of the larger and more established schools, but some Virginia schools have become quite competitive in

**SECRETARY'S INITIATIVE 6:
INCREASE COMMERCIALIZATION OF INTELLECTUAL PROPERTY**

their technology transfer efforts. In addition to increased commercialization, entrepreneurial technology companies need the infrastructure in place that enables them to expand throughout the Commonwealth.

Thus, the need for ubiquitous access to affordable broadband services is a key component of the Governor's imperative.

In support of the Governor's global competitiveness imperative, the following Secretarial initiatives and agency projects are described in detail in the next section of this strategic plan:

Secretary's Initiative 6 – Increase commercialization of intellectual property from Virginia's labs, entrepreneurs, and institutions of higher education

Agency Project 1: Commercialize intellectual property from colleges, universities, and laboratories and grow entrepreneurial companies

Secretary's Initiative 7 – Enhance economic development, especially in Virginia's rural areas, by increasing statewide broadband deployment

Agency Project 1: Consolidate responsibility for statewide broadband deployment

Secretary's Initiative 8 – Promote technology-based economic development in Virginia

Agency Project 1: Grow technology companies

SECRETARY'S INITIATIVE 6: INCREASE COMMERCIALIZATION OF INTELLECTUAL PROPERTY

INTRODUCTION

The contribution of small, fast-growing entrepreneurial companies has been documented by economists at the Massachusetts Institute of Technology and the National Commission on Entrepreneurship. These high growth companies create at least two-thirds of all new jobs, account for at least two-thirds of the innovation, and act as agents of change. Many of these companies spin out of colleges and universities or are attracted to the intellectual resources, research facilities, and academic environment available at institutions of higher education. The successful transfer of intellectual property (IP) created and protected by colleges and universities is inextricably tied to the growth of these entrepreneurial firms.

AGENCY PROJECT 1:

Commercialize Intellectual Property From Colleges, Universities, And Laboratories And Grow Entrepreneurial Companies (Center For Innovative Technology)

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

Of Virginia's 12,303 technology companies, 8,530 have fewer than 10 employees. At the height of the economic cycle in 1999 and 2000, between 2,700 and 3,000 new technology companies were started each year. For 2001, an estimated 3,300 new technology companies were started.

Although most of Virginia's colleges and universities have some form of technology transfer office, only four Virginia institutions reported licensing and patent data in a 2000 survey conducted by the Association of University Technology Managers (AUTM). Only two of the four universities tracked licenses awarded to Virginia companies. Collectively, the four institutions reported 329 disclosures, 299 patents applied for, 98 new licenses and options, 180 licenses providing some income, and 13 start-up companies created. Total income reported was \$6.67 million. Fifty-three percent of the University of Virginia's 2000 and 2001 licenses went to Virginia companies; only about 33 percent of Virginia Commonwealth University's licenses went to Virginia companies. The institutions acknowledged that technology transfer operations are, at best, a break-even proposition in terms of income earned from technology transfer activities.

Virginia's federal laboratories also create intellectual property that is available for licensing. In many cases, these laboratories attract new companies to their outskirts in ways similar to colleges and universities. NASA Langley, which is one of the largest federal laboratories, annually averages 130 disclosures, 28 patents issued, 8 patent licenses executed, and 12 commercial research and development agreements.

SECRETARY'S INITIATIVE 6: INCREASE COMMERCIALIZATION OF INTELLECTUAL PROPERTY

The creation of companies by faculty and students spun out of colleges and universities is one measure of entrepreneurial maturity for that geographic area. Virginia Polytechnic Institute and State University lists nearly 80 companies started by its faculty; VCU, 25. The University of Virginia has spun out several dozen faculty companies and recently opened its second research park to accommodate increased demand for office space and facilities.

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, technology transfer operations at Virginia's institutions of higher education will contribute to Virginia's economic development goals and will place a higher priority on Virginia-based deals. Intellectual property will be transferred and commercialized much more easily as best practices are identified, catalogued, and disseminated, resulting in the creation and growth of entrepreneurial companies in Virginia.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Publish a guidebook of best practices.

CIT will develop a guidebook of best practices for entrepreneurs that collects the best information and data available and provides a road map for entrepreneurs creating new technology companies. Wide distribution of the guidebook will expand the audience of potential entrepreneurs and promote more technology start-ups and spin-offs.

2. Make university and laboratory IP easily accessible to interested companies.

CIT will make university and laboratory IP easily accessible to interested companies by augmenting the marketing process through training and electronic channels. Improving the electronic dissemination of university and laboratory IP will result in increased access to technology transfer opportunities for Virginia companies with Virginia's research institutions.

3. Increase the licensing of IP at institutions and federal labs.

Increasing licensing, particularly by Virginia companies, will increase the number and diversity of technology companies operating in Virginia.

**SECRETARY'S INITIATIVE 6:
INCREASE COMMERCIALIZATION OF INTELLECTUAL PROPERTY**

4. Identify centers of excellence.

CIT will identify current and future university-based centers of excellence to serve as sources of technology available for commercialization. Focusing on those centers of excellence with successful records of commercialization will amplify the effect of these centers.

5. Increase the number of technology start-up companies in Virginia as a whole, especially the number of companies spun out of Virginia's colleges and universities.

Increasing technology start-ups will grow the employment base and expand the economic development impact of technology around the Commonwealth. Increasing faculty spin-off and other college- and university-based ventures will increase the culture of entrepreneurship at Virginia's institutions of higher education.

TIMETABLE AND DELIVERABLES

Completion Date	Deliverable
September 2002	Perform baseline study to evaluate technology transfer efforts of Virginia's universities and federal labs
September 2002 Quarterly	Identify 30 companies for potential licenses and identify 15 technologies to promote licensable technologies to (from universities and federal labs)
March 2003	Publish university IP data on InnovationAvenue web site
June 2003	Publish entrepreneurship guidebook Set goals for increasing licenses and new company formations Establish working relationships and memoranda of understanding with major federal labs on technology transfer activities Identify current and future university-based centers of excellence

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- CIT will obtain a benchmark on the number of licenses awarded to Virginia companies in FY 2003 and increase the percentage of licenses to Virginia companies to 40 percent of the state-wide total by FY 2004.
- By the end of FY 2003, CIT will facilitate a 10 percent increase in technology start-ups state-wide (about 330) and a 20 percent increase in university-based start-up or spin-off technology companies. At an average annual salary of \$75,000 for a technology job, this will create an estimated economic impact of \$25 million.

SECRETARY'S INITIATIVE 7: ENHANCE ECONOMIC DEVELOPMENT BY INCREASING STATEWIDE BROADBAND DEPLOYMENT

INTRODUCTION

Most localities, particularly rural localities, have considerable interest in improving their communities through technology-based economic development. Access to the Internet through high-speed, high-quality, affordable communications services, also known as broadband, is widely recognized as a critical component to providing the underlying infrastructure for "One Virginia." Data indicates that over 80 percent of Virginia's companies are connected to the Internet; however, many Virginia households and small businesses do not have access to affordable broadband. Broadband access can be provided through wireline (such as cable modems and digital subscriber lines), wireless (such as cell phones, personal digital assistants, and other handheld devices), and satellite services.

**AGENCY PROJECT 1:
Consolidate Responsibility for Statewide Broadband Deployment
(Center For Innovative Technology And Department Of Information Technology)**

WHERE WE ARE TODAY – THE "AS IS" ENVIRONMENT

Virginia's executive and legislative branches have been working for years on the issue of expanding broadband and other IT services in Virginia. As a result, three programs that provide broadband are available. The Center for Innovative Technology administers Virginia Link. This program permits private businesses and localities in Virginia to purchase advanced telecommunications services from commercial providers at reduced rates negotiated by CIT. Virginia Polytechnic Institute and State University administers Net.work.Virginia, which provides telecommunications services primarily to Virginia's schools and institutions of higher education. The Department of Information Technology administers COVAnet, which permits public bodies of the Commonwealth to purchase broadband from commercial providers. None of these entities has authority to require providers to expand their service areas.

At the policy level, many studies are requested and bills introduced related to broadband during every legislative session. One such study, passed in the 2002 Session, is House Joint Resolution 163. The study requests the Center for Innovative Technology and the Secretary of Technology to "study the means for advancing affordable, high-bandwidth electronic networks in rural Virginia." Meetings of the study committee are being held throughout 2002. A final report is due November 30, 2002.

**SECRETARY'S INITIATIVE 7:
ENHANCE ECONOMIC DEVELOPMENT BY INCREASING STATEWIDE BROADBAND DEPLOYMENT**

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, every household and business in Virginia will be provided with the opportunity to purchase high-speed, high-quality, affordable broadband. Successful development of the “to be” environment will require a monumental effort by government and industry, not unlike implementation of rural telephone service and electricity in previous generations. Similar to those earlier infrastructure deployments, a key component of successful statewide broadband deployment lies in the highest level commitment of government and industry leaders. The benefits of statewide broadband deployment will be felt beyond rural Virginia. The entire Commonwealth will benefit economically as a result of providing superior quality, affordable broadband services throughout Virginia.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Designate an entity to have responsibility for statewide broadband deployment.

Such an entity will be authorized to develop and coordinate broadband initiatives between the public and private sectors, create and implement incentives for commercial providers to increase their service areas, and serve as a central clearinghouse for existing broadband programs.

The entity, to consist of individuals in key leadership positions in industry and government, will include the Secretaries of Commerce and Trade, Education, Technology, and Transportation; industry representatives from telecommunications, cable, and Internet companies with a presence in Virginia, and representatives from the legislature, local government, business, public, and education constituencies. Staff resources from the Virginia Economic Development Partnership, Department of Business Assistance, DIT, CIT, institutions of higher education, and Virginia Department of Transportation will support the entity's work. It is anticipated that legislation will be required in the 2003 Session to designate an existing or create a new entity to have responsibility for statewide broadband deployment.

2. Develop maps of broadband coverage in Virginia.

To help support the work of the broadband entity, DIT, in partnership with the Virginia Geographic Information Network, will develop maps of broadband coverage in Virginia that include service providers reporting to the Federal Communications Commission, those included in the Virginia Link,

SECRETARY'S INITIATIVE 7: ENHANCE ECONOMIC DEVELOPMENT BY INCREASING STATEWIDE BROADBAND DEPLOYMENT

Net.work.Virginia, and COVANet contracts, and locations of local exchange carrier central offices plotted against demographic data from the latest census report (income, education, computer ownership, and cable television subscriptions).

3. Benchmark access to broadband and demand.

To help support the work of the broadband entity, CIT will conduct a benchmarking study of business and household access to and demand for high speed, high quality, affordable broadband, including wireline, wireless, and satellite services.

4. Develop a business case for consolidation of the Commonwealth's administration of telecommunications services contracts into a single entity.

To help support the work of the broadband entity, DIT, in partnership with CIT, Virginia Polytechnic Institute and State University, and the Virginia Department of Transportation, will identify the advantages and disadvantages of having a single state entity assume responsibility as contract administrator for the Commonwealth's telecommunications services contracts.

5. Create and implement incentives for commercial providers to increase service areas.

To help support the work of the broadband entity, DIT, in partnership with CIT, Virginia Polytechnic Institute and State University, the Virginia Department of Transportation, Virginia Economic Development Partnership, and Department of Business Assistance will create and implement methods to leverage the Commonwealth's buying power and encourage commercial providers to deploy broadband in targeted areas of the Commonwealth. The intent of the incentives will be to give commercial providers the necessary customer base to offer broadband to private citizens and businesses in Virginia's underserved areas.

6. Develop a business case for expanding contract coverage of networks administered by the Commonwealth to include non-public entities.

To help support the work of the broadband entity, DIT, in partnership with CIT, Virginia Polytechnic Institute and State University, the Virginia Department of Transportation, State Corporation Commission, and other appropriate entities will identify the advantages and disadvantages of having the Commonwealth expand contract coverage of the Commonwealth's networks to include non-public entities.

7. Increase demand for broadband by Virginia's citizens and businesses.

To help support the work of the broadband entity, CIT will develop and co-sponsor workshops with other public agencies and private businesses intended to increase demand for broadband by Virginia's citizens and businesses.

**SECRETARY'S INITIATIVE 7:
ENHANCE ECONOMIC DEVELOPMENT BY INCREASING STATEWIDE BROADBAND DEPLOYMENT**

TIMETABLE AND DELIVERABLES

Completion Date	Deliverable
Interim 2002	Coordinate with HJR 163 legislative study committee
September 2002	Submit legislative proposal to Governor's Policy Office and Department of Planning and Budget
October 2002	Develop maps of broadband coverage
November 2002	Complete review and approval of legislative proposal
January 2003	Introduce legislation
April 2003	Legislation enacted and approved
July 2003	Legislation effective Begin workshops to increase demand
August 2003	Complete business case for consolidated contract administration and begin implementation
September 2003	Determine contract incentives and begin implementation
October 2003	Complete business case for expanded contract coverage and implementation process
November 2003	Begin benchmarking analysis

MEASURING SUCCESS

The metrics by which success of this project will be measured are:

- One hundred percent of all households and businesses that request access in Virginia will be provided with the opportunity to purchase high-speed, high-quality, affordable broadband by January 2006.

SECRETARY'S INITIATIVE 8: PROMOTE TECHNOLOGY-BASED ECONOMIC DEVELOPMENT IN VIRGINIA

INTRODUCTION

Entrepreneurial growth companies contribute almost two thirds of all new jobs and growth to the economy. Improving their success rates and longevity will produce positive economic impact in Virginia. In addition, wages in the high technology industry far outpace average wages in other industries. A focus on improving the survival rates of technology start-up firms will yield measurable returns to the Virginia's economy. Expanding the horizons of technology companies to find new markets overseas and to attract foreign interest in their products and services will enhance their chances of success in the competitive global marketplace.

AGENCY PROJECT 1: Grow Technology Companies (Center For Innovative Technology)

WHERE WE ARE TODAY – THE “AS IS” ENVIRONMENT

Virginia's emphasis on growing technology companies has resulted in near doubling the number of technology firms in the Commonwealth from some 6,600 in 1995 to more than 12,000 in 2001. These companies collectively employ more than 300,000 people. A key component of this growth has been the continued influx of technology start-ups. Even in the difficult economic days of 2001, nearly 2,500 technology companies were started through the third quarter.

CIT currently works with more than 1,500 companies through its network of nine regional offices and partner organizations. In addition to typical business assistance activities, the regional directors provide technology firms with access to expertise at Virginia's institutions of higher education and federal laboratories. They also act as a clearinghouse for information and expertise from other state organizations, such as Virginia Economic Development Partnership, the Department of Business Assistance, and the Small Business Development Centers.

SECRETARY'S INITIATIVE 8: PROMOTE TECHNOLOGY-BASED ECONOMIC DEVELOPMENT IN VIRGINIA

WHERE WE WANT TO GO – THE “TO BE” ENVIRONMENT

In the “to be” environment, Virginia will host a premier business development environment, in which new companies easily access assistance in tapping the global marketplace and state organizations work together seamlessly to attract new companies and assist companies to grow, particularly those at early stages of development.

HOW WE ARE GOING TO GET THERE – “GAP CLOSING MEASURES”

To move the Commonwealth from the stated “as is” environment to the desired “to be” environment, the following “gap closing measures” have been identified:

1. Increase the net number of Virginia’s technology businesses.

Growth in the number of technology companies and their employees will accelerate. Assistance from CIT, the Virginia Economic Development Partnership, and other service providers will result in these businesses contributing to economic development across the Commonwealth and creating high-paying, high-value employment.

2. Increase the economic activity of Virginia’s businesses.

CIT’s assistance will help Virginia businesses, particularly technology start-up companies, to increase their sales, cost savings, and private capital acquisition.

3. Build entrepreneurial networks.

CIT will establish e-business villages to help build entrepreneurial networks that foster and encourage start-ups and innovation among small, rural companies. Topics such as electronic commerce and business will be explored in e-forums that provide educational outreach to rural areas on technology topics.

4. Collaborate with the Virginia Economic Development Partnership.

The Virginia Economic Development Partnership (VEDP) and CIT will reach out to smaller companies through the delivery of a series of workshops on export procedures and opportunities.

SECRETARY'S INITIATIVE 8: PROMOTE TECHNOLOGY-BASED ECONOMIC DEVELOPMENT IN VIRGINIA

TIMETABLE AND DELIVERABLES

Completion Date	Deliverable
October 2002	Work with VEDP and regional economic development authorities to develop target list of opportunities
December 2002	Establish information templates to be shared among service providers (CIT, Small Business Development Centers, manufacturing partners, etc.) and eliminate duplication of services to businesses
February 2003	Hold export conference re: new markets
March 2003	Establish one new e-business village and two new e-forums in rural Virginia
June 2003	Hold export conference held re: mechanics of exporting technology Assist 1,500 companies; 600 respond to survey

MEASURING SUCCESS

- Increase the net number of technology companies in Virginia by 1,200 and employees by 8,000.
- By June 2003, make Virginia businesses, particularly technology start-ups, more successful by adding \$250 million in increased sales, cost savings, and private capital, as measured by an independent client survey.
- By the end of FY 2003, increase participation in the e-business villages and e-forums by 15 percent, as measured by participation numbers in the villages and forums.

CONCLUSION

Virginia in the Global Digital Economy supports and enables the Governor's vision for technology in the Commonwealth, and fulfills his imperatives for a strengthened CIO role, ensuring all of Virginia benefits from the prosperity of the global digital marketplace, and fostering technology-based economic growth. By implementing the eight significant initiatives, Virginia is poised to save millions of dollars annually while revolutionizing service delivery. As a result, Virginia will be poised to take and sustain a leadership position in the global digital economy.

APPENDICES

APPENDIX 1: MATRIX OF GOVERNOR’S IMPERATIVES, SECRETARY’S INITIATIVES, AND AGENCY PROJECTS

Governor’s Imperatives	Secretary of Technology’s Initiatives	Virginia Information Providers Network (VIPNet)	Department of Technology Planning (DTP)	Department of Information Technology (DIT)
Develop the role as the Chief Information Officer of Virginia’s technology resources so that they are the most effective and efficient and meet the needs of our customers - the citizens of the Commonwealth of Virginia	Revolutionize service delivery to our customers	Implement a customer-facing Internet portal Increase quantity, quality, and adoption of online services		
	Consolidate IT infrastructure and provide centralized services		Consolidate technologies Develop program for statewide IT security Overhaul state administrative systems	
	Plan, budget, and track IT expenditures		Develop capital planning and funding process for IT Develop comprehensive technology management policy Improve systems to track IT expenditures	
	Manage IT procurement			Develop and implement best practice model for IT procurement

APPENDIX 1: MATRIX OF GOVERNOR’S IMPERATIVES, SECRETARY’S INITIATIVES, AND AGENCY PROJECTS

Governor’s Imperatives	Secretary of Technology’s Initiatives	Center for Innovative Technology (CIT)
Ensure that all of Virginia shares in the growth and success of our participation in the global market of the future	Increase federal research and development dollars	Enhance federal funding to Virginia’s colleges and universities and industry
Help develop Virginia as a major entity in the global economic marketplace of the future	Increase commercialization of intellectual property from Virginia’s labs, entrepreneurs, and institutions of higher education	Commercialize intellectual property from colleges, universities, and laboratories and grow entrepreneurial companies
	Enhance economic development, especially in Virginia’s rural areas, by increasing statewide broadband deployment	Consolidate responsibility for statewide broadband deployment
	Promote technology-based economic development	Grow technology companies

APPENDIX 2: GLOSSARY OF TERMS

APPENDIX TWO – GLOSSARY OF TERMS

NOTE: Unless otherwise specified, all terms are excerpted from the Technology Management Glossary (and sources cited therein) published by the Department of Technology Planning.

Benchmarking - A structured approach for identifying the best practices from industry and government, and comparing and adapting them to the organization's operations. Such an approach is aimed at identifying more efficient and effective processes for achieving intended results, and suggesting ambitious goals for program output, product/service quality, and process improvement.

Best Practices - The processes, practices, or systems identified in public and private organizations that performed exceptionally well and are widely recognized as improving an organization's performance and efficiency in specific areas. Successfully identifying and applying best practices can reduce business expenses and improve organizational efficiency.

Broadband - A high-speed, high-quality, affordable communications service which provides access to the Internet. Broadband access may be provided through wireline (such as cable modems and digital subscriber lines), wireless (such as cell phones, personal digital assistants, and other handheld devices), and satellite services. (Strategic Planning Team)

Business Case - A structured proposal for business improvement that functions as a decision package for organizational decision-makers. A business case includes an analysis of business process performance and associated needs or problems, proposed alternative solutions, assumptions, constraints, and a risk-adjusted cost-benefit analysis.

Core Technologies are those information technology functions that are commonly used to process, store, or communicate data and provide service. They are utility functions such as data centers, distributed computing assets, data storage, and help desks, which can be located anywhere and still support the provision of information to business functions. (Strategic Planning Team)

Cost Savings - Any measurable dollars saved plus any measurable dollars that are not spent (cost avoidance) plus increased efficiencies that result from the application of information technology to a business process. (Strategic Planning Team)

Enterprise – An organization with common or unifying business interests. For the purpose of Commonwealth technology management, an enterprise may be defined at various levels of state government where business interests are shared and collaboration is appropriate. (e.g. Higher Education, Public Safety, Administration Support)

APPENDIX 2: GLOSSARY OF TERMS

Enterprise Architecture (EA) is a method or framework for developing, implementing, and revising business-focused Information Technology (IT) guidance. The resulting guidance describes how the enterprise can use technology and best practices to improve the way it does business. The EA manifests in the form of domain architecture reports, policies, standards, and guidelines. In the Commonwealth, EA is built on the business needs of state and local government agencies. (Strategic Planning Team)

Guidelines – Directives and specifications issued by the Department of Technology Planning, similar to standards, but advisory in nature. Guidelines constitute recommendations that are not binding on agencies and institutes of higher education. (Strategic Planning Team)

Information System - The organized collection, processing, transmission, and dissemination of information in accordance with defined procedures, whether automated or manual. Information systems include non-financial, financial, and mixed systems.

Information Technology (IT) - The hardware and software operated by an organization to support the flow or processing of information in support of business activities, regardless of the technology involved, whether computers, telecommunications, or other.

Information Technology Investment Management practices - An integrated approach to managing IT investments that provides for the continuous identification, selection, control, life-cycle management and evaluation of IT investments. A structured process to provide a systematic method to minimize risks and maximize return on IT investments.

Information Technology Strategic Plan - A document used by an organization to align its IT organization and budget structure with organizational priorities, missions, and objectives. An IT strategic plan typically includes a mission statement, a description of the agency's long-term business goals and objectives, and IT strategies the agency plans to use to achieve these general goals and objectives. The strategic plan may also identify external factors that could affect achievement of long-term goals.

Interactive Business Process – A business process provided by the Commonwealth which enables citizens and businesses to submit, exchange, review, or request information and data, including payments, via electronic means such as the Internet, kiosks, interactive voice response systems, and personal digital assistants. (Strategic Planning Team)

Integrated Business Process - An interactive business process which results in information or data being electronically submitted and automatically updating a government database in real-time or near real-time without intervention by agency personnel in a form such as keying or re-keying the information or data. (Strategic Planning Team)

APPENDIX 2: GLOSSARY OF TERMS

Policies – General statements of direction and purpose issued by the Department of Technology Planning designed to promote the coordinated planning, practical acquisition, effective development, and efficient use of information technology resources. (Strategic Planning Team)

Return on Investment - A figure of merit used to help make capital investment decisions. Return on investment is calculated by considering the annual benefit divided by the investment amount.

Standards - Specific and, where applicable, technical documents issued by the Department of Technology Planning containing directives and mandatory specifications governing the management, development, and use of information technology resources.(Strategic Planning Team)

Total Cost of Ownership - is a calculation of the fully burdened cost of owning a component. The calculation helps consumers and enterprise managers assess both direct and indirect costs and benefits related to the purchase of IT components. For the business purchase of a computer, the fully burdened costs can also include such things as service and support, networking, security, user training, and software licensing.

SUMMARY REPORT

Executive Branch Agencies Information Technology Survey

**By the
Virginia Department of Technology Planning**

August 2002

OVERVIEW

In June of 2002, at the direction of the Secretary of Technology, the Department of Technology Planning (DTP) administered a survey of 63 Executive Branch agencies to determine the Commonwealth's current enterprise IT environment. This survey information will be used to support initiatives and analysis undertaken as part of the Commonwealth's Information Technology Strategic Plan.

SCOPE

The scope of this effort was the Executive Branch agencies, excluding the Education Secretariat. The list of participating agencies is located at Appendix A. From a budget standpoint, the survey addresses about 43 percent of the Commonwealth's annual IT spending. The other 57 percent, which is spent by legislative, judicial and independent agencies as well as Education, is not included in this survey. Appendix B provides detailed information about how the eligible budgetary scope was determined.

RESULTS

The results of the survey found that the 63 participating agencies spend approximately \$387 million annually on IT. The \$387 million represents 43 percent of the Commonwealth's \$902 million annual IT spending.

In all cases, the survey information was self-reported and unaudited. Agencies were asked to estimate costs for the most recent 12-month period. Since the survey was conducted prior to the close of FY 2002, estimates may not directly coincide with FY 2002 actual numbers.

Agencies were asked to provide information about the following categories of Information Technology. These categories represent the range of hardware, software and staffing resources utilized in an IT enterprise environment. Appendix C provides detailed definitions of each category and the questions asked in the survey.

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

Category One: Mainframe Computers

Reporting agencies identified 6 mainframe computers, hosting 172 applications at an annual cost of \$520,057.

Category Two: Midrange Computers

Reporting agencies identified 52 midrange computers, hosting 224 applications at an annual cost of \$4,506,224.

Category Three: Servers

Reporting agencies identified 2,329 servers at an annual cost of \$16,397,228.

Category Four: IT Staffing Resources

IT staffing is measured as full-time equivalents (FTEs) and includes part-time and contractor labor. Reporting agencies identified 2,286 Full-Time Equivalents (FTEs) at an annual cost of \$132,953,388.

Category Five: Computer Rooms / Data Centers

Reporting agencies identified 58 computer rooms or data centers representing 98,741 sq. feet of floor space at an annual cost of \$1,181,603.

Category Six: Communications / Local Area Networks (LANs)

This category represents all communications services to include data, voice and Internet access. Reporting agencies identified 1,420 separate local area networks at an annual cost of \$56,022,680.

Category Seven: External Support Services

Vendor-supported services including web hosting, application and database hosting, file storage, etc., at an annual cost of \$66,662,363.

Category Eight: Distributed Computing

Reporting agencies identified client computers (desktops, portables, PDAs), peripherals (printers, scanners, etc.) and network devices (hubs, routers, switches) at an annual cost of \$49,335,869.

Category Nine: Other IT Expenditures

This category includes IT costs that do not fit into the previous categories. Examples include public-private partnerships, training, miscellaneous expenses and public safety communications (i.e., 911). Reporting agencies identified Other IT expenditures at an annual cost of \$60,178,682.

Agencies also identified costs for IT help desks and Enterprise Resource Planning (ERP) software. These costs, noted here, are also included in the above nine categories, which together equal \$387,758,094.

Agencies reported 38 IT help desks at an annual cost of \$3,606,976. They also identified ERP software such as People Soft and Oracle at an annual cost of \$7,034,213.

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

USE OF DATA

The survey data will be used as a basis for recommendations to identify potential opportunities for the effective and efficient use of our core technologies within Executive Branch agencies. Thorough due diligence reviews of all reported numbers will be undertaken prior to the implementation of any potential strategic initiative.

TABLE OF CURRENT IT COSTS

The following table summarizes estimated current IT annual costs.

	Category	No. Of Assets	Annual Cost
1	Mainframe Computers	6	\$ 520,057
2	Midrange Computers	52	\$ 4,506,224
3	Servers	2,329	\$ 16,397,228
4	People	2,286 FTEs	\$132,953,388
5	Computer Rooms / Data Centers	58 rooms (98,741 sq. ft)	\$ 1,181,603
6	Communications / Local Area Networks (LANs)	1,420 LANs	\$ 56,022,680
7	External Support Services	Various	\$ 66,662,363
8	Distributed Computing	52,190 Client Computers 34,515 Peripherals 6,012 Network Devices	\$ 49,335,869
9	Other IT Expenditures	Various	\$ <u>60,178,682</u>
	Total Annual Cost		\$387,758,094

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

PARTICIPATING EXECUTIVE BRANCH AGENCIES

ADMINISTRATION

Charitable Gaming Commission
Commonwealth Competition Council
Compensation Board
State Board of Elections
Dept. of Employment Dispute Resolution
Dept. of General Services
Dept. of Human Resource Management
Council on Human Rights
Commission on Local Government
Dept. for the Rights of Virginians with Disabilities
Dept. of Veterans Affairs

COMMERCE AND TRADE

Dept. of Agriculture and Consumer Services
Dept. of Business Assistance
Virginia Employment Commission
Dept. of Forestry
Dept. of Housing and Community Development
Dept. of Labor and Industry
Milk Commission
Dept. of Mines, Minerals and Energy
Dept. of Minority Business Enterprise
Dept. of Professional and Occupational Regulation
Virginia Racing Commission

EDUCATION

Agencies and institutions of higher education are not included in this survey. The Secretary of Education is included in this survey.

FINANCE

Dept. of Accounts
Dept. of Planning and Budget
Dept. of the State Internal Auditor
Dept. of Taxation
Dept. of the Treasury

HEALTH AND HUMAN RESOURCES

Dept. for the Aging
Dept. for the Blind and Vision Impaired
Comprehensive Services for At-Risk Youth and Families
Dept. for the Deaf and Hard of Hearing
Virginia Board for People with Disabilities
Dept. of Health Professions
Dept. of Health
Dept. of Medical Assistance Services
Dept. of Mental Health, Mental Retardation and Substance Abuse Services
Dept. of Rehabilitative Services
Dept. of Social Services

NATURAL RESOURCES

Dept. of Chesapeake Bay Local Assistance
Dept. of Conservation and Recreation
Dept. of Environmental Quality
Dept. of Game and Inland Fisheries
Dept. of Historic Resources
Marine Resources Commission
Virginia Museum of Natural History

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

PUBLIC SAFETY

Dept. of Alcoholic Beverage Control
 Commonwealth's Attorneys' Services Council
 Dept. of Correctional Education
 Dept. of Corrections (includes Virginia Parole Board)
 Dept. of Criminal Justice Services
 Dept. of Emergency Management
 Dept. of Fire Programs
 Dept. of Juvenile Justices
 Dept. of Military Affairs
 Dept. of State Police

TECHNOLOGY

Dept. of Information Technology
 Dept. of Technology Planning (includes Virginia Information Providers Network Authority)

TRANSPORTATION

Dept. of Aviation
 Motor Vehicle Dealer Board
 Dept. of Motor Vehicles
 Virginia Port Authority
 Dept. of Rail and Public Transportation
 Dept. of Transportation

SCOPE OF THE SURVEY

The survey addressed current IT costs for 63 Executive Branch agencies. Current IT costs were defined as costs for the most recent 12-month period. Since the survey was commissioned prior to the close of FY 2002, agencies' estimates may not directly coincide with FY 2002 actual numbers.

Current IT spending of \$387 million represents about 43 percent of the Commonwealth's IT spending of \$902 million. The remaining 57 percent is attributable to education, judicial, legislative and other miscellaneous agencies.

The following table reflects IT expenditures for FY 2001 (July 1, 2000 – June 30, 2001) by major category. This table illustrates how the Commonwealth's total spending was broken out by major category to determine the scope eligible for this survey. The FY 2001 eligible scope was 45 percent of the total. Current cost estimates of the eligible scope contained in the survey (\$387 million) represent about 43 percent.

Major Category	Annual Cost	% Total Cost
Total IT Expenditures for FY 2001	\$ 902,551,799	
Less Distributed Overhead Costs	(109,621,236)	12%
Less Medical College of Virginia (MCV) Non-Personnel Cost	(19,190,683)	2%
Less Judicial Cost	(11,350,423)	1%
Less Legislative Cost	(2,153,475)	0.2%
Less Education Cost	(308,404,649)	34%
Less Independent Agencies / Authorities Cost	(44,660,371)	5%
Subtotal	(495,381,428)	55%
Eligible Scope Remaining	\$ 407,170,371 ⁽¹⁾	45%

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

(1) For purposes of comparison, the survey data, which represents the most recent 12-month period, is being compared with FY 2001 data from CARS (Commonwealth Accounting and Reporting System) for non-participating entities. For FY 2001, the eligible scope was \$407 million (45 percent of the total). Using survey data, the eligible scope is \$387 million (43 percent of the total).

DEFINITIONS OF SURVEY CATEGORIES AND QUESTIONS

CATEGORY ONE: MAINFRAME COMPUTERS

If your agency houses one or more mainframe computers, please complete the table below.

Definitions

Mainframe: a large capacity host computer acquired as a mainframe. The communications architecture is typically proprietary. Communications are described as terminal-host and not client-server. Do not include enterprise servers in the mainframe count.

Annual Cost: Include the costs of computer hardware and software, upgrades and maintenance contracts.

MIPS (Million Instructions Per Second): A measure of the rate at which the processor executes instructions.

Mainframe Computers Table

Mainframe Computer Model	No. of Agencies Using the Mainframe	No. of Applications Supported by the Mainframe	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Type of Operating System	No. of MIPS	GB of Disk Space	Purchase Month/Year (mm/yy)	Purchase Price

CATEGORY TWO: MIDRANGE COMPUTERS

If your agency houses one or more midrange computers, please complete the table below.

Definitions

Midrange: A computer acquired as a midrange or mini-frame with communications architecture like a mainframe but which is substantially smaller in computing capacity. Communications are described as terminal-host and not as client-server. Do not include enterprise servers in the midrange count.

Annual Cost: Include the costs of computer hardware and software, upgrades and maintenance contracts.

MIPS (Million Instructions Per Second): A measure of the rate at which the processor executes instructions.

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Midrange Computers Table

Midrange Computer Model	No. of Agencies Using the Midrange	No. of Applications Supported by the Midrange	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Type of Operating System	No. of MIPS	GB of Disk Space	Purchase Month/Year (mm/yy)	Purchase Price

CATEGORY THREE: SERVERS

A. Server Inventory Table

Type of Server	No. of each "Type of Server"	Total No. of CPUs	GB of Disk Space	Annual Cost	Annual Cost is (A)ctual or (E)stimated	No. to be replaced in next 5 years
Enterprise Servers (agency Only)						
All Other Servers (agency Only)						
Enterprise Servers (shared with other agencies)						
All Other Servers (shared with other agencies)						

Definitions

Enterprise Server: Typically a large, scalable computer with multiple processors and a client-server communications architecture. It will communicate with other LAN nodes in typical fashion using, for example, TCP/IP protocol stacks.

Server: A scalable computer with a client-server communications architecture that is designed for the service it is providing to clients (e.g., amount of input/output, number of CPUs, amount of storage, type of operating system and relationship to peripherals).

Annual Cost: Include the costs of computer hardware and software, upgrades and maintenance contracts.

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B. Server Management Techniques

Which of the following server management techniques does your agency use today?

Technique	Enter "Yes" or "No"
Server Farms	
Load Balancing	
Server Blades	
Clustering	
High-end Servers	
Storage Area Networks (SANs)	
NAS devices	

Definitions

Server Farms: combine the processing power of multiple processors residing on different computers to address a single processing request or use multiple servers to address the requests of pool of users of one application. Server farms often use load sharing and/or load balancing software to front-end the requests. Also called server compute farms.

Load Balancing: software solution for distributing the workload across a pool of computing devices. For example allocating web server requests across a pool of web servers.

Server Blades: a technology that separates processors, RAM and network connection from I/O capacity, power and storage and stacks the resulting single or multiprocessor "blades" vertically in a frame which has its own networking capabilities, cooling, and management. One vendor's frame usually accepts only certain types of blades, OSs, and management software. This technology is easier to administer than a server farm.

Clustering: connecting two or more computers together in such a way that they behave like a single computer. Clustering is used for parallel processing, load balancing and fault tolerance.

High-end Servers: (e.g., Sun Enterprise 10000) -- servers that can have a large number of processors

Network Attached Storage (NAS): a device that is dedicated to file sharing. NAS devices can be independent of servers. Their numbers can be increased to add capacity without shutting down the servers that use them. They deliver data to requesters.

Storage Area Networks (SANS): a system for centrally controlling storage including allocation of space, redundancy, access speed, connection to a wide variety of server operating systems, comprehensive management.

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CATEGORY FOUR: IT STAFFING RESOURCES

A. IT Resources Work Allocation Distribution Table

- 1) Complete the IT Resources section of the table below by summarizing the number of classified and hourly IT staff and IT contractors used during the last year. Note hourly employees and contractors must be converted to full-time-equivalent (FTE) employees using 1,800 hour per year as one FTE.
- 2) Summarize the annual burdened cost for each type IT resource applicable to your agency.
- 3) The “# of FTEs” must then be distributed in full across the 4 IT Resources Work Allocation Distribution categories (Mainframe/midrange IT Tasks, Distributed Computing IT Tasks, DBAs, and Design). See definition following question B for definitions/descriptions of the tasks for the 4 categories.
- 4) If all the “# of FTEs” cannot be fully distributed across the 4 categories, you must complete part B of this section to explain the allocation of the difference(s).

IT Resources			IT Resources Work Allocation Distribution			
			Mainframe/midrange IT Tasks	Distributed Computing IT Tasks	DBAs	Design Activities
Type IT Resource	# of FTEs	Annual Cost burdened	FTEs Allocated	FTEs Allocated	FTEs Allocated	FTEs Allocated
Classified			X			
Hourly P-14						
Contractor						

B. Other IT Resources.

Please specify type resource, FTE equivalent and annual cost for FTEs not allocated in the table above.

Definitions

Mainframe/Midrange IT Tasks.

Staffing includes information on operations, technical services, financial services, business resumption, occupancy and high availability.

- Operations include: Management - Personnel with responsibility for two or more of the operations areas. If a manager within your organization has responsibility for only one area, place them in that function. Operations support - Personnel with responsibility for overall efficient operation of installed computer systems. This includes system start/stops, monitoring system jobs, responding to

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

console messages, diagnosing and correcting production failures. Positions include such jobs as shift supervisor, shift operator, operations automation, and change management. Tape support - This area controls, stores and provides tapes that are needed by the users of the processing environment. Request, mount and remove tapes as required by the system. Order, clean and dispose of tapes as needed. Cataloging volumes in a tape management system. Output support - Personnel that maintain the operating environments of output devices. Production control - This area maintains the integrity of the production environment.

- **Technical Services** includes: Management - Personnel with responsibility for two or more of the Technical Services areas. If a manager within your organization has responsibility for only one area, place them in that function. System Support - This area is responsible for maintaining the operating system and TP (online) environments. This includes evaluation, installation, maintenance (fixes and upgrades), as well as removal of system software, security packages, systems utilities and database transaction packages. The personnel establish technical standards, diagnose and resolve system problems and tune system performance. They do not develop applications or support them once developed. DB Administration (physical) - This area is responsible for maintaining the physical placement and integrity of databases used in this environment. Activities would include periodic re-organizations, layout of the database within the disk storage system. Performance - This area develops standards and measures for the technical performance of operating systems and major subsystems. Capacity Planning - This area establishes the performance and capacity thresholds for computer system changes. Technical Services personnel monitor system utilization and forecast capacity needs. Storage Management - This area works to establish, report on, and optimize the utilization of the storage environment. System Security - This area develops standards and procedures for ensuring overall system integrity.
- **Business resumption** - The staff dedicated to safeguarding the enterprise's ability to continue operation of vital business functions following physical damage or other catastrophes impacting business facilities. Include all regular as well as contract/temp FTEs for this functional category in here.
- **Financial Services** includes: Budget/Chargeback Administration - This area establishes the operation center's budget, monitors actual expenses versus the budget, arrange financing for purchases, perform financial reporting to other company areas. They also handle the operation of the charge back system. System procurement - This area maintains contact with hardware and software vendors. They solicit bids, negotiate purchasing agreements, establish purchase orders, validate vendors' bills, coordinate with accounts payable for payment and handle contract administration. Administration Support - This area provides direct administrative and clerical support to all the operation centers' organizations.
- **Occupancy** includes: Management - In-house and contract personnel responsible with the overall administration of the facilities under the scope of the study. Environmental Control - Include in-house and contract personnel. This area monitors and maintains environmental support systems. These include heating, air conditioning, water and power. Hardware installation - Include in-house and contract personnel here. These personnel determine the physical placement of computer hardware within the data center, the connections among devices, the power requirements, and the environmental needs. They coordinate with the local utility to provide power feeds and supplement these with private power plants and batteries, as needed.

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- **High availability** - Staff dedicated to maintaining the enterprise's ability to continue operation of vital business functions without interruptions or outages. Include all regular as well as contract/temp FTEs for this functional category in here.

Distributed Computing IT Tasks

Tasks include technical services, process and planning management, service desk, and administration.

- **Technical services** for client computers and peripherals include: tier II problem resolution, tier III problem resolution, traffic management and planning, performance tuning, user administration (adds, moves, changes to users), operating system support, maintenance labor, software deployment, application management, hardware configuration/re-configuration, hardware deployment, disk and file management, storage capacity planning, backup archiving and recovery, and repository management. Technical services for servers include: tier II problem resolution, tier III problem resolution, traffic management and planning, performance tuning, user administration (adds, moves, changes to users), operating system support, maintenance labor, software deployment, application management, hardware configuration/re-configuration, hardware deployment, disk and file management, storage capacity planning, backup archiving and recovery, and repository management. Technical services for network devices include: tier II problem resolution, tier III problem resolution, traffic management and planning, performance tuning, user administration (adds, moves, changes to users), operating system support, maintenance labor, software deployment, application management, hardware configuration/re-configuration, hardware deployment, disk and file management, storage capacity planning, backup archiving and recovery, and repository management.
- **Planning and process management** activities include: account management, systems research, planning and product management, evaluation and purchase, security and virus protection, and business recovery.
- **Service desk** activities include tier 0 and tier I only. Tier 0 refers to call taking and logging without providing problem assistance or resolution. Tier I refers to first and second level non-dispatched problem assistance or resolution delivered via phone, e-mail or on-line communication.
- **Administration** includes: Finance and Administration includes supervisory management, IS administrative assistance, asset management, budgeting and charge back, auditing, purchasing, procurement and contract management, and vendor management personnel. IS Training includes staff performing IS training course development, coordination, and instruction. End User Training includes staff performing end user training course development, coordination, and instruction.

DBAs

Database management and administration includes. Administrative tasks include index management, replication, log administration, data recovery, optimization, and other maintenance tasks. Excluded in this category are design and development related activities.

Design Activities

Include all application maintenance, design and development efforts including database design and development.

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CATEGORY FIVE: COMPUTER ROOM (DATA CENTER) FACILITIES

Definitions:

Raised Floor: removable flooring installed with space provided underneath for wiring access, air conditioning, and/or water control.

Computer Room: A designated area or room that houses servers, mainframes, or midrange computers, having the following characteristics:

- At least 100 square feet (e.g., ten feet by ten feet)
- Separate climate controls for temperature and humidity
- Electrical connections adequate for multiple computing devices

Mainframe: A large capacity host computer acquired as a mainframe. The communications architecture is typically proprietary. Communications are described as terminal-host and not client-server. Do not include enterprise servers in the mainframe count.

Midrange: A computer acquired as a midrange or miniframe with communications architecture like a mainframe but which is substantially smaller in computing capacity. Communications are described as terminal-host and not as client-server. Do not include enterprise servers in the midrange count.

Enterprise Server: Typically a large, scalable computer with multiple processors and a client-server communications architecture. It will communicate with other LAN nodes in typical fashion using, for example, TCP/IP protocol stacks.

Server: A scalable, computer with a client-server communications architecture that is designed for the service it is providing to clients (e.g., amount of input/output, number of CPUs, amount of storage, type of operating system, and relationship to peripherals.)

A. Computer Room Questions.

<i>Questions</i>	<i>Answers</i>
Given the definition above, my agency has computer rooms? (Yes or No)	

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B. Computer Room Inventory Table

Please provide the following information on each of your computer rooms that meet all the criteria in the above definition.

Address (include street name, building name, and floor)	City, state, zip	Building Owned by the State Y= yes N= no	Has raised floor? Y= yes N= no	Number of Mainframes & Midranges in Computer Room	Number of Enterprise Servers and Servers in Computer Room	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Size in square feet

CATEGORY SIX: COMMUNICATIONS

A. Communications Questions

Questions	Answers
Do you participate in COVANET? (Yes or No)	
Do you participate in Net.Work.Virginia? (Yes or No)	
Do you participate in any other wide area network? (Yes or No)	
How many LANS do you have?	
How many LANS do you manage?	
How many LANS does another agency or outside vendor manage?	

APPENDIX 3: SUMMARY REPORT OF EXECUTIVE BRANCH AGENCY INFORMATION TECHNOLOGY SURVEY

B. Communications Costs

Communications Area	Annual Cost	Annual Cost is (A)ctual or (E)stimated
Data + Voice		
Voice		
Internet access		
Other communications		

Definitions

Data annual costs: includes data line charges and services, including maintenance, installation, and data related PRI.

Voice annual costs: includes long distance, calling cards, local phone service, equipment, including maintenance, installation, and voice related PRI

Internet access annual costs: includes service provider fees, email accounts, maintenance , and installation.

Other communications annual costs: includes audio conferencing, bridging, cell phones, pagers, satellite, and two-way radios. Equipment, recurring service fees, maintenance, and installation should be included. All other communications costs not covered elsewhere.

LAN (Local area network): a geographically limited communication network that connects users within a defined area. A LAN is generally within a building or small group of buildings. The shorter distances within a building or campus enable faster communications at a lower cost than wide area networks (WANS). Although an increasing number of LANs use Internet standards and protocols, they are normally protected from the public Internet by firewalls. LANs are generally used to perform the following functions:

- Print on printers attached to the network
- Transfer data or software to or from other systems attached to the network
- Send e-mail to other users on the network
- Access wider-area networks, including the Internet, via a direct connection from the network, for external file transfer, E-mail, facsimile, group collaboration and videoconferencing.

CATEGORY SEVEN: EXTERNAL SUPPORT SERVICES

Some agencies use external support for selected services that would otherwise be provided on servers or mainframes in house. In this section, note each source of external support and the service provided. Repeat the agency or the vendor if they provide multiple services.

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External Support Services Table

External Sources of Support (Indicate agency acronym or "VENDOR", repeat sources as needed.)	Service (Write the service number using the list below) 1 - Web Hosting 2 - Application Hosting 3 - File Storage 4 - Database Hosting 5 - Email Service 6 - Other Storage 7 - Backup Service 8 -Other (e.g., application service provider, reference service)	Annual Cost	Annual Cost is (A)ctual or (E)stimated

CATEGORY EIGHT: DISTRIBUTED COMPUTING

Type of Infrastructure	Number of each type	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Number to be replaced in next 3 years
Client Computers (desktops, portables, PDAs)				
Peripherals (printers, plotters, scanners, network faxes, CD ROM (jukebox))				
Network Devices (hubs, routers, switches, gateways, bridges)				

Definitions

CD ROM (Jukebox): Devices that allows multiple compact disks to be stored and retrieved automatically.

Desktop Client Computers: any acquired stationary desktop workstation, including desktop computer under seat management services, and desktop computers acquired for telecommuters.

Portable Client Computers: any acquired mobile computers including docking stations and personal digital assistant computers. Include mobile computers acquired under seat management services and those acquired for telecommuters.

Annual Cost: Include the annualized costs of the hardware, software as appropriate, and all corresponding upgrades and maintenance contracts.

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CATEGORY NINE: OTHER IT EXPENDITURES

For any IT expenditure that does not fit within the pre-defined areas, enter appropriate entries and specify what those entries include.

IT Help Desk

Help Desk Question	Answer
Does your agency provide staff with access to a formal IT help desk? (Yes or NO)	

If “yes”, then please fill out the table below.

What help desk software do you use?	What is your call volume? (calls per month)	Annual Cost of Help Desk	Annual Cost is (A)ctual or (E)stimated

Definitions

Formal Help Desk: A formal help desk system scales support by the level of complexity and routes calls based on complexity, urgency, and type. Some use the terms "Tier 0 support" through "Tier 3 support to define levels." The help desk function is generally provided through the use of dispatcher(s) and call tracking software. Service statistics are provided by help desk software for gauging the level, quality, and timeliness of support provided.

Agencies Supported: State government agencies that may call your help desk for LAN and/or desktop assistance.

If your agency's help desk is used by other state agencies, list each agency by name in the table below:

Agency Name

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B. Enterprise Resource Planning (ERP)

Agencies presently use central administrative systems for Human Resources (PMIS), Accounting (CARS, FAACS; CIPPS; and FINDS), Budgeting (ProBud), Payroll Service Bureau, Procurement (eVA), etc. Many agencies find these systems to be inadequate for addressing their specific business needs. Some agencies use commercial, off-the-shelf (COTS) ERP systems to bridge the gap. In this section, please indicate:

- areas of need for your agency
- whether you have a computer program in place to address the need
- whether you have used a COTS ERP package to address the need and
- what COTS ERP providers are used by your agency

ERP Needs Table

Area of Need	How is need met? M = Manually; C = COTS ERP program; A = Agency program
Time tracking	
Staff training tracking	
Accounts payable tracking	
Revenues and accounts receivable tracking	
Billing	
Warehouse Management	
Inventory Control	
Staff Benefits	
Travel reimbursement	
Cash register	
Point of sale	
General Ledger	
Payroll	
Expenditures mapped to budget	
Federal funds management	
Local government expenditure tracking	
Improved project and program coding	
Funds allocation data tracking	
Collections	
Debt management	

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ERP Vendors/Providers Table

ERP Provider (e.g., Oracle, SAP)	Annual Cost	Annual Cost is (A)ctual or (E)stimated

Definitions

ERP Annual Cost: Includes cost for ERP software, licenses, maintenance fees, customization, upgrades, vendor tech support, training, and associated system administration.

AGENCY CURRENT TECHNOLOGY INFRASTRUCTURE

1. MAINFRAME COMPUTERS

Number of Mainframe Computers	No. of Agencies Using the Mainframe	Number of Applications Supported by the Mainframe	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Type of Operating System	Number of MIPS	GB of Disk Space	Purchase Month / Year (mm/yy)	Purchase Price
6		172	520,057			1,804	3,540		

Consists of 1 IBM, 1 Amdahl (MVS), 1 HDS (MVS) and 3 Unisys mainframes. Located at DIT, State Police, and Agriculture.

2. MIDRANGE COMPUTERS

Number of Midrange Computers	Number of Agencies Using the Midrange	Number of Applications Supported by the Midrange	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Type of Operating System	Number of MIPS	GB of Disk Space	Purchase Month / Year (mm/yy)	Purchase Price
52		224	4,506,224				7,956		

Mainframe and Midrange computers are only 6 percent of total expenditures. 40 percent of midrange computers are older than 8 years.

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3. SERVERS

Type of Server	Number of each "Type of Server"	Total Number of CPUs	GB of Disk Space	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Number to be replaced in next 5 years
Enterprise Servers (agency only)	711		39,230	8,072,686		421
All other Servers (agency only)	1,515		50,423	7,516,155		973
Enterprise Servers (shared with other agencies)	62		5,080	681,564		50
All other Servers (shared with other agencies)	41		1,200	126,823		27
Total	2,329		95,933	16,397,228		1,471

61 percent (1428) of the servers will be replaced in the next five years.

4. IT STAFFING RESOURCES

A. IT Resources Work Allocation Distribution Table

IT Resources			IT Resources Work Allocation Distribution			
			Mainframe / midrange IT Tasks	Distributed Computing IT Tasks	DBAs	Design Activities
Type IT Resource	# of FTEs**	Annual Cost burdened	FTEs Allocated	FTEs Allocated	FTEs Allocated	FTEs Allocated
Classified	1,572	76,136,991	277	675	131	489
Hourly P-14	85	2,230,124	16	42	7	20
Contractor	450	49,449,542	24	138	23	265
Other IT	179	5,136,731	N/A	N/A	N/A	N/A
Totals	2,286	132,953,388	317	855	161	774

People are 34 percent of current IT expenditures.

Approximately 30 percent of DIT staff is eligible for retirement in next five years.

20 percent of IT staffing are contractors, which account for 37.5 percent of IT staffing costs (\$49.5M).

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5. COMPUTER ROOM FACILITIES

Computer Room Inventory Table

Number of Computer Rooms Reported	City, state, zip	Building Owned by the State Y= yes N= no	Has raised floor? Y= yes N= no	Number of Mainframes & Midranges in Computer Room	Number of Enterprise Servers and Servers in Computer Room	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Size in square feet
35			Y	48	1,108	1,015,403		88,389
23			N	7	220	166,200		10,352
Total of 58				55	1,328	1,181,603		98,741

There are 58 different computer rooms (34 in Richmond) housing 1328 servers and 55 midrange/mainframe computers.

- 28 are 600 sq. ft. or larger, including 7 that are 2,000 sq. ft. or larger.
- 88,389 sq. ft. of raised floor space (excludes DIT office space).
- 50 percent of computer room floor space (49,660 sq. ft.) is located in buildings not owned by the state.

6. COMMUNICATIONS

A. Communications Questions

Questions	Answers
Do you participate in COVANET? (Yes or No)	
Do you participate in Net.Work.Virginia? (Yes or No)	
Do you participate in any other wide area network? (Yes or No)	
How many LANS do you have?	1,420
How many LANS do you manage?	1,405
How many LANS does another agency or outside vendor manage?	27

99 percent of the LANS are managed by the owning agency.

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B. Communications Costs

Communications Area	Annual Cost	Annual Cost is (A)ctual or (E)stimated
Data	24,104,984	
Voice	24,019,722	
Internet access	883,132	
Other communications	7,014,841	
Total	56,022,680	

7. EXTERNAL SUPPORT SERVICES

External Sources of Support (Indicate agency acronym or "VENDOR", repeat sources as needed.)	Service (Write the service number using the list below) 1 - Web Hosting 2 - Application Hosting 3 - File Storage 4 - Database Hosting 5 - Email Service 6 - Other Storage 7 - Backup Service 8 -Other (e.g., application service provider, reference service)	Annual Cost	Annual Cost is (A)ctual or (E)stimated
Total annual costs reported		66,662,363	

Approximately \$26.5M (40 percent) is spent on support services by vendors; \$38M (57 percent) is spent on support services to DIT. Application hosting, web hosting, and Data Base hosting are the three largest external support expenditures.

8. IT HELP DESK

What help desk software do you use?	What is your call volume? (calls per month)	Annual Cost of Help Desk	Annual Cost is (A)ctual or (E)stimated	Number of agencies with help desks
Total annual costs reported		3,606,976		28

There are 38 Help Desk applications running at 28 agencies (45 percent of the agencies).

26 of the Help Desk applications handle less than 800 calls per month (5 per hour).

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9. ENTERPRISE RESOURCE PLANNING (ERP)

ERP Provider (e.g., Oracle, SAP)	Annual Cost	Annual Cost is (A)ctual or (E)stimated
Total annual cost reported	7,034,213	

34 survey respondents indicated that they had an ERP application running.

Multiple implementations of PeopleSoft, Oracle, and Mitchell Humphrey (FMS) were stated.

10. OTHER (DISTRIBUTED COMPUTING)

Type of Infrastructure	Number of each type	Annual Cost	Annual Cost is (A)ctual or (E)stimated	Number to be replaced in next 3 years
Client Computers (desktops, portables, PDAs)	52,190	36,514,181		27,127
Peripherals (printers, plotters, scanners, network faxes, CD ROM (jukebox))	34,515	9,064,294		15,464
Network Devices (hubs, routers, switches, gateways, bridges)	6,012	3,757,394		2,048
Total		49,335,869		44,639

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CURRENT IT EXPENDITURES TABLE

Category	Cross Reference Numbers for this Section	Total Assets/Resources	Current Annual Cost in \$
Mainframe/Midrange Computers	1 - 2	58	5,026,281
Servers	3	2,329	16,397,228
People (IT Staffing Resource)	4	2,286	132,953,388
Data Centers (Computer Room Facilities)	5	58	1,181,603
Communications	6		56,022,680
External Support Services	7		66,662,363
Other (Distributed Computing)			
Desktop/portable computers	10	52,190	36,514,181
Peripherals (printers, plotters, scanners, etc.)	10	34,515	9,064,294
Network Devices	10	6,012	3,757,394
Other IT Expenditures (specify each)			60,178,682
Total Cost			\$387,758,094
Other Totals Included in above cost entries:			
IT Help Desk Cost			3,606,976
Enterprise Resource Planning Cost			7,034,213

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FY 2001 IT EXPENDITURES TABLE

Category	Cross Reference Numbers for this Section	Total Assets/Resources	Current Annual Cost in \$
Mainframe/Midrange Computers	1 - 2	73	4,947,301
Servers	3	2,055	18,285,992
People (IT Staffing Resource)	4	2,130	126,803,345
Data Centers (Computer Room Facilities)	5	51	873,894
Communications	6		54,317,354
External Support Services	7		72,804,283
Other (Distributed Computing)			
Desktop/portable computers	10	45,803	41,457,816
Peripherals (printers, plotters, scanners, etc.)	10	30,507	6,643,569
Network Devices	10	5,346	6,115,796
Other IT Expenditures (specify each)			74,921,022
Total Cost			407,170,371

Virginia's Center for Innovative Technology

OPERATING PLAN

Fiscal Year 2003

Re-Submitted to the
Board of Directors
August 30, 2002

Details of Operating Plan Fiscal Year 2003

EXECUTIVE SUMMARY

Technology drives the Virginia economy and underlies the gains in many traditional industry sectors. Virginia's leadership position has been recognized in a number of national surveys, most recently the AEA's Cyberstates 2002 that placed the state 6th in high-tech employment.

Technology businesses are springing up throughout the Commonwealth, but they concentrate around traditional sources of funding and ideas. CIT's vision—like that of the Governor—is to build “One Virginia,” propelled by technology to prosperity for all.

Vision: Build “One Virginia,” propelled by technology to prosperity for all

Virginia's position, however, is being challenged by other states anxious to reap the rewards of a technology-based economy. Even in budget-constrained times, ambitious efforts are under way in Georgia, Ohio and Pennsylvania, to name only a few. Virginia must also be competitive in the much larger global economic marketplace.

To maintain a leadership position, Virginia must increase the commitment to the creation of new knowledge, accelerate the transfer of that knowledge into the marketplace and promote the growth of entrepreneurial firms. This is the mission of Virginia's Center for Innovative Technology (CIT), and the operating plan reflects this concentrated focus, which emerged from the Secretary of Technology's strategic planning process.

Mission: Increase commitment to the creation of new knowledge, accelerate the transfer of that knowledge into the global marketplace and promote the growth of entrepreneurial firms

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There is not just one customer or category of customers for CIT's services—university research facilities will benefit, as will their intellectual property foundations when revenues increase. Large companies play a role in sponsored research. But the single most important ingredient in the equation is the organization that translates the ideas into business—the small, fast-growing technology company. That remains CIT's ultimate customer. The greatest job growth and revenue growth comes from this type of company.

So the goals for CIT for the coming year, which are reflected in greater detail in the plan of work and in the budget lines are:

1. Enhance federal research funding to Virginia's college and universities and industry
2. Commercialize intellectual property from universities and laboratories and grow entrepreneurial companies
3. Promote technology-based economic development

The return on the state's investment in FY 2003, with a budget of \$9.2 million, will be **\$346.8 million**.

Goal	Results	Impact
1	Additional federal research funds	\$71.8M
2	More IP/commercialization activity	\$25.0M
3	More tech-based economic development	\$250.0M
	Total	\$346.8M

Focused on delivering these results, CIT has developed a series of goals with associated metrics to measure success.

GOAL #1—INCREASE FEDERAL RESEARCH FUNDING TO VIRGINIA'S COLLEGES AND UNIVERSITIES AND INDUSTRY

A vibrant and well-funded research and development infrastructure is essential to the continued economic growth of the Commonwealth. Currently, federal statistics as compiled by the National Science Foundation (NSF), paint a potentially misleading picture as they show in 1999 Virginia ranked 3rd in overall federal R&D obligations with \$5.75 billion received. However, much of this funding does not stay in the state but flows through industrial and government service intermediaries to other destinations.

The state's colleges and universities, however, received only \$264 million in 1999 and \$283 million in 2000. Four of the Virginia historically black colleges and universities received \$13 million total in 2000.

When compared to other institutions around the country, Virginia has no schools in the top 40 listing of R&D expenditures as compiled by the NSF. Increasing the rankings is a priority of the Warner administration, and CIT will contribute to that goal by helping attract an additional \$57 million in federal funds to Virginia's colleges and universities, increasing the funding 20 percent over projected 2002 funds. Another important federal source of research funds goes to companies through programs such as the Advanced Technology Program (ATP) in the Commerce Department and the Small Business Innovation Research (SBIR) program. Both programs fund research by companies in the early or high-risk stages when traditional and venture funding is difficult to acquire.

Virginia has consistently done well in the SBIR program, ranking 3rd among the states behind only Massachusetts and California. However, our share of the actual dollars received has been static at about 6 percent of the total. CIT will work to increase our percentage

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share of both programs in the next year. An increase of one percent of the total SBIR funds available translates to an additional \$10.8 million, and an increase of about 10 percent in our ATP funding to date translates to about \$4 million.

Summary of metrics to measure goal achievement

Federal research dollars to Virginia's colleges and universities will grow by 20 percent (\$57 million). SBIR funding will increase by one percent of the national total (\$10.8 million), and ATP funding will grow by 10 percent (\$4 million). Total increase in federal research dollars will be \$71.8 million.

GOAL #2—COMMERCIALIZE INTELLECTUAL PROPERTY FROM UNIVERSITIES AND LABORATORIES AND GROW ENTREPRENEURIAL COMPANIES

The contribution of small, fast-growing entrepreneurial companies has been documented by economists at MIT and at the National Commission on Entrepreneurship. These high-growth companies create at least two-thirds of the new jobs, account for at least two-thirds of the innovation and act as agents of change. Many of these firms spin out of universities or are attracted by the intellectual resources available at them.

The successful transfer of the intellectual property (IP) created and protected by universities is inextricably tied to the growth of these entrepreneurial firms.

Virginia has a fertile landscape of 12,303 technology companies and some 8,500 have fewer than 10 employees. At the height of the economic cycle in 1999 and 2000, between 2,700 and 3,000 new tech companies were started each year. Through the third quarter of 2001, nearly 2,500 new tech companies were started, with a projected total of 3,300 for 2001. Nurturing these entrepreneurial companies pays dividends. CIT will work to increase the number of technology start-up companies by 10 percent over the 2001 estimate, or 330 companies, in fiscal 2003. With an average salary of \$75,000 for a technology job (American Electronics Association, 2001), this translates, conservatively, to an economic impact of \$25 million.

Although most of Virginia's universities now have some form of technology transfer office, only four Virginia universities reported licensing and patent data in the 2000 survey by the Association of University Technology Managers (AUTM), and only two of those track which of their licenses went to Virginia companies. Total licensing income reported by the four universities was \$6.67 million.

The federal laboratories in the state also provide IP that is available for licensing. In many cases, these laboratories act in ways similar to universities in attracting new companies to locate nearby. NASA Langley, which is one of the largest of the federal labs, annually averages 130 disclosures, 28 patents issued, 8 patent licenses executed and 12 commercial Space Act agreements, which are a form of cooperative research.

Increasing the ease with which IP can be transferred and commercialized is a complex and lengthy process, but if Virginia is to capitalize on the knowledge created here, we must disseminate best practices and help entrepreneurs create the new companies.

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Metrics for increasing commercialization and entrepreneurship

Increase the number of faculty or university spin-off companies by 20 percent, make IP easier to locate and use, create a template for entrepreneurs of best practices, increase the creation of technology start-ups by 10 percent (330 companies), and identify new centers of excellence. The minimum expected impact will be \$25 million.

GOAL #3—PROMOTE TECHNOLOGY-BASED ECONOMIC DEVELOPMENT

Virginia's emphasis on growing technology firms has resulted in the near doubling of the number of tech firms in the state from some 6,600 in 1995 to more than 12,000 in 2001. These firms employ more than 300,000 people. A key component of this growth has been the continued influx of technology start-ups.

Since entrepreneurial growth companies contribute so substantially to new jobs and growth in the economy, improving their success rate and longevity will have a very positive economic impact. In addition, high tech wages far out pace the average wages in other industries. Improving the survival rate of technology start-up firms will yield a measurable return to the state's economy.

Entrepreneurial companies and their employees, especially in rural parts of the state, need reliable access to high-speed high quality telecommunications. While more than 80 percent of Virginia's companies are connected to the Internet, many households and businesses do not have access to affordable high-speed bandwidth.

CIT currently works with more than 1,500 companies through its network of nine regional offices and partner organizations. In addition to the technology business assistance, the regional directors provide tech firms with access to the expertise of the universities and federal laboratories. They also act as a conduit for information and expertise from other state organizations, such as Virginia Economic Development Partnership, the Department of Business Assistance and the Small Business Development Centers.

Expanding the horizons of technology firms to look to new markets overseas and to attract foreign interest in their products will enhance their chances of success in the competitive market.

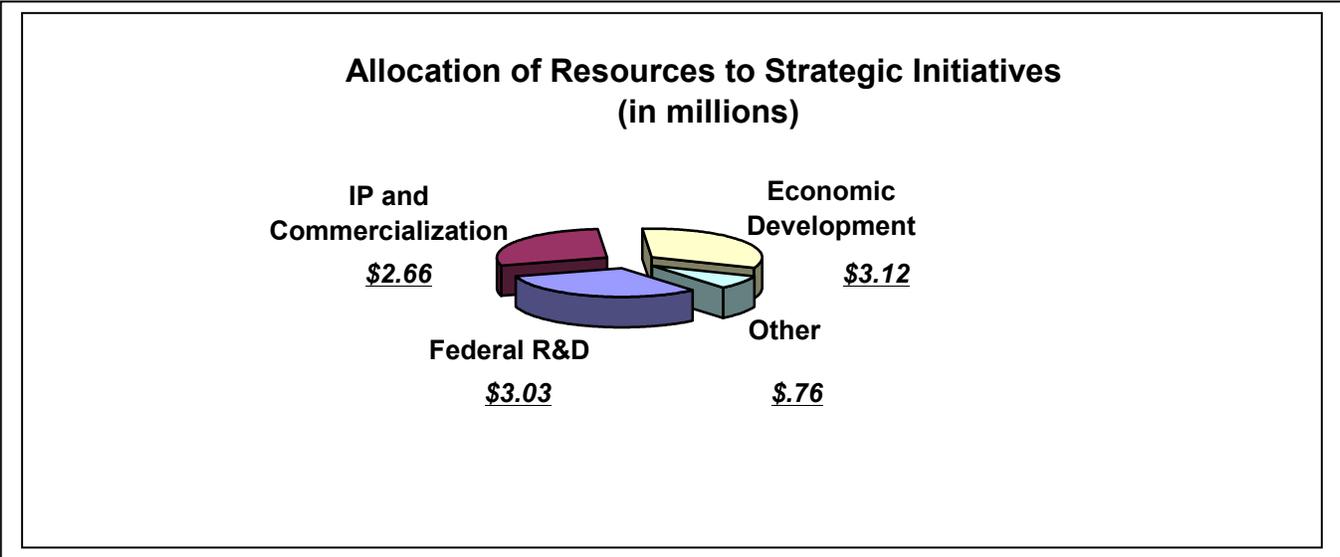
Metrics for promoting economic development

Increase the net number of technology companies in Virginia by 1,200, and employment by 8,000, and make Virginia businesses, particularly technology start-ups, more successful by adding \$250 million in increased sales, cost savings and private capital. Build entrepreneurial networks, expand market opportunities for companies from all regions by working with VEDP to develop a series of two workshops, benchmark access to and demand for high speed-high quality telecommunications and help increase demand for broadband by conducting education workshops.

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Funding

CIT has aligned its funding and human resources to support these goals. Program resources (\$9.57 million) are distributed among our strategic goals as follows:



With such a commitment, we believe the Commonwealth will be well positioned for delivering on the vision of “One Virginia,” propelled by technology with prosperity for all.

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SUMMARY OF STRATEGIC GOALS, DEPARTMENTS RESPONSIBLE

Goal 1:

Enhance federal research funding to Virginia's colleges and universities and industry

Plan of Work	Metric	Department(s) Responsible
1.1 Increase R&D funding for Virginia's colleges and universities, including Virginia's historically black colleges and universities.	1.1 By the end of FY 2003, Virginia's colleges and universities will receive 20 percent more federal R&D funding than in levels projected for 2002, an increase of \$57 million, including increasing federal R&D funding to Virginia's historically black colleges and universities by an additional \$2.6 million, a 20 percent increase over calendar 2000 funding levels, as reported by the NSF.	Technology Programs and Research, Regional Operations
1.2 Increase Virginia's SBIR funding.	1.2 By the end of FY 2003, CIT will increase Virginia's share of total federal SBIR funding by one percent of the national total, an increase of approximately \$10.8 million over current funding levels, as reported by the Small Business Administration.	Technology Programs and Research, Regional Operations
1.3 Increase Virginia's ATP funding.	1.3 By the end of FY 2003, CIT will increase ATP funding to Virginia's companies by an additional \$4 million, an increase of approximately 10 percent over current funding levels, as reported by the U.S. Department of Commerce.	Technology Programs and Research, Regional Operations
1.4 Develop a statewide list of R&D priorities	1.4 CIT will finalize a unified research priority list by the end of February 2003.	Technology Programs and Research

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Goal 2: Commercialize intellectual property from universities and laboratories and grow entrepreneurial companies

Plan of Work	Metric	Department(s) Responsible
2.1 Identify, catalogue, and disseminate best practices	2.1 By the end of FY 2003, CIT will develop a template or guidebook of best practices for entrepreneurs that collects the best information and data available and provides a road map for entrepreneurs creating new technology companies.	Technology Programs and Research, Program Communications
2.2 Make university and laboratory IP easily accessible to interested companies	2.2 By the end of FY 2003, CIT will make university and laboratory IP easily accessible to interested companies by augmenting the marketing process through training and electronic channels.	Technology Programs and Research, Program Communications
2.3 Increase the licensing of IP at institutions and federal labs	2.3 CIT will obtain a benchmark on the number of licenses awarded to Virginia companies and increase the percentage of licenses to Virginia companies to 40 percent of the total in FY 2003.	Technology Programs and Research, Regional Operations
2.4 Identify centers of excellence	2.4 By the end of FY 2003, CIT will identify current and future university-based centers of excellence to serve as sources of technology available for commercialization.	Technology Programs and Research, Regional Operations
2.5 Increase the number of companies spun out of Virginia's colleges and universities	2.5 By the end of FY 2003, CIT will facilitate a 10 percent increase in technology start-ups statewide (about 330) and a 20 percent increase in university-based start-up or spin-off technology companies. At an average annual salary of \$75,000 for a technology job, this will create an estimated economic impact of \$25 million.	Technology Programs and Research, Regional Operations

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Goal 3a: Promote technology-based economic development

Plan of Work	Metric	Department(s) Responsible
3.a.1 Increase the net number of technology companies and technology employment.	3.a.1 Increase the net number of technology companies in Virginia by 1,200 and employees by 8,000, as measured by the Virginia Employment commission.	Regional Operations and Technology Programs and Research
3.a.2 Increase economic activity of Virginia's businesses	3.a.2 Make Virginia businesses, particularly technology start-ups, more successful by adding \$250 million in increased sales, cost savings and private capital by the end of FY 2003, as measured by an independent client survey.	Regional Operations and Technology Programs and Research
3.a.3 Build entrepreneurial networks	3.a.3 By the end of FY 2003, increase participation in the e-business villages and e-forums by 15 percent, as measured by participation numbers in the villages and forums.	Technology Programs and Research
3.a.4 Collaborate with the Virginia Economic Development Partnership	3.a.4 Hold two workshops or boot camps by in Hampton Roads and central/southern Virginia that will educate firms that do not currently export with the procedures and opportunities. By the end of FY 2004, ten small companies that do not currently export will be exporting \$1 million per year, as measured by the CIT client survey.	Regional Operations

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Goal 3b: Increase broadband deployment throughout Virginia

Plan of Work	Metric	Department(s) Responsible
3.b.1 Benchmark access to broadband and demand	3.b.1 Study will be completed and published.	Technology Programs and Research
3.b.2 Increase demand for broadband by Virginia's citizens and businesses	3.b.2 One hundred percent of all households and businesses that request access in Virginia will be provided with the opportunity to purchase high-speed, high-quality, affordable broadband by January 1, 2006.	Technology Programs and Research

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

SUMMARY OF OPERATING BUDGET FOR FISCAL YEAR 2003

		(In Thousands)	(In Thousands)
		FY 2002	FY 2003
		Budget	Budget
REVENUE			
	State General Fund Appropriation	12,506	9,231
	Interest Income	350	300
	Other	1,492	1,491
	TOTAL REVENUE	14,348	11,022
EXPENSES			
1. TECHNOLOGY PROGRAMS & RESEARCH			
	Technology Industry Sectors	1,340	975
	Business Support Programs	710	610
	State Wide Technology Initiatives	332	190
	Policy Research	190	155
	Technology Centers	770	325
	Federal/Business Development	232	262
	Technology Awards	1,190	690
	Strategic R&D Studies	125	85
	Program Staff & Expenses	2,300	1,341
	Off-Site Offices Staff & Expenses	344	334
	TOTAL TECHNOLOGY PROGRAMS & RESEARCH	7,533	4,967
2. REGIONAL OPERATIONS			
	Regional Leadership	250	180
	Support Partnerships	330	310
	Regional Offices Staff & Expenses	1,916	1,803
	TOTAL REGIONAL OPERATIONS	2,496	2,293
3. PROGRAM COMMUNICATIONS			
	Marketing	381	285
	Public Relations	275	221
	Resource Development	226	200
	Program Staff & Expenses	513	432
	TOTAL PROGRAM COMMUNICATIONS	1,395	1,138
	TOTAL PROGRAM COSTS	11,424	8,399
4. GENERAL & ADMINISTRATIVE (G&A)			
	TOTAL PROGRAMS plus G&A	12,739	9,564
5. OTHER COSTS			
	Building Operating Costs	1,355	1,355
	Assets	254	103
	TOTAL OTHER COSTS	1,609	1,458
	TOTAL EXPENSES	14,348	11,022
	BALANCE	0	0

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

The current budget requires a consolidation and reshaping of resources to align CIT commitments with the new strategic plan and the appropriated funds from the General Assembly.

For FY 2003 appropriated funds will be \$9.2 million, a reduction of some 26 percent from the \$12.5 million available in FY 2002. The total operating budget for FY 2003 is \$11.02 million, consisting of \$9.2 million in state appropriations and \$1.8 million from other revenue sources.

The resources are allocated to the following major categories:

\$11.022	{	\$4.967 — Technology Programs and Research
		\$2.293 — Regional Operations
		\$1.138 — Program Communications
		\$1.165 — G&A
		\$1.458 — Other Costs (Building, Assets)

CIT made changes in personnel and positions that consolidated some programs and reduced administrative support and resources at headquarters. Altogether 14.5 positions were eliminated; 4.5 of those were vacant. Seven were based in headquarters and represent a consolidation of industry outreach efforts, web site and administrative functions. Three positions were in regional offices. Two were support positions. In Southwestern Virginia, CIT will pursue alternate staffing mechanisms for its offices. CIT plans to expand its partnerships with the Virginia Electronic Commerce Technology Center (VECTEC) West office in Lebanon and the Small Business Development Center (SBDC) offices in Abingdon and Big Stone Gap to ensure all sections of Virginia have access to CIT services. Our Senior Regional Director based in Roanoke will have overall responsibility for the region.

With the elimination of the Executive Director of Research and Industry Partnerships position, the functions and personnel in that department have been divided between Program Communications (web responsibilities) and Technology Programs (awards, centers, tech transfer and federal business development). In addition, two industry sectors—Information Technology and Telecommunications—have been combined into one and will be served by a single industry director.

To accommodate the reduced appropriation, CIT also made budget cuts in its programs. It eliminated funding from the Virginia Space Flight Authority, as well as that associated with the aerospace industry director's position. Two centers also received substantial cuts: The Center for Plasma and Photon Processing, which had received CIT funding for three years and which has won a National Science Foundation (NSF) grant. While CIT will provide matching funding for the NSF Center, it will do so at a much lower level. The awards program, which funds applied research and development for businesses, was also reduced by \$250,000.

CIT will concentrate on attracting new sources of revenue in the coming year, particularly research funds from the federal government. Two major new contracts won this past year, NASA's Technology Commercialization Center (TeCC) and the Federal and State Technology (FAST) Partnership Program, are already bringing in funds. They are expected to add some \$181,000 annually to the CIT budget.

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In addition to its regular duties, CIT will assist with several research efforts. The General Assembly has tasked CIT directly or indirectly with eight studies that will be due in the fall. The topics range from rural broadband to assistive technology for the disabled. The legislature also asked the Secretary of Technology to study the land and property owned by CIT.

DETAILED STRATEGIC GOALS, PLAN OF WORK AND METRICS FOR FISCAL YEAR 2003

GOAL 1: ENHANCE FEDERAL RESEARCH FUNDING TO VIRGINIA'S COLLEGES AND UNIVERSITIES AND INDUSTRY

PLAN OF WORK

1.1 Increase R&D funding for Virginia's colleges and universities, including Virginia's historically black colleges and universities.

Improvements in R&D funding for Virginia's colleges and universities, particularly its HBCUs, will contribute to overall economic development and inclusion goals for the Commonwealth. To do this:

Federal/Business Development and Industry Programs will:

- working with Virginia's federal liaison office, identify federal programs in critical industry sectors and gather resources in the Commonwealth to respond to these opportunities
- cultivate program managers interested in expanding R&D investment in Virginia's Historically Black Colleges and Universities, continuing success of pilot effort with the Defense Advanced Research Projects Agency (DARPA) and others
- identify researchers and projects to assist with federal grant capture

Industry Programs will:

- work with university consortia and industry partners to develop competitive research centers of excellence
- identify new opportunities for research centers
- cooperate with the State Council of Higher Education for Virginia (SCHEV) subcommittee focused on increasing federal research investment
- identify and take steps to eliminate barriers to increased federal research through work in support of the Governor's Commission on Biotechnology and the Virginia Research and Technology Advisory Commission (VRTAC)
- provide opportunities for Virginia researchers to network with federal program managers and appropriators through research showcases and events such as the Biotechnology Summit in Fall, 2002

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Technology Awards will:

- re-write CIT's awards guidelines to facilitate leveraging federal match funding
- track federal funds leveraged against CIT awards/assistance

Regional Operations will:

- identify opportunities for small companies to work with universities (including HBCUs) in federal grant capture
- identify opportunities for minority-owned companies to work with HBCUs (and other universities) in federal grant capture

Metric 1.1 – By the end of FY 2003, Virginia's colleges and universities will receive 20 percent more federal R&D funding than in levels projected for 2002, an increase of \$57 million, including increasing federal R&D funding to Virginia's historically black colleges and universities by an additional \$2.6 million, a 20 percent increase over calendar 2000 funding levels, as reported by the NSF.

1.2 Increase Virginia's SBIR funding

Increasing Virginia's SBIR funding through the outreach and support efforts of its partnership with the Small Business Administration's (SBA's) Federal and State Technology Partnership Program (FAST) will result in improving the economic development potential for participants in this federal program. The purpose of Virginia's FAST program is to increase SBIR applications from regions outside of Northern Virginia, to increase participation by minority and women-owned businesses, to diversify the applicant pool, particularly towards biotechnology companies and to improve the commercialization rates for SBIR-funded technologies. To do this:

Federal and State Technology Partnership Program will:

- deliver university-based entrepreneurial "Bootcamps" for faculty at Virginia Tech, Virginia Commonwealth University and the University of Virginia
- deliver twice-yearly entrepreneur mentoring events in Northern Virginia, Richmond, Charlottesville, Blacksburg-Roanoke and Hampton Roads
- sponsor SBIR Proposal Workshops in Charlottesville, Blacksburg and Northern Virginia
- establish FAST Partnership Program liaisons to Virginia Tech, Virginia Commonwealth University and the University of Virginia to identify faculty research with commercial potential and to assist faculty entrepreneurs in pursuing SBIR and STTR awards

Technology Awards will:

- provide matching support for SBIR applicants

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Regional Operations will:

- showcase federal opportunities to Virginia's companies and universities
- assist individual SBIR applicants
- connect community leaders in underserved areas with federal opportunities

Entrepreneurship Centers programs will:

- inform client companies about SBIR opportunities through CIT's FAST program
- define a minority SBIR outreach project with both Virginia State and the Norfolk State Entrepreneurship Centers

Metric 1.2 – By the end of FY 2003, CIT will increase Virginia's share of total federal SBIR funding by one percent of the national total, an increase of approximately \$10.8 million over current funding levels, as reported by the Small Business Administration.

1.3 Increase Virginia's ATP funding

Additional Advanced Technology Program (ATP) projects will improve Virginia's access to early stage high-risk funding for new technologies. To do this:

Federal/Business Development will:

- assist potential applicants to the National Institute of Standards and Technology (NIST) Advanced Technology (ATP) program

Regional Operations will:

- Identify and assist potential ATP applicants

Metric 1.3 – By the end of FY 2003, CIT will increase ATP funding to Virginia's companies by an additional \$4 million, a 10 percent increase over current funding levels, as reported by the U.S. Department of Commerce.

1.4 Develop a statewide list of R&D priorities

In its role as coordinator of the major stakeholders, CIT will create a unified mechanism for developing a statewide list of R&D priorities and communicating Virginia's R&D priorities to federal appropriators. To do this:

Strategic R&D Studies will:

- work with the Virginia Research and Technology Advisory Committee, centering around the annual Spring "Congressional Day" event, to create a unified channel for requests to federal appropriators by working with VRTAC, universities and Virginia Liaison Office to build a state research priority list.

Metric 1.4 – CIT will finalize a unified research priority list by the end of February 2003.

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GOAL 2: COMMERCIALIZE INTELLECTUAL PROPERTY FROM UNIVERSITIES AND LABORATORIES AND GROW ENTREPRENEURIAL COMPANIES

PLAN OF WORK

2.1 Identify, catalogue, and disseminate best practices

Creating a template of best practices for technology entrepreneurs in Virginia will expand the audience of potential entrepreneurs and promote more technology start-ups and spin-offs. To do this:

Entrepreneurship and Finance Program will:

- develop a plan for creating entrepreneurship template
- research, write and publicize template

Metric 2.1 – By the end of FY 2003, CIT will develop a template or guidebook of best practices for entrepreneurs that collects the best information and data available and provides a road map for entrepreneurs creating new technology companies.

2.2 Make university and laboratory IP easily accessible to interested companies

Improving the electronic dissemination of university and laboratory IP will result in increased access to technology transfer opportunities for Virginia companies with Virginia's research institutions. To do this:

Technology Awards will:

- upgrade university systems for presenting licensable intellectual properties online.
- integrate university systems to present all of the state's IP through one electronic portal.
- initiate discussions with federal labs to begin electronic cataloging of license-able properties.
- market and promote this and other available databases and tools, which can help value IP and assess patent potential

Metric 2.2 – By the end of FY 2003, CIT will make university and laboratory IP easily accessible to interested companies by augmenting the marketing process through training and electronic channels.

2.3 Increase the licensing of IP at institutions and federal labs

Increasing licensing, particularly by Virginia companies will increase the number and diversity of technology companies operating in Virginia. To do this:

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Entrepreneurship and Finance Program will:

- develop structured call plan to initiate discovery and tracking of transferable research at universities and labs
- re-focus entrepreneurship centers on working with faculty entrepreneurs
- initiate university entrepreneurship “bootcamps” for faculty on FAST model
- carry out legislative studies on barriers and incentives in technology transfer and commercialization (HB530, HJ88 and HJ206), with Director, High Performance Manufacturing Program

Regional Operations will:

- working with FAST outreach personnel and Industry directors, develop relationships with faculty members interested in commercializing their intellectual property (IP) and educate themselves on IP available for license
- identify companies interested in licensing technologies and broker linkages with available intellectual properties in Virginia universities and federal laboratories
- establish relationships with federal laboratory researchers and federal tech transfer offices – one new organization per quarter

Metric 2.3 – CIT will obtain a benchmark on the number of licenses awarded to Virginia companies and increase the percentage of licenses to Virginia companies to 40 percent of the total in FY 2003.

2.4 Identify centers of excellence

Focusing on those centers of excellence with successful records of commercialization will amplify the effect of these centers. To do this:

Regional Operations and Industry Programs will:

- evaluate commercialization successes quantitatively, using CIT impact survey results, and qualitatively, based on case-based knowledge
- intensify efforts with successful centers

Metric 2.4 – By the end of FY 2003, CIT will identify current and future university-based centers of excellence to serve as sources of technology available for commercialization.

2.5 Increase the number of companies spun out of Virginia’s colleges and universities

Increasing faculty spin-off and other university-based ventures will increase the culture of entrepreneurship at Virginia’s institutions. To do this:

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Entrepreneurship and Finance Program will:

- develop a baseline of FY02 spin-off activity from VA universities
- work with faculty entrepreneurs to deliver business assistance, identify mentors and key personnel
- work with technology entrepreneurs to commercialize university technology

Regional Operations and Industry Programs will:

- identify faculty candidates and assist them in spinning out their companies in partnership with the university-based Entrepreneurship Centers and other resources
- work with regional networks of entrepreneurs, such as the Netpreneur program, to identify entrepreneurial talent and accelerate start-up activity

Metric 2.5 – By the end of FY 2003, CIT will facilitate a 10 percent increase in technology start-ups statewide (about 330) and a 20 percent increase in university-based start-up or spin-off technology companies. At an average annual salary of \$75,000 for a technology job, this will create an estimated economic impact of \$25 million. .

GOAL 3A: PROMOTE TECHNOLOGY-BASED ECONOMIC DEVELOPMENT

PLAN OF WORK

3.a.1 Increase the net number of technology companies in Virginia by 1,200 and employees by 8,000

Growth in the number of technology companies and their employees will accelerate. CIT's, VEDP's and other service providers' assistance will result in these businesses contributing to economic development across the Commonwealth and creating high-paying high-value employment. To do this:

Regional Operations will:

- work in partnership with VEDP in developing prospects for relocation or expansion
- assist technology entrepreneurs in navigating the state's network of resources, such as the small business development centers and locally funded or private incubators.
- review business plans and marketing plans of technology entrepreneurs and assist them with the business and technical research they need.

Support Partnerships will:

- provide frontline assistance through SBDCs in regions of the state lacking CIT personnel.

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E-Business Outreach will:

- provide low-cost technical assistance for technology start-ups and evaluate technical plans

Entrepreneurship and Finance will:

- provide assistance to start-up and spin out firms through Virginia's network of Entrepreneurship Centers with business and technical problems, access to finance, marketing and accessing intellectual property and federal funding

Industry Programs will:

- assist regional offices and VEDP, provide sectoral expertise and identify resources for industry projects

Technology Councils and Virginia Technology Alliance programs will:

- sponsor leadership development for younger councils to enable the development of technology communities and business opportunities throughout the state
- improve electronic communication and use of web resources such as common calendar systems to facilitate networking
- identify success stories emerging from the councils' activities

Metric 3.a.1 – Increase the net number of technology companies in Virginia by 1,200 and employees by 8,000, as measured by the Virginia Employment Commission.

3.a.2 Increase economic activity of Virginia's businesses

CIT's assistance will help Virginia businesses, particularly technology start-up companies, to increase their sales, cost savings, and private capital acquisition. To do this:

Regional Operations will:

- initiate and sustain client relationships
- identify resources and provide the highest quality customer service
- provide prompt referrals to partner organizations

Support Partnerships will:

- provide Virginia business with access to NASA and other federal lab developed technology via the Technology Commercialization Center (TECC) partnership between CIT and NASA
- work in partnership with Virginia's Small Business Development Centers to provide access to CIT programs in areas of the state where duplication of offices would not be cost effective

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E-Business Outreach will:

- Support VECTEC extension efforts that provide direct services to small businesses and communities across the Commonwealth in developing e-business capabilities

Entrepreneurship and Finance will:

- provide assistance to start-up and spin out firms through Virginia's network of Entrepreneurship Centers with business and technical problems, access to finance, marketing and accessing intellectual property and federal funding

Manufacturing Extension Support will:

- deploy manufacturing technologies by partner organizations in Virginia's Manufacturing Extension Partnership (VPMEP), which also includes the Manufacturing Technology Center (MTC) and the Technology Applications Center (TAC)
- Provide engineering assistance to technology companies and manufacturers on applied manufacturing problems through the TAC to improve client companies' competitiveness

Industry Programs will:

- assist regional offices, provide sectoral expertise and identify resources for industry projects

Metric 3.a.2 – Make Virginia businesses, particularly technology start-ups, more successful by adding \$250 million in increased sales, cost savings and private capital by FY 2004, as measured by an independent client survey.

3.a.3 Build entrepreneurial networks

CIT will establish e-business villages to assist small, rural companies initiate electronic commerce and e-business and e-forums to provide educational outreach to rural areas on technology topics and build an e-business community in these areas. To do this:

E-Business Outreach (Technology Programs and Research) will:

- support existing projects and create new E-Business Villages, which act as incubators for organizations interested in experimenting with e-commerce at a relatively low cost
- establish new E-Commerce Forums and focus on linking the existing forums into an integrated statewide network for information sharing, networking and resource development. The forums will continue to be regional, educational, vendor-neutral groups that operate either as a stand-alone organization (non-profit) or as a sub-group of an existing organization, such as a Technology Council
- make VirginiaLink an integral part of both the e-Business Village and E-Commerce Forum outreach activities

Metric 3.a.3 –By the end of FY 2003, increase participation in the e-business villages and e-forums by 15 percent, as measured by participation numbers in the villages and forums.

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3.a.4 Collaborate with the Virginia Economic Development Partnership

The Virginia Economic Development Partnership and CIT will reach out to smaller companies through the delivery of a series of workshops on export procedures and opportunities.

Regional Operations will:

- conduct export workshops in partnership with the Virginia Economic Development Partnership (VEDP)

Metric 3.a.4 – Hold two workshops or boot camps by in Hampton Roads and central/southern Virginia that will educate firms that do not currently export with the procedures and opportunities. By the end of FY 2004, ten small companies that do not currently export will be exporting \$1 million per year, as measured by the CIT client survey.

GOAL 3B: INCREASE BROADBAND DEPLOYMENT THROUGHOUT VIRGINIA

PLAN OF WORK

3.b.1. Benchmark access to broadband and demand

CIT will conduct a benchmarking study of business and household access to and demand for high speed, high quality, affordable broadband, including wireline, wireless, and satellite services. To do this:

E-Business Outreach will:

- conduct a study on supply and demand for broadband, including legislative study on availability of broadband (HJ163)

Metric 3.b.1 – Study will be completed and published.

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3.b.2. Increase demand for broadband by Virginia's citizens and businesses

CIT will develop and sponsor workshops intended to increase demand for broadband by Virginia's citizens and businesses. To do this:

E-Business Outreach will:

- continue to roll out and expand the coverage of the VirginiaLink advanced telecommunications program so that organizations throughout the state can have access to affordable broadband services. VirginiaLink will become an integral part of both the e-Business Village and E-Commerce Forum outreach activities.
- conduct broadband applications workshops

Metric 3.b.2 – 100 percent of all households and businesses that request access in Virginia will be provided with the opportunity to purchase high-speed, high-quality, affordable broadband by January 1, 2006.

ADDITIONAL ACTIVITIES IN SUPPORT OF ALL GOALS, LEGISLATIVE REQUESTS AND CUSTOMER SERVICE

- **Legislative Studies** – The General Assembly of Virginia has asked CIT to carry out eight legislative studies. Three of these support improving Virginia's technology transfer and commercialization processes. One study addresses the availability of broadband telecommunications services in rural Virginia. One study examines what CIT can do in partnership with the Secretariat of Health and Human Resources to support the development and deployment of technologies for the disabled. Three additional studies respond to items in the budget bill that ask about CIT's land and building, program metrics and research center performance. CIT is named in each of these studies as either the lead or supporting organization, and has assigned staff to each. Most studies will be completed by December, 2002.
- **Metrics Economic Impact and Customer Survey** – CIT will collect performance and impact information in response to requests by the Administration, the Secretary of Technology, the General Assembly, the CIT Board and several other sub-constituencies, such as the Department of Planning and Budget, the Joint Committee on Technology and Science and its committee to study CIT. In order to respond to these requests, several of which require independent data collection, CIT has established a program area devoted to forecasting and collecting metrics information and disseminating it in its requested format by specific due dates.
- **Innovation Avenue and other CIT websites** – Innovation Avenue is a web site maintained by CIT to provide information relevant to Virginia's technology community. CIT also maintains a corporate web site and a site for VirginiaLink. The information provided on Innovation Avenue includes technology council activities, a searchable statewide technology events calendar, services available through Virginia's SBDCs, online reports and publications, news feeds and interactive databases.

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

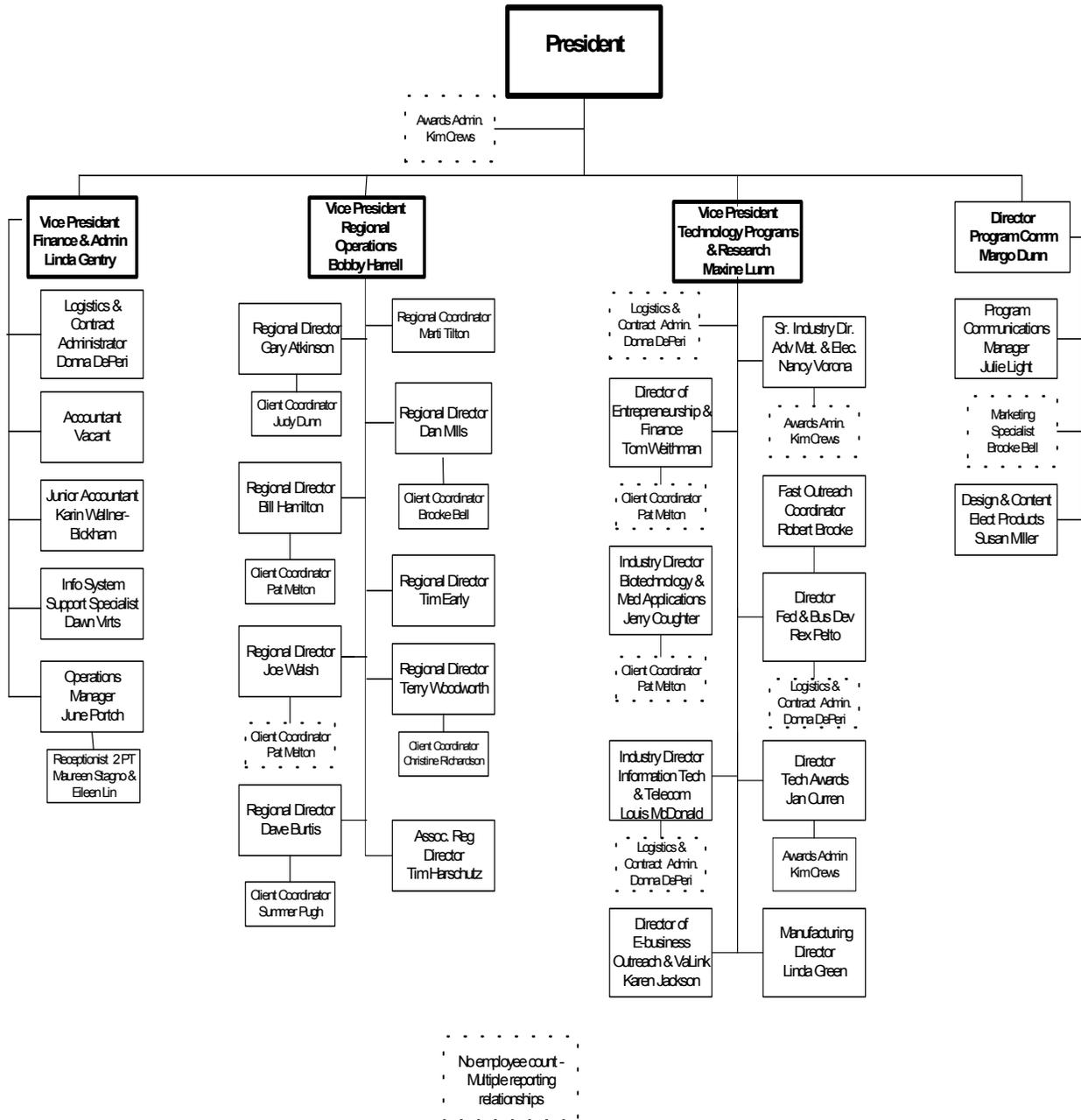
DESCRIPTION OF ORGANIZATION AND CHANGES

In the FY 2002 Operating Plan, CIT had 50.5 budgeted positions. In FY 2003, it has reduced that number to 36 budgeted positions. Of the 14.5 positions cut, 7.5 positions were from administrative or support positions. Two positions were cut from web design and support. One executive manager position was cut, along with 4 programmatic positions.

The organizational chart below does not indicate one temporary employee that is funded entirely by a federal contract. There are no benefits provided to this employee, except for those that are statutorily mandated, and the position terminates when the federal contract terminates. The new organizational chart for FY 2003 follows.

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

ORGANIZATIONAL CHART FOR FISCAL YEAR 2003



APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

DETAILED OPERATING BUDGET FOR FISCAL YEAR 2003

		(In Thousands)	(In Thousands)
		FY 2002	FY 2003
		Budget	Budget
REVENUE		14,348	11,022
	State General Fund Appropriation	12,506	9,231
	Interest Income	350	300
	Other		
	Non-State Revenue	-8	
	Techology Commercialization Center, Inc.	90	81
	Building Rev	1,515	1,515
	University Distributions	35	35
	Direct Funding Payback	20	20
	Reserve for Building	-160	-160
EXPENSES			
1. TECHNOLOGY PROGRAMS & RESEARCH			
1.A.	Technology Industry Sectors	1,340	975
	High Performance Manufacturing	75	50
	VPMEP (Va Philpott Manufact Ext Partnrshp)	330	250
	MTC (Manufacturing Technology Center)	95	75
	TAC (Technology Application Center)	265	150
	Advanced Telecomm & Internet Infrastructure	75	0
	Biotechnology & Biomedical Applications	75	150
	Advanced Materials & Electronics	75	150
	Information Technology Industry	75	150
	Aerospace and Transportation Technologies	75	0
	Virginia Commerical Space Flight Authority	200	0
1.B.	Business Support Programs	710	610
	E-Business Outreach	100	100
	VirginiaLink	75	50
	VECTEC Outreach		25
	Entrepreneurship and Finance	100	75
	Entrepreneurship Center Support	360	360
	Hampton Road Technology Incubator	75	0
1.C.	State Wide Technology Inittatives	332	190
	State-convened technology inittatives	200	150
	International	15	15
	WITSA	25	25
	New Initiatives	92	0

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

1.D.	Policy Research	190	155
	Matchmaker database and related projects	50	15
	Program Review and metrics collection	35	0
	Executive or legislative studies	65	100
	Technology Policy studies	40	40
1.E.	Technology Centers	770	325
	Center for Plasma & Photon Processing	335	0
	Manufacturing Innovation Center	125	0
	New Center Development		200
	Opportunity Fund	80	25
	Feasibility Studies	200	100
	Technology Center Management	30	0
1.F.	Federal/Business Development	232	262
	Federal Resource Development	50	50
	Appropriations Consulting	120	100
	SBIR/Federal Proposal	50	50
	SBIR & Other Technology Transfer Conferences	12	12
	FAST Contract Expenses		50
1.G.	Technology Awards	1,190	690
	Challenge & Innovation	820	620
	Competitive Infrastructure	320	0
	Specialized Resources	20	50
	Award Management	30	20
1.H.	Strategic R&D Studies	125	85
	VRTAC support	75	35
	New R&D studies	50	50
1.I.	Program Staff & Expenses	2,300	1,341
	Salaries & Benefits	1,803	996
	Travel	117	75
	Communications	56	45
	Network Communications	27	14
	Insurance	22	16
	Repairs & Maintenance	2	2
	Equipment Rental	7	6
	Office Expense	53	43
	IT(Consulting, Service & Supplies)	89	65
	Dues, Subscriptions & Memberships	13	13
	Accounting Fees	13	9
	Legal	19	14
	Temporary Services	9	9
	Other Professional Services	23	7
	Training	33	18
	Automobile	14	11

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

1.J. Off-Site Offices Staff & Expenses		344	334
	Salaries & Benefits	239	239
	Travel	23	15
	Rent	14	14
	Communications	10	10
	Network Communications	3	4
	Insurance	3	4
	Repair & Maintenance	2	2
	Equipment Rental	6	6
	Office Expense	8	8
	IT(Consulting, Service & Supplies)	12	14
	Dues & Memberships	4	4
	Accounting Fees	2	2
	Legal	3	4
	Other Professional Services	3	2
	Training	8	4
	Networking	4	4
	TOTAL TECHNOLOGY PROGRAMS & RESEARCH	7,533	4,967
2. REGIONAL OPERATIONS			
2.A. Regional Leadership		250	180
	Task force Rollouts	30	0
	Events and Opportunities	70	50
	Regional Relationships	55	50
	Commercialization Support	60	45
	Metrics Economic Impact & Customer Survey	35	35
2.B. Support Partnerships		330	310
	Technology Councils	115	95
	Virginia Tech Information Center	180	180
	Virginia Technology Alliance	15	15
	Technology Commercialization Center, Inc.	20	20
2.C. Regional Offices Staff & Expenses		1,916	1,803
	Salaries & Benefits	1,392	1,296
	Travel	128	118
	Rent	80	80
	Communications	35	35
	Network Communications	21	18
	Insurance	17	21
	Repair & Maintenance	4	4
	Equipment Rental	3	3
	Office Expense	17	17
	IT(Consulting, Service & Supplies)	70	84
	Dues & Memberships	10	9
	Subscriptions & Publications	4	4
	Accounting Fees	10	12
	Legal	15	18
	Temporary Services	6	6
	Other Professional Services	18	9
	Training	40	34
	Networking	11	10
	Sponsorships	18	10
	Trade Shows	16	15
	Other	1	0
	TOTAL REGIONAL OPERATIONS	2,496	2,293

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

3. PROGRAM COMMUNICATIONS				
3.A.	Marketing		381	285
	Advertising/Branding		256	100
	Publications		85	150
	Stationery		10	15
	Trade Shows		20	20
	Regional outreach marketing		10	0
3.B.	Public Relations		275	221
	Media Relations		150	120
	Event Development		25	25
	Executive & Corporate Outreach		100	76
3.C.	Resource Development		226	200
	Innovation Avenue		100	0
	Website management		50	100
	Resource databases (COS, Deals, Chmura, etc.)		60	100
	Quarterly updates of Chmura study		16	0
3.D.	Program Staff & Expenses		513	432
	Salaries & Benefits		408	330
	Travel		14	7
	Communications		12	15
	Network Communications		6	5
	Insurance		5	5
	Repairs & Maintenance		0	1
	Equipment Rental		1	2
	Office Expense		11	14
	IT(Consulting, Service & Supplies)		19	22
	Dues, Subscriptions, & Memberships		2	1
	Accounting Fees		2	3
	Legal		5	5
	Temporary Services		0	10
	Other Professional Services		5	2
	Training		21	7
	Automobile		3	4
	TOTAL PROGRAM COMMUNICATIONS		1,395	1,138
	TOTAL PROGRAM COSTS		11,424	8,399

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

4. GENERAL & ADMINISTRATIVE (G&A)		1,315	1,165
	Salaries & Benefits	1,021	882
	Travel	42	35
	Communications	32	40
	Network Communications	15	12
	Insurance	13	14
	Repairs & Maintenance	1	2
	Equipment Rental	4	5
	Office Expense	30	38
	IT(Consulting, Service & Supplies)	50	56
	Dues, Subscriptions, & Memberships	10	10
	Accounting Fees	7	8
	Legal	11	12
	Temporary Services	7	7
	Other Professional Services	13	6
	Recruitment	10	4
	Board Meeting	6	6
	Training	35	18
	Automobile	8	10
	TOTAL PROGRAMS plus G&A	12,739	9,564
5. OTHER COSTS			
5.A. Building Operating Costs		1,355	1,355
	Payroll	286	286
	Utilities	225	225
	Administration	229	229
	Operating & Maintenance	120	120
	Contracts	439	439
	Insurance	27	27
	Food Service Subsidy	29	29
5.B. Assets		254	103
	Computer Equipment	229	100
	Office Furniture	25	3
	TOTAL OTHER COSTS	1,609	1,458
	TOTAL EXPENSES	14,348	11,022
	BALANCE	0	0

APPENDIX 4: CIT OPERATING PLAN FOR FISCAL YEAR 2003

DESCRIPTION OF SALARY AND BENEFITS BUDGET FISCAL YEAR 2003

FTEs	Position Type	Programs & Research	Regional Operations	Program Comm	G & A	Total
	Headquarters					
8	Programs & Research	695,986				695,986
3	Program Communication			225,000		225,000
8	General & Administration				602,421	602,421
	Total Salaries	695,986	-	225,000	602,421	1,523,407
	Potential Bonus	48,719		15,750	68,034	132,503
	Total Benefits	251,167		89,670	211,658	552,495
	Total Headquarters Staff Costs	995,872	-	330,420	882,113	2,208,405
15	Regional Office Staff		858,432			858,432
	Total Salaries		858,432			858,432
	Potential Bonus		60,090			60,090
	Total Benefits		377,884			377,884
	Total Regional Staff Costs		1,296,406			1,296,406
2	Off Site Offices	161,906				161,906
	Total Salaries	161,906				161,906
	Potential Bonus	11,334				11,334
	Total Benefits	65,279				65,279
	Total Off Site Costs	238,519	-	-		238,519
	TOTAL CIT SALARIES & BENEFITS	1,234,391	1,296,406	330,420	882,113	3,743,330
36	Total F T Es	10	15	3	8	36

APPENDIX 5: AGENCY CONTACTS AND PROJECT LEADS

APPENDIX FIVE – AGENCY CONTACTS AND PROJECT LEADS

Center for Innovative Technology

- Newstrom, George (Interim President)
(804) 786-9579
sotech@gov.state.va.us
- Harrell, Bob (grow technology companies)
(757) 397-7016
bobby@cit.org
- Jackson, Karen (broadband)
(757) 249-0886
karen@cit.org
- Gentry, Linda (federal funding and commercialization of intellectual property)
(703) 689-3035
linda@cit.org

Chief Information Officer Advisory Board and Council on Technology Services

- Hunter, Jenny (Executive Director)
(804) 786-9579
jhunter@gov.state.va.us

Department of Information Technology

- Clark, Cheryl (Director)
(804) 371-5500
cclark@dit.state.va.us
- Carter, Leslie (consolidation of technologies)
(804) 371-5577
lcarter@dit.state.va.us
- Davidson, Bob (broadband)
(804) 371-5545
bdavidson@dit.state.va.us

APPENDIX 5: AGENCY CONTACTS AND PROJECT LEADS

- Dodson, Paul (procurement)
(804) 371-5945
pdodson@dit.state.va.us
- Gordon, Bruce (improved tracking of IT expenditures)
(804) 371-5529
bgordon@dit.state.va.us

Department of Technology Planning

- Simonoff, Jerry (Director)
(804) 786-7711
jsimonoff@ntp.state.va.us
- Hill, Bernie (overhaul of state administrative systems)
(804) 371-0016
bhill@ntp.state.va.us
- Lubic, Paul (online services, consolidation of technologies, security program, and capital planning and funding process)
(804) 371-0004
plubic@ntp.state.va.us
- Ziomek, Dan (comprehensive technology management policy and improved tracking of IT expenditures)
(804) 371-2763
dziomek@ntp.state.va.us

Virginia Information Providers Network

- Doss, Christopher (Executive Director) (online services)
(804) 786-4590
cdoss@vipnetboard.state.va.us
- Willett, Rodney (customer-facing Internet portal)
(804) 786-6202
rod@vipnet.org