



TECHNOLOGY STRATEGY PLAN

Prince George's County, Maryland



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INTRODUCTION	3
1.1 OVERVIEW	3
1.2 STRATEGIC PLAN PROCESS.....	6
1.3 VISION	9
2 STRATEGIC INITIATIVES	11
2.1 E-BUSINESS	12
2.2 ENTERPRISE IT MANAGEMENT.....	13
2.3 BUSINESS CONTINUITY	14
2.4 CUSTOMER RELATIONS.....	15
2.5 ENTERPRISE ARCHITECTURE	16
3 MANAGEMENT MODELS	17
3.1 ENTERPRISE IT OPERATING MODEL.....	17
3.2 IT GOVERNANCE MODEL.....	23
4 ARCHITECTURAL DIRECTION	32
4.1 OVERVIEW OF ARCHITECTURAL DIRECTION	32
4.2 ENTERPRISE APPLICATIONS AND DATA ARCHITECTURES	34
4.3 ENTERPRISE TECHNOLOGY INFRASTRUCTURE	35
4.4 ARCHITECTURAL STANDARDS.....	37
APPENDICES	43
DOCUMENT ACRONYM DEFINITION LIST	44
LIST OF ENABLING TECHNOLOGIES	48
OITC ORGANIZATIONAL CHART	53





INTRODUCTION

1.1 OVERVIEW

1.1.1 Background

The citizens, the business community, and the employees of Prince George's County expect advancing technology to support them in the accomplishment of their daily tasks and in their interactions with the County. Prince Georges County Government, in order to serve its constituents to the fullest extent possible, must examine how technology can best support the functions of the government. In addition the Executive Branch and its agencies, the Legislative Branch, the Judicial Branch, and other County Government entities must meet the expectations of those constituencies. This must be done within an environment that requires adaptability.

The growth in demand for services, along with the changing needs in a dynamic County calls for leadership, expertise, and innovation. Heightened expectations from the County's constituents, the needs of a growing business community that interacts and conducts business with the County, and limits on County resources drive a need for improved government efficiency and improved citizen access to government information and services. The continuing exploitation of technology is a major tool as the County Government responds to the needs of its constituents and the business community.

It is essential that the County continuously examine and re-evaluate the Technology Strategy Plan for the County as well as the structure of Information Technology (IT) and its mission. The strategic priorities also need re-examining as new or changed priorities may need to be identified.

This plan, then, serves as an outline for moving forward with new IT initiatives, IT improvements, and enhancements as well as summarizing the underlying structure for supporting technology in the County. Additionally, it will outline direction in regards to the various strategic initiatives identified that support the mission of the Agencies and Branches of Prince George's County Government.



1.1.2 Purpose

The Technology Strategy Plan summarizes major areas requiring efficient and effective technology solutions, identifies strategic initiatives, and addresses governance of IT.

Typically, in moving from a vision to an action plan, a limited number of strategic initiatives are identified for the organization that ties closely to the strategic goals. They represent a consolidation of ideas and initiatives into brief phrases that identify high-level areas on which the organization will focus.

Prince George's County has identified five (5) strategic initiatives.

They are:

- **E-Business**
- **Enterprise IT Management**
- **Business Continuity**
- **Customer Relations**
- **Enterprise Architecture**

While these are conceptual in nature, further refinement of these strategic level initiatives identifies various subordinate elements. Detail is then developed that moves from the conceptual towards actionable initiatives and projects.

1.1.3 Applicability

The Technology Strategy Plan will summarize the underlying structure for supporting technology in the County and serves as a blueprint for moving forward with new IT initiatives. Additionally, it will provide direction in regards to the various strategic initiatives identified that support the mission of the Agencies and Branches of Prince George's County Government. This Technology Strategy Plan is a scheduled update of the existing plan.

Prince George's County is a dynamic County that is moving forward in many areas. Supporting this progress through technology requires a close alignment with business strategies and the efforts of the various entities in the County to serve the needs of the citizens. While part of the effort in developing a technology strategy plan has necessarily dealt with organization and governance; a comprehensive picture of the technology needs of the County over the next several years has been developed, along with a plan to address those needs.



1.1.4 Disclaimer

The Technology Strategy Plan, as with any attempt to capture the state of technology and chart a direction, is a point-in-time document that can only reflect the facts and projections at the time of its development. In this plan, every effort has been made to define the strategic initiatives in terms that are specific enough (i.e., E-business, Enterprise Architecture) to define direction, yet generic enough to allow for needed tactical flexibility in addressing these initiatives. Strategic planning does not occur in 18 month intervals but rather is a continuous process that must consider changes that may occur prior to the next published update of the Technology Strategy Plan. This document then, sets out the technology strategy for Prince George's County as of the date of its publication—looking out 3 to 5 years—and anticipating a time frame of 18 to 36 months. However, a focus on evaluating needs and formulating strategy continues.



1.2 STRATEGIC PLAN PROCESS

This is an update of the existing plan. Developing this plan was pursued by both evaluating the current state of IT in the County and canvassing the agencies and branches for initiatives related to the strategic plan. From this base or strategic foundation, a direction or vision could be developed that reflected how to serve the technology needs discovered. With a vision in place, a framework of goals could be determined under which initiatives can be reviewed, consolidated where appropriate, identified as to strategic relevance, and slotted into a timeframe considered achievable.

The project team used interviews, surveys, management workshops, and SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis techniques to: develop major themes, identify issues and opportunities, develop planning goals, and identify critical success factors.

Major Themes:

- Enterprise IT Management (Governance) is a central opportunity
- Customer Relations (IT/Business alignment, Citizen interaction, service, and support)
- Enterprise Architecture (direction, integration, technology renewal)

Planning Goals:

- Identify and understand an IT Governance model including demand management, the decision-making process, and oversight
- Clarify architectural direction
- Move forward with Enterprise System Replacement

Issues/Opportunities:

- Improved relationship of Agencies/functions and the Office of Information Technology & Communications (OITC)
- Core systems replacement
- Will we be Mainframe-based, Server-based or continue as a combination?
- Effective structure that supports getting the right projects done right

Critical Success Factors:

- Support of, and visibility to, Executive Management
- Metrics and Measurement



The next focus is to develop a strategic foundation from which to plan. The purpose of building such a foundation is to align our IT strategy with the business strategies of the County, its Agencies and Branches of government. This foundation has been built by analyzing the business needs and initiatives of the budget entities in the County.

Using information obtained from interviews and surveys, and proceeding from a strategic foundation, a vision has been developed. In addition, an operating model has been developed that reflects an approach to technology governance from the perspective of enterprise IT management. Under this approach, there are five major areas of focus:

Five Major Focus Areas for Operating Model

Evolve IT Strategy (provide current IT vision, direction, and an adaptive framework for execution and control)

Evolve IT Capabilities (proactively develop the capabilities to implement the strategy)

Deliver IT Solutions (build, test, integrate, implement, and adapt IT solutions)

Operate & Sustain IT Solutions (run and support systems and infrastructure)

Control & Manage IT Operations (control execution of the overall IT management process)

1.2.1 Methodology

The agencies and branches of government were asked for their initiatives over the next 18 months to three years. These initiatives were examined collectively to determine the likely implications for IT (e.g., what type of enabling technology or capability is explicitly called for or likely to be useful?). The initiatives were then considered against IT capabilities in the areas of *Infrastructure, Systems Development and Maintenance, and Enterprise IT Administration*. Appendix 2 contains the list of enabling technologies that were developed.

The enabling technologies required to address the initiatives are considered strategically important. Those capabilities are consistent with our last strategic plan.



1.2.2 Discussion of IT Implications

The enabling technologies identified as strategic give us a base from which to determine:

- A vision for OITC and technology support
- An enterprise level operating model
- An architectural direction
- What type of applications and solutions delivery approaches are necessary

Web/Portal based applications and database usage were identified as areas of technology that will enable a number of initiatives to move forward. This was true not only in Applications Development & Integration, but also in Operations and Maintenance. As the emphasis on E-Business continues, this was not unexpected. Under the general heading of Infrastructure, Network Services support was also heavily suggested, in the areas of Network (maintaining and improving the infrastructure), Computer (software, virus protection) and Technical support.

All of the other areas that fell into the strategically important category were in the general area of Enterprise IT Administration beginning with Business Analysis. There were a number of other areas under the general heading of Program and Project Management that showed as strategic as well. These included: Project Management, Program Management, Solution Delivery processes, and Customer Relationship Management. Strategic importance was also noted for Network and Computer Security. Under the Enterprise IT Architecture area, Applications Architecture, Data Architecture, and Interoperability Architecture showed as strategic.

What does all of this mean? As one progresses through this document, the mapping of the initiatives to the enabling technology areas forms the strategic foundation for the rest of the plan. Having identified a number of initiatives that call for business analysis for instance, mechanisms have been identified in structure and policy that will help technology customers as well as providers to more clearly identify the business case, determine needs, and understand the costs involved.

Any such plan would be incomplete if it did not consider as part of the process the need to continue planning. This will both develop greater detail in support of identified initiatives and allow for the County to continually refine and maintain an accurate and relevant strategic plan.



1.3 VISION

1.3.1 Technology Mission Statement:

The Office of Information Technology and Communications is dedicated to aligning technology efforts to support the business goals of the County. OITC will provide leadership, expertise, and resources in the development and deployment of innovative technologies to improve government efficiency and citizen access to government information and services.

1.3.2 Strategic Goals

1. **Align technology efforts with business goals to provide support services to County government agencies and branches.**
2. **Deploy technologies to County entities that will enhance government efficiency and improve performance.**
3. **Enable and enhance citizen access to government information and services.**

1.3.3 Guiding Principles:

#	IT Guiding Principle	Rationale
1	Provide convenient, efficient, and effective Information Technology that achieves business objectives and improves end user productivity.	<ul style="list-style-type: none"> • Given the appropriate information technology and adequate support, users will apply technology to improve the effectiveness of the business processes that they carry out. • Effective use of information technology requires adequate training and support. These are essential if information technology is to aid productivity.
2	Manage Information Technology as an Investment.	<ul style="list-style-type: none"> • Using qualitative and quantitative benefits measurement increases awareness of the value provided through IT services. • Measuring actual benefits will help determine a basis for future IT investment.
3	Balance consideration of the value of Commercial-off-the-Shelf (COTS) packages vs. custom software development in the selection of software solutions.	<ul style="list-style-type: none"> • Packages offer the benefits of ready-made functionality and flexibility, often in a shorter time than equivalent in-house developments; however cost, customization, and Return on Investment (ROI) may favor in-house development.
4	IT strategy should be clear, brief and should include performance measures.	<ul style="list-style-type: none"> • Measuring performance provides means to continuously identify and improve areas and support evolution of the IT organization.
5	Data should be maximally available (by default) for users' utilization in their activities.	<ul style="list-style-type: none"> • The benefits and value of wide access to corporate data is considered worth the increased security risks that come with such access.



#	IT Guiding Principle	Rationale
6	Open communication will be conducted within IT and with users. Users will be engaged when considering implementation of change.	<ul style="list-style-type: none"> • Smooth and free communication within IT or with the business users reduces misunderstanding and minimizes impact on service levels. • To minimize misunderstanding, emphasize the role within IT that deals in communication to promote teamwork and productivity improvement.
7	Approach IT undertakings as a partnership of central IT management and the budget entities providing for a combination of centralized and distributed implementation.	<ul style="list-style-type: none"> • Shared ownership of IT implementations creates a partnership between OITC and the budget entities, which in turn will promote collaboration and synergy.
8	Data should be integrated at the enterprise level and managed as an enterprise asset.	<ul style="list-style-type: none"> • Information is one of the most important enterprise resources; hence, it should be managed accordingly. • The user of data has a vested interest in its timeliness, accuracy, and integrity, and is therefore the logical owner of that data. • While applications and the business processes they support may change, data tends to be stable. Also, data often needs to be shared between applications. It is therefore sensible to make the data independent of any one application. • Users of data are the best judges of its value, and are therefore best able to define the appropriate level of security to data. With this in mind, a central information security function is needed to efficiently manage collective information security risks and provide independent validation and audit of system- or process-level requirements and their satisfaction.
9	Implement contemporary, but proven, technologies.	<ul style="list-style-type: none"> • Exploits commonalities across organizational boundaries. • Provides balance between both business benefits and costs.
10	Build IT architecture that is capable of accommodating open information technology.	<ul style="list-style-type: none"> • The need for information technology to meet the rapidly changing needs of the business means that Prince Georges County should adopt the technology architecture that affords it maximum flexibility. This means open systems architectures rather than proprietary architectures. Package vendors will also adhere to this open architecture, so our adoption will improve interoperability and reduce risk of dependence on a single vendor or product. • Standardization prevents proliferation of non-approved technologies, increases compliance with standards and reduces the efforts required for proliferation and support of technology. In addition, there will be higher quality in support for smaller number of applications. • Overall benefits are lower Total Cost of Ownership (TCO), higher reuse, and lower complexity. Still, the balance between standards and users' needs should be considered.



2 STRATEGIC INITIATIVES

This section discusses the initiatives that have been identified. Our strategic focus begins with the Strategic Goals. The five strategic initiatives listed are then related to the strategic goals.

Strategic Goal	Strategic Initiative
<p>1. Align technology efforts with business goals to provide support services to County Government Agencies and Branches.</p>	<p>E-Business – This initiative includes multiple elements including internal web based applications, and internal operational capability.</p>
<p>2. Deploy technologies to County entities that will enhance government efficiency and improve performance.</p>	<p>Customer Relations – Covering all aspects of agency and branch relationships with OITC, this includes communications, customer service, service desk, feedback mechanisms, and training needs of the various budget entities.</p>
<p>3. Enable and enhance citizen access to government information and services.</p>	<p>Enterprise IT Management – This initiative is focused on enterprise IT and OITC organization and governance. In addition, defining process, functional ramp-up, and collaboration at the enterprise level are included.</p>
	<p>Enterprise Architecture – Addressing the need for planning in regards to architecture, data, applications, and interoperability.</p>
	<p>Business Continuity – In itself an initiative in regards to the capability to support critical business systems in the event of disruption to normal business processing. This initiative also encompasses other related areas such as Disaster Recovery.</p>
	<p>E-Business – This initiative includes multiple elements including external or citizen-facing web based applications, and external operational capability.</p>

In the following sections, each of the five major strategic initiatives is given greater definition and includes further granulation into other programs or focus areas listed as subordinate and referenced as actionable initiatives.



2.1 E-BUSINESS

Prince George's County's focus on "the business of government" has led to the term E-government being replaced by the term E-business. As stated above, this initiative is concerned with leveraging the power and utility of the Web and browser-based applications to support fulltime availability of citizen services and ease of interaction with the County government. Using these same capabilities to assist and promote efficient and effective internal services is also a focus of this initiative. Below are listed several actionable initiatives subordinate to E-business.



Enterprise Content Management / Document Management – A continuing initiative which is concerned with automating and digitizing workflow and paper based processing.

Enterprise Video Services – This covers video conferencing as well as developing other video based communication capabilities such as desktop video capabilities. Another facet of this initiative is the integration of information from different video sources.

Leverage Web and Web Technology – This refers more and better access to the County Government and government services through the Internet to communicate and engage with the citizens of the County. Included are social software tools such as social networking videocasts, blogs, and wikis as well as other tools. Internally, the County will be looking for greater functionality and efficiencies through browser based applications and fully exploiting collaborative tools such as SharePoint. It also refers to efforts to leverage the award-winning capabilities of Prince George's County in the Geographic Information System (GIS) area to support Public safety, citizen services, and many other efforts with maps, location pinpointing, along with building and area 3-dimensional layers.

Business Intelligence - The development and use of metrics to measure and manage performance is a leading County strategic direction. OITC will be researching, analyzing and applying technology to support the use of business analytics to produce more and better decision support information.



2.2 ENTERPRISE IT MANAGEMENT

Recognizing the need for:

- Effective oversight of technology
- IT and business alignment
- Effective and efficient processes
- A technology organization structured to support the above

A realistic effort to research and develop effective enterprise IT management is both desirable and necessary. Below are listed several areas of focus subordinate to Enterprise IT management on which effort is expected over the next 18 months.



Governance – Referring to formal high level processes and structures for IT strategic planning, prioritization, decision making and performance measurement; this initiative will enable business and IT synergy and enable effective collaboration regarding the best uses of technology to support business needs.

Policies and Procedures – A continuing initiative involving planning, writing, and organizing documents to deliver clear and consistent information concerning procedures governing administrative, project, operational, and core areas with regard to IT, and interactions with IT, at the enterprise level.

Management / Functional Structure – This initiative has to do with regularly refining the organizational structure and approach of OITC to meet the changing technology needs of the County.

Cost Containment – An initiative that has to do with applying technology to support cost reductions as well as finding ways to limit costs in the technology area.

Business Intelligence – Deriving decision support information through the use of appropriate metrics, and analytics. This information is then presented in an easily consumable format using graphics and dashboards.



2.3 BUSINESS CONTINUITY

The ability to maintain operations and technology capabilities under any circumstance is clearly a primary initiative. As technology integrates more closely with business, the continuing efforts to identify and prepare for unusual or sudden disruptions in normal service is a major focus of technology. Below are listed several actionable initiatives that fall under Business Continuity.



Disaster Recovery Plan - Fully defining plans and developing testing procedures to allow and facilitate recovery from any disaster that might interrupt technology services in the County.

Create Knowledge Base - As part of a business continuity strategy, identifying and maintaining both technical and institutional knowledge to allow us to bridge staff changes, expand the ability to respond, and handle disruptions; a focus on creating a knowledge base is a natural extension of the planning process.

Operations Maintenance - Referring to the necessary efforts to anticipate, mitigate, and plan for those events that can interrupt operational capabilities, this initiative is concerned with preventive maintenance. Whether equipment servicing, identifying future needs, examining work flow, or evaluating staff needs—the concept is to identify potential risk and take action prior to any operational breakdowns.

Security - This initiative recognizes the continuing need for security, the challenges inherent in maintaining security for the enterprise, and the varied aspects of it. This would include application or infrastructure security, cyber security, and responsibility for regional security for the National Capital Region (NCR) initiatives among other challenges. The focus is not only on obvious issues such as preventing viruses and unauthorized access, but data protection, involvement in e-discovery and Freedom of Information Act (FOIA) requests.



2.4 CUSTOMER RELATIONS

Maintaining and developing the relationships with IT customers and consumers may be the single greatest factor in effective technology support. This initiative focuses on the integration of business and technology--and the elements that support OITC interaction with our partners in County business. Covering many elements of agency and branch relationships with OITC, this initiative includes communications, service desk and the liaison between OITC and the business entities.



Communications – An area of continuing focus which touches on areas such as governance, coordination, and timely exchange of information, as well as IT and business alignment. Identifying effective means of communication and supporting their usage is a key to how effectively the County can progress in services to its constituents supported by technology.

Service Desk – A primary point of interaction between OITC and the business units, the ability to quickly respond to requests for service (24x7 availability), and provide problem resolution is a major factor in providing technology support for the County. It is also one of the main factors in the perception of technology and the relationship between technology and the business entities.

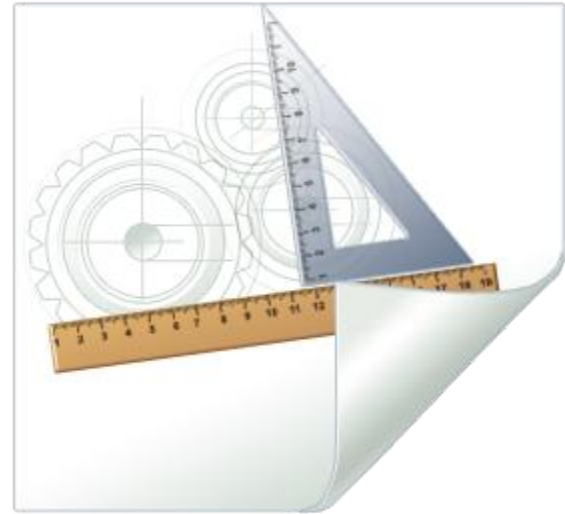
Business Liaisons and Business Analysis –The most effective technology interaction and support begins with understanding the business process and the business need. Touching on areas such as business analysis, organizational change management, and workflow this initiative will look at procedures both internal to IT as well as the external business entities.



2.5 ENTERPRISE ARCHITECTURE

Addressing the need for planning in regards to architecture, data, applications, and interoperability; this initiative is about creating a coherent approach to the structure of technology in the County that considers all aspects of technology solutions. What are the needs now and in the future, what steps are needed to get there, what changes are suggested in structure, resources, hardware, data handling capabilities, and how do we incorporate the best of technology to suit our needs

Below are several actionable initiatives subordinate to Enterprise Architecture on which focus is expected over the next 18 months.



Architectural Standardization and Interoperability – This initiative is about ensuring that our approach to architecture allows for ease of communication, data transfer and interoperability throughout the County, within the region and the state, and with the residents of the County.

Technology Renewal Update applications and data in general by assessing, planning, and acting. Replace in specific instances as needed or planned. One major commitment under technology renewal is the Enterprise System Replacement initiative and moving to an ERP package. Investigate and fully exploit developing technology such as mobile computing/mobile apps, cloud computing, and remote/virtual desktop. Examine the effect that changes would have on long term plans for computing platforms.

Asset Management – A continuing focus on basic productivity tools supported by hardware that meets the individuals needs is paramount. With a focus on equipment acquisition, ordering, and refresh, along with a managing and maintaining software license compliance, Asset Management becomes a base for much of what technology can accomplish.

Infrastructure Transformation – This includes examining hardware infrastructure for suitability now and in the future, considering where we need to be in the future and what steps are needed now to allow us to get there. Details might include Telecomm, network, voice and I-Net upgrades. It would also include hardware (i.e., servers, switches), as well as areas such as wireless computing and voice over Internet protocol (VOIP). Other aspects of infrastructure transformation will include areas such as Green computing, which is an environmentally friendly and cost effective approach to technology, and Unified Communications which has to do with carrying digital information on a unified infrastructure.



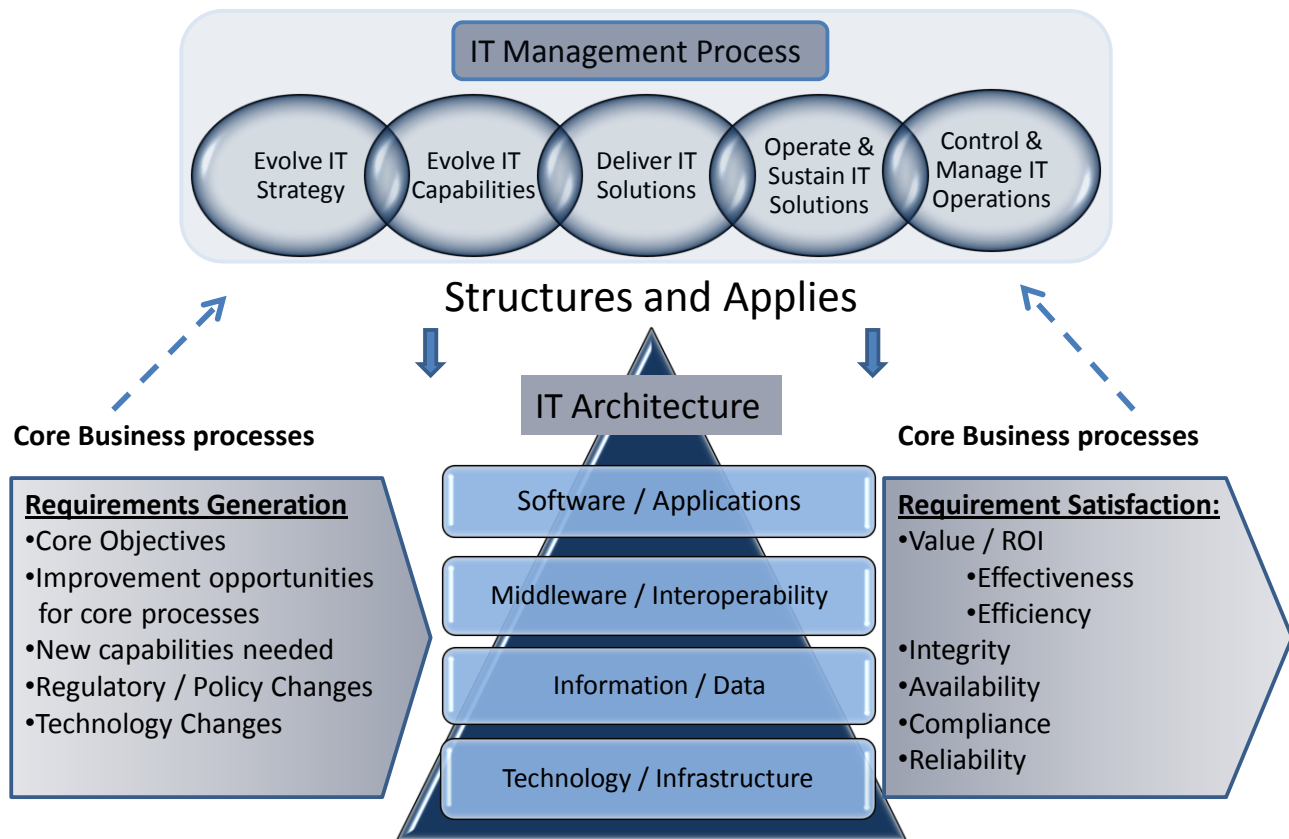
3 MANAGEMENT MODELS

3.1 ENTERPRISE IT OPERATING MODEL

3.1.1 Overview of the IT Operating Model

Information Technology (IT) is a critical component of the Enterprise Business Architecture. IT is defined for the purposes of this document to include software applications, information, interoperability mechanisms, and technology infrastructure as well as the processes, people and knowledge required to manage them.

The IT Operating Model is a big-picture view of how the County will manage Information Technology. Its primary elements are a high-level IT Management Process model, a high-level Enterprise IT Architecture model, and the relationship between these and the core service processes of the County. This high-level model serves as a holistic framework within which we can define inter-related aspects of strategically managing IT, such as the IT governance model, organization, processes (and other mechanisms necessary to execute the strategy as well as to continuously adapt it, and develop the capabilities to build and run that architecture as it evolves).



A business-aligned IT Management Process structures and applies IT resources in a way that best satisfies strategic and core process requirements.



3.1.2 Strategic IT Management Process

Information technology (IT) executives are seeking to strategically align IT investments with enterprise objectives, improve services and create new ones, insert emerging technologies, control costs, and secure information--all in dynamic business and technology environments. In addition, they interact with business leaders in a matrixed or indirect fashion and must overcome complex barriers to change. To deliver real business value, IT must be both strategically and operationally aligned with business.

An effectively IT-enabled enterprise must be able to:

- 1. Evolve IT Strategy (provide current IT vision, direction, and an adaptive framework for execution and control)**
- 2. Evolve IT Capabilities (proactively develop the capabilities to implement the strategy)**
- 3. Deliver IT Solutions (build, test, integrate, implement, and adapt IT solutions)**
- 4. Operate & Sustain IT Solutions (run and support systems and infrastructure)**
- 5. Control & Manage IT Operations (control execution of the overall IT management process)**

3.1.2.1 Evolve IT strategy

The elements involved in evolving IT strategy are:

- Collaboratively define and clearly communicate IT strategy--continuously aligned with the changing mission, vision, objectives, and business strategy of the enterprise
- Design an IT governance model that properly allocates authority and accountability for IT-related decision-making and its results
- Define and communicate IT principles, patterns, and standards that guide efficient execution of the IT strategy
- Design a unifying, adaptive, and efficient enterprise IT architecture (i.e., breaks down business unit silos and identifies common IT services and applications)
- Dynamically define realistic master plans and budgets that optimize use of enterprise IT resources over time in light of capital planning requirements and known constraints



3.1.2.2 Evolve IT capabilities

The elements involved in evolving IT capabilities are:

- Identify the IT capabilities the organization will need in the future and when they will be needed (including maturity levels)
- Strategically source IT capabilities (whether internally or externally)
- Establish and continuously improve program management capability (for initial solution delivery and major enhancements)
- Establish and continuously improve product management capability (for life-cycle management of established solutions)
- Establish and continuously improve technical capabilities (e.g., architecture, software engineering, network engineering, testing, configuration management)
- Establish and continuously improve operations and support capabilities (e.g., data center operations, service desk, technical change management, collection of metrics)

3.1.2.3 Deliver IT Solutions

The elements involved in delivering IT solutions are:

- Collaboratively define and manage IT programs (maximize business value and return on investment, and align with IT/business strategy, principles, patterns, and enterprise architecture)
- Operationally source IT services and products (whether internally or externally)
- Execute large projects to construct, integrate, and implement high-quality solutions with minimum risk, time, and cost
- Execute small projects to enhance or upgrade established solutions with minimum risk, time, and cost



3.1.2.4 Operate & Sustain IT Solutions

The elements involved in operating and sustaining IT solutions are:

- Operate solutions to required service levels
- Provide support to end-users, operators, and developers
- Maintain solutions to correct minor defects, tune performance, and effect minor enhancements
- Provide a consolidated system, network, security and services management
- Measure service levels (e.g., availability, responsiveness, transaction volume, errors)
- Retire solutions for which the business case is no longer valid

3.1.2.5 Control & Manage IT Operations

The elements involved in controlling and managing IT operations are:

- Define, implement, and continuously improve an integrated set of IT management processes and performance measures
- Identify IT process performance exceptions and trends; initiate operational correction (e.g., allocation of contingency funds), or strategic adaptation (adjustment of strategy or capabilities)
- Define and enforce service level agreements; service level monitoring, reporting and managing exceptions.
- Collect cost data, monitor budgetary performance, and allocate costs
- Identify cost saving opportunities wherever and whenever possible
- Respond to external forces; reflexively adapt IT strategy, capabilities, and plans to changing customer needs, supplier pricing, technology trends, policies, regulations, and laws
- Measure and communicate the business value of the enterprise's collective investments in IT



3.1.3 Critical Success Factors and Key Performance Indicators

3.1.3.1 Executive Management Engagement

Engagement of executive management is the first key in any endeavor that seeks to realign, refocus, and transform how a major function is accomplished. This refers not only to the backing of the Office of the County Executive, but additionally the Executives or Directors of the various Agencies and Branches of government. Without that backing, cooperation, and collaboration, the concepts and proposals in this document cannot be realized. Engagement is not only support for the concepts as outlined, but also participation in the governance process. This also creates the expectation of mechanisms that create sufficient visibility into areas such as progress and results versus goals and objectives.

Visibility then, is about a process that is well defined and transparent. Progress and issues rolled up to a summary level for executive management with the capability of reporting greater detail as needed. It is about creating processes that support the creativity of, and recognize the time pressures on, executive management. In simple terms; creating processes that maximize decision-making effectiveness of strategic level management while minimizing their time requirements, and accomplishing this in a way that is both logical and open.

3.1.3.2 Process and Performance Measurement

One of the ways in which any undertaking can be evaluated is through process or performance measurement. A key factor in the success of the technology strategy plan is the capacity to demonstrate the effectiveness of the initiatives undertaken during the execution of the plan. In order to demonstrate success, metrics (measures) need to be created that allow the organization to objectively ascertain a current level of performance and demonstrate progress when the metrics are repeated after an organizational intervention (i.e., process, policy, technology).

One of the many applications of performance measurement is the Charter for Change (CFC) 2.0 and the County budget process whereby Agencies are required to develop performance measures tied to their budget initiatives to allow for monitoring and evaluation of effectiveness among other things.

Such measures need to be developed on a broader scale both for process and organizational improvement as well as being used as success criteria for a particular project or initiative.



3.1.4 Implementation – Practical Considerations

Moving to an Enterprise IT model for technology operations will require time to accomplish -all the while delivering services and solutions needed by the budget entities to support their missions. Some of these considerations include:

Planning – This document contains an overview of changes suggested in the areas of technology governance and the functional structure of OITC with a few specifics. There needs to be continued planning to further delineate roles, clarify details of changes, and more fully develop the roadmap by which these changes can be accomplished. While the strategic initiatives list specific areas of focus, more detailed planning to accomplish these initiatives needs to be carried out as well as continuous planning to ensure that the strategic goals and initiatives are consistently in-line with County direction.

Resources – Along with planning and time, it will take a re-alignment of current resources to some extent. There will also be continuing evaluation to indicate when and where more or different resources may be needed to accomplish objectives.

Time – It is envisioned that it will take as long as three years to fully align technology governance with the model described in this plan. It is envisioned that changes will be made incrementally and continuously over time to achieve the Enterprise IT management structure. Where incremental change is not possible, re-engineering will be planned and scheduled.



3.2 IT GOVERNANCE MODEL

3.2.1 What is Governance?

The concept of IT Governance has its roots in general or Corporate Governance. Through Corporate Governance, enterprises align the activities of their component parts to achieve enterprise objectives. In simple terms, it’s good if everybody is pulling hard on his or her rope – but it’s much better if they’re all pulling in the same direction.

Large enterprises organize their core, value-generating operations into units focused on particular products, markets, regions, or other areas of specialization. In the case of County government these units or business units include HR, Public Works, Finance, and so on.

Various administrative and support functions, while often consolidated across multiple business units, still require specialized management. The result is multi-echelon and multi-dimensional management structures.

Over time, industry has learned that the benefits of specialization (customer-responsiveness, innovation, operational agility) are gained at the cost of variation across business units. This variation results in sub-optimization from the enterprise perspective in several ways, including:

Benefits of Decentralization	Costs of Decentralization
Responsiveness to Customer Needs	Cultural and technical barriers to integration (“stove-pipes”)
Innovation	Loss of economy of scale
Improved Operational Agility	Degraded strategic agility (difficulty aggregating management information and changing enterprise direction)

Effective corporate governance is the creation of mechanisms to balance these forces, allowing the enterprise to reap the benefits of both collective optimization and specialization. It is largely an issue of effective process/organization design, with special attention paid to the issue of centralization/decentralization. Other mechanisms may take the form of performance measurement frameworks aimed at collective optimization or formalization of enterprise-level decision-making processes.

Similarly, government organizations organize their core, value-generating operations by class of service, by type of operation, by region, and other dimensions. Government organizations, however, have an extreme challenge. While they are among the largest and most complex of enterprises, they have a great need for operational agility, and adaptability. A democratically elected government administration may have only it’s four or eight years to achieve results, and then the strategic direction of the enterprise may change dramatically.



3.2.2 The Information Technology Governance Challenge

The foundation for this strategy clearly pointed out that the County will benefit greatly from a more strategic, collaborative, and integrated model of IT Management. For the purposes of this dialog, "business" is defined as the core, value-generating functions of the County government (those functions that create value for citizens). "IT Community" refers to the County's central IT organization, the Office of Information Technology and Communications (OITC) as well as other functions and roles external to OITC that would be expected to participate in the Strategic IT Management Process (i.e., e.g., executives and IT decision-makers within budget entities). This Governance Model aspect of the IT vision can be summarized as the "Enterprise IT Management" concept, fundamentally comprised of the following tenets:

- The role of IT is to enable business success and improvement through efficient and effective use of information and related technologies.
- The IT community will be organized to support the strategic direction of the County.
- Where synergy exists, functions will be collaboratively managed Countywide, rather than within individual budget entities.
- The IT community will promote County-wide solutions vs. entity/department specific solutions.
- The IT Community will adopt common adaptive processes.

The important changes that this model represents are summarized as follows:

- Elevation of Customer Relationships to the Strategic Level
- Introduction of Collaborative Mechanisms
- Effective Federation (centralization vs. de-centralization)
- Introduction of new Strategic and Enterprise-Level Roles
- Shift from a Product-Centric Model to a Process-Centric Model
- Introduction of a Supply-Demand Dynamic

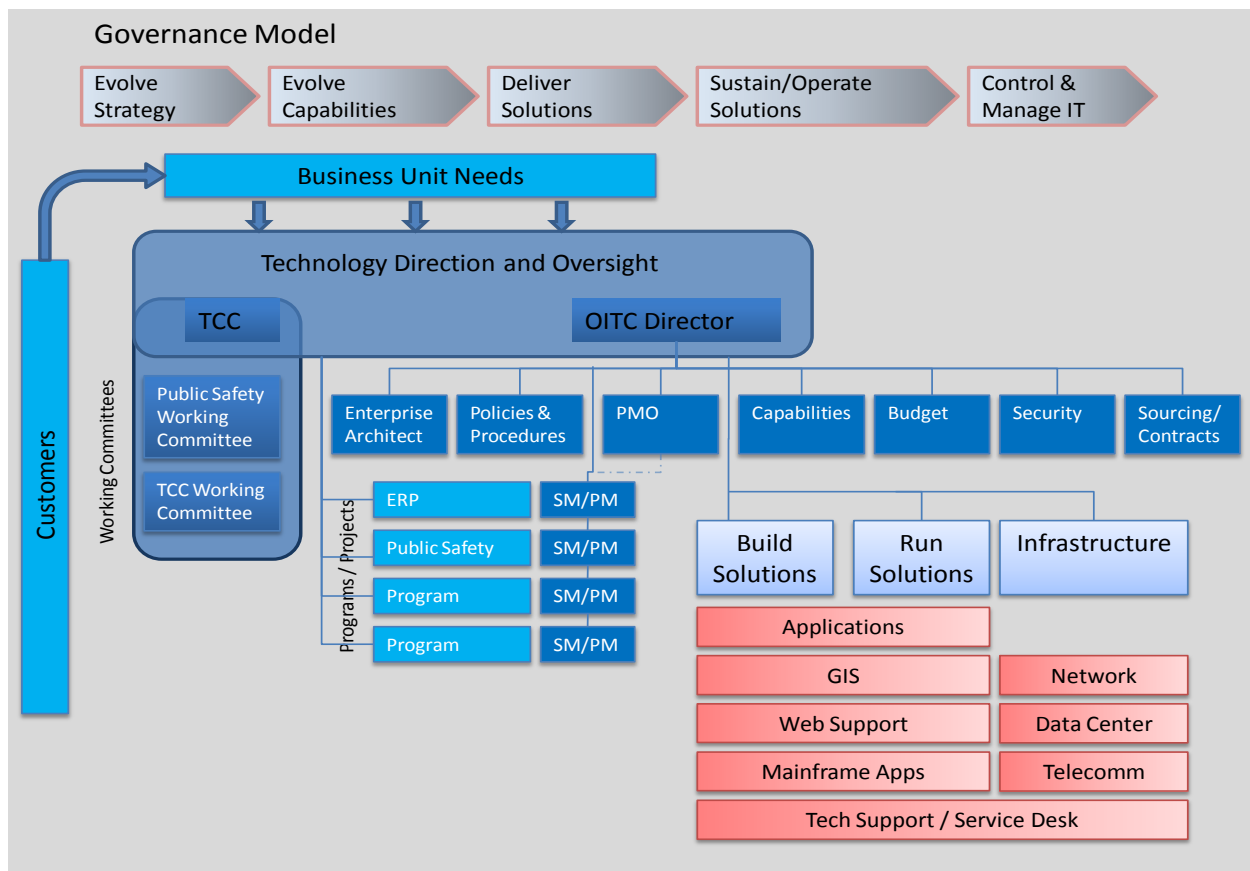


3.2.3 Overview of the IT Governance Model

The Governance Model represents a conceptual, and to some extent notional, representation of how a governance structure may be designed. Having said that, the IT Governance model itself has several features.

First, the Strategic IT Management Process is repeated at the top as a reference. While many of the roles in the model are involved in several or all of the process, the model lays the roles out graphically from left to right to reflect their participation in the process. For example, customers participate in program partnerships, are focused on articulating the need, marshalling resources, launching programs, and measuring business results – hence they are represented at the input side of the model (the left). The core IT functions of building and running (delivering and sustaining/operating) solutions are shown on the right side. The notional OITC staff functions (relating to administration and planning) shown are shown in the center.

Second, the model is a matrix. On the top of the matrix is the process, and moving down the matrix are the programs. The entire process applies to each program, but each program is somewhat different in the business benefits it seeks, the area it impacts, the technologies it uses, or the resources required to deliver it. A “program” may consist of several projects (delivery of new or enhanced systems) and/or products (systems being sustained/operated). In this model, OITC becomes a process-centric organization.





3.2.4 Elevation of Customer Relationships to the Strategic Level

OITC currently maintains customer relationships primarily through a role called "Solutions Manager". Each agency or other budget entity is assigned one Solutions Manager (or SM), who serves as a single point of contact for all matters pertaining to OITC. Additionally, each agency or other budget entity has a central point of contact within their organization called an "IT Coordinator".

The new IT Governance Model proposes enlarging that role into one that works with the business unit to identify strategic IT programs. This individual would help with clarifying business needs and goals and developing an effective business case.

While it has been useful for each Agency or other budget entity to have an individual customer relationship with OITC, it is strategically important for the County to begin to recognize that many of its IT needs are shared across multiple budget entities. This is the reason for the introduction of the IT Program concept as a central mechanism in terms of planning, budgeting, and the realization of business benefits. Common areas of need will be organized into IT Programs. Examples might be E-Business, Public Safety, or ERP. These notional examples demonstrate areas within which data might be shared across budget entities or where a single system or technology might cost-effectively serve the needs of multiple customers. Programs might also be established for specific needs as they pertain to the Legislative or Judicial Branch.

3.2.5 Introduction of Collaborative Mechanisms

The strategic planning process engaged many of the budget entities in surveys, interviews, and executive-level meetings. This was the beginning of what is hoped will be a new culture of collaboration and partnership.

This governance model also introduces mechanisms to maintain and improve that relationship on an ongoing basis. Going forward, OITC and the County's budget entities will foster a partnership relationship oriented at getting as much value as possible for the County's IT dollars. This means collaborating across business and technical lines, and across organizational boundaries between budget entities.

One example of such a collaborative mechanism is the "Working Group" or "Working Committee". These can be sub-committees of the TCC that meet more frequently to discuss and make decisions regarding a particular IT Program.

They may also be project or program specific groups organized for similar purposes. Budget entities may participate in multiple Working Groups and may send different individuals to each. This is consistent with the good practice of giving business process owners authority over IT solutions (as it relates to software applications and data).

Additionally, OITC staff is at the disposal of the working groups on a day-to-day basis and will be regular participants as appropriate in the working group meetings. For example, when questions of architecture arise, the Enterprise Architecture Team will participate. Or, when questions of future IT capabilities or competency needs arise, the Strategy Team will participate. As a further example, when the IT budget considerations are being formulated or if a major adjustment is called for, the appropriate OITC people will collaborate with the budget entity to plan for expenses.



3.2.6 Effective Federation

One important aspect of an IT Governance model is the degree of centralization or decentralization of IT management. Determining this is what is referred to as "effective federation". Depending on the size and complexity of the entity an IT organization supports, the ideal model of governance differs. Three general governance models exist:

- Centralized governance describes top-down management of IT, in which IT decisions for all parts of the business are predominately made at enterprise level.
- Decentralized governance describes bottoms-up management of IT, in which each part of the business is largely autonomous in terms of IT decision-making.
- Federated governance describes an overall balance between centralization and decentralization.

In reality, very few enterprises can operate with completely centralized or decentralized governance; these models serve primarily as a frame of reference. Almost all complex enterprises use some form of federation. The most widely recognized forms of federation are relatively simple models created by industry analysts to demonstrate the concept. Two such examples include "Departmental" or "Regional" federation, each of which align IT management with a single dimension of corporate governance (organization and geography). Furthermore, most models simplify "IT" as a monolithic resource that can be managed effectively at one level. In reality, the most effective form of federation often includes management of different classes of IT resource at different levels (e.g., infrastructure at a higher level than applications).

Furthermore, it may be most effective to centralize some IT processes and decentralize others (e.g., planning & organizing at higher levels than delivery & sustaining). The exact nature of effectively federated IT Governance is different for every enterprise. Application of a simple model to a large and complex enterprise like an urban County Government is likely to forgo the benefits of both extremes. Prince George's County requires a specific adaptation of the federated model, which has been developed from the following principles:



General Principles for Effective Federation

Align with Enterprise Governance	Establish IT Management cells for core processes, core capabilities, and center of investment and authority/accountability (make management accountable for return on IT investment)
Align with the IT Process	Centralize the Planning/Organizing, Monitoring Decentralize Acquisition/Implementation, Delivery (Operation)/Support
Centralize the Shared	IT Infrastructure "Products" (same everywhere – network, servers, training, e-mail, service desk, procurement, asset management) Interoperability Framework <ul style="list-style-type: none"> o Common Architectural Framework o Interoperability Standards and Services
Decentralize the mission-specific to the level of the mission	Applications Architecture orchestrated centrally but controlled by the owners of business processes and core services Portfolio Management for each value-generating dimension of enterprise governance (each core process, capability, mission)
Enable end-user productivity and innovation	End-user computing toolset should include tools and pre-built standards compliant frameworks for small and prototype application development (e.g. web sites, workflow)





3.2.7 Introduction of Proposed Strategic and Enterprise-level Roles

This direction suggests roles that did not previously exist or were underutilized. Proposed roles (described in depth below) include the TCC Working Committee and others. In summary, these roles provide formal execution of strategic and enterprise-level IT management activities previously not organized at an enterprise level.

3.2.8 Shift from a Product-Centric Model to a Process-Centric Model

As noted above, a central element of both the IT Operations Model and the IT Governance model is the Enterprise IT Management concept. This provides a broader framework of activities and roles than previously acknowledged. While the OITC roles represented are notional (detailed IT process and organizational design based on this strategy is a follow-on activity to be conducted during FY11) they show that management will be organized more around activities (processes, like software development or operations & maintenance) and less around systems (products or technologies, such as web-based systems vs. mainframe applications). This process-centricity provides for repeatability, learning, continuous improvement, measurement, aggregation of management information across systems/products, and control.

3.2.9 Introduction of a Supply-Demand Dynamic

The approach described above puts OITC in the business of supplying solutions demanded by our customers through the working group/program partnership concept. Because these initiatives are explicitly represented as programs with assigned managers within OITC, the supply-demand dynamic moves in-house and becomes a constructive source of creative tension. Project Managers and Solutions Managers will be focused on achievement of the desired business benefits within the planned investment. Other OITC managers will be focused on executing repeatable processes efficiently. This separation of sometimes competing needs will clarify roles and ultimately produce increased efficiency and effectiveness.

3.2.10 Description of Enterprise IT Management Roles

The roles as described below are in some cases notional and represent areas or concepts to be addressed. As such any of the roles are subject to refinement, realignment, or even elimination as the detailed process and organizational design based on this strategy plan take place in FY11.

However the names of the roles might change, there is every intention to incorporate the concepts as the organization moves forward.



3.2.10.1 Enterprise IT Management Roles

TCC – Technology Coordinating Committee. This group would include senior management from all the executive agencies, the judicial branch and the Legislative branch. Their function is envisioned as setting direction, monitoring Line Of Business (LOB) and program arcs, approval of major adaptations, and making budget recommendations.

Working Committee – Effectively sub-committees of the TCC, this refers to working groups of people from the various budget entities brought together, either temporarily or permanently, to pursue common interests and solutions. An example might be the entities interested in a specific issues (i.e., document management) working with a Program Manager to identify an enterprise solution. A more permanent working group might be involved with Public Safety or the concerns of the Legislative branch.

TCC Working Committee – As a selected superset of the TCC this group would do initial evaluation and prioritization of projects and help set the TCC agenda.

Public Safety Working Committee – A standing working committee (subcommittee) of the TCC that focuses on the needs of, and enterprise solutions for, Public Safety.

Solutions Managers – Liaisons to the business units from IT with a focus on identifying needs, helping build the business case, and developing relationships with the business units. They would function as business analysts and may manage a specific Program.

Program/Project Managers - These positions will require project management skills and will also require some business analysis skills. Their purpose would be to help build the business case and manage specific programs or projects, sometimes in connection to a Working Committee.

Program Management Office (PMO) – The PMO would be involved with project support and project management process. In addition, it would coordinate the Solutions Managers. The office would also facilitate portfolio management activities such as prioritization, project monitoring, and reporting with the TCC.

Policies & Procedures – This would be a role involved with, and ultimately responsible for, all policies and procedures for OITC.

Strategic IT Planning – This role will be to continue evolving strategy.

Enterprise Architecture – This role would address the issues of applications, data, infrastructure, and interoperability architecture for technology at an enterprise level—setting direction and helping to define needs.

IT Security – A role whose primary focus would be on Business Continuity and Disaster Recovery planning. In addition this office would have involvement with network services and the mainframe data center in system security.

IT Sourcing & Contract Management – This role would be concerned with how we source resource needs whether people, software, or equipment. It would also be concerned with the process of sourcing.



3.2.11 Implementation – Practical Considerations

Detailed IT process and organizational design are required prior to implementation. Change management will be required to facilitate adoption of new roles. While it might be ideal to put all changes in place immediately, a more realistic understanding of the various issues involved lends support to a transitional approach. A partial list of practical issues to be addressed includes:

- More fully defining governance details
- Defining subcommittee/entity relations
- Enlisting the support of strategic level positions around the County
- Fully defining the functional organization
- Defining the relevant processes
- Organizational change that creates retention and morale problems
- Maintaining day-to-day operations
- Determining time to accomplish changes
- Generating and maintaining momentum for change
- Communicating effectively

The above reinforces the need for ongoing planning in the implementation of a strategy plan.



4 ARCHITECTURAL DIRECTION

4.1 OVERVIEW OF ARCHITECTURAL DIRECTION

Architecture is the skeleton that supports the structure of technology for the County. From details of infrastructure, which can encompass servers, communication lines, switches, storage devices, and bandwidth to the applications that present, manipulate, and store data there is no support for technology without an appropriate architecture. In developing an architectural direction, several questions must be answered, namely: What comprises the architecture, what is the general direction, why move in that direction, and how will Prince George's County get there?

4.1.1 What Comprises the Architecture?

The Technology Strategy Plan considers architecture as three areas:

- Applications architecture, which is concerned with determining functional, productive, and easy to maintain applications that facilitate integration, reusability, and appropriate standardization
- Data architecture, which is concerned with developing an approach to data design, storage, and accessibility that as above promotes integration, reusability, and appropriate standardization.
- Infrastructure architecture, which is about designing an infrastructure that supports the enormous amount of users and applications in a manner that allows for controlled growth, low maintenance, and high performance.

Applications and data are grouped together going forward because database design, data sharing and integration issues are under the applications realm at Prince George's County.



4.1.2 What is the General Direction?

The general architectural direction envisioned for Prince George's County contains the following basic principles:

- Centralized Data – Managed as a corporate asset, with intelligent design.
- Integrated Applications – Supporting centralized data, eliminating constructed interfaces between dissimilar products, economies of scale and acquisition costs, and limiting data redundancy.
- Platform Independent Development – Useable across open systems, web, and mainframe platforms to the maximum extent possible.
- Speed and Bandwidth – To accommodate the increasing information, graphic, and software loads that support the County's mission.
- Consolidation – Using less equipment and better utilization where possible. Consolidation of switches, hubs, routers, control units, and servers; yet appropriate redundancy.
- Wireless and Fiber Optics – For the backbone of the network. Fast, mobile, with designed in failover and backup systems.

4.1.3 Why Move in That Direction?

The increasing focus on E-Business, web based apps, graphic content, and the Geographic Information System (GIS) requires fast and sure telecommunications.

- The multiple current, and possibly future, platforms in the IT environment require platform independent software.
- Data must be accessible and manageable; it must flow easily across different platforms. This requires adherence to best practice design concepts and standard data transfer protocols.
- Intelligent consolidation reduces maintenance costs; lowers physical plant costs, and actually increases the ability to respond to new requirements for support.

4.1.4 How Will We Get There?

The keys to getting there are: determining a plan, incorporating the appropriate oversight, moving forward in measured steps, and maintaining a focus on both future needs and evolving technology.



4.2 ENTERPRISE APPLICATIONS AND DATA ARCHITECTURES

Deliveries of software solutions and data manipulation capabilities are often highly visible areas of technology and frequently the elements that show the value and the promise of technology. This being said, it is critical that these areas are managed in such a way that the enterprise gets the best results and least residual issues from their development and implementation. Listed below is the target state for the enterprise applications and data architecture.

- Well managed Applications and Data at an Enterprise Level – It is important that the organization move from vertical orientation (mainframe, client server, and web applications) to an organization that proactively manages software development at an enterprise level. Overall planning and management of data structure, design, and storage is planned for and managed from an enterprise perspective. Data sharing and re-use need to become a standard part of both short and long term planning.
- System Interoperability – Making use of the various platforms in the County (mainframe, servers) requires structures that allow for interoperability between the platforms and the various databases extant, while continuing planning for long-term consolidation and direction.
- Limited Redundant Data – Both a long-term and short-term issue, the County is looking for one time entry of data and the capability to verify and share that data as appropriate. This requires enterprise level involvement in data architecture.
- Standards and Policies – A balance between structure that promotes quality work and allows for creativity needs to be obtained and maintained. At the enterprise level there needs to be process that is repeatable, measurable and improvable.
- Data Stewards at Budget Entity and Branch Level – As important as centralized management of data structures and data sharing is the management of the actual data by those parties who are most familiar with it. The integration of data stewards at the budget entity level and data management at the enterprise level will produce the best result for the County.
- Metadata – This refers to data about the data. A goal is to better investigate distilling information from data that the County already has for productive purposes.
- Control Budget Entity Development – A collaborative partnership with the business units needs to be maintained that minimizes non-standard applications or database structures, yet provides support for appropriate use of office automation toolsets.
- Staff Cross Training to Enable Skill Set Backups – While reflective of other elements such as common development languages and consistent standards, this also addresses specifically the need to avoid vertical structures and constructs where knowledge and or capabilities rest with only one individual.
- Quality Assurance and Testing Methodologies – Enhanced training efforts and management support are needed in these areas. Metrics and feedback mechanisms are also significant agenda items for further advancing Quality Assurance and Quality Control.



4.3 ENTERPRISE TECHNOLOGY INFRASTRUCTURE

Although the technology infrastructure is and must be continuously improved to achieve and maintain an effective architecture, significant upgrades are underway that reflect current and future needs. A robust and modern infrastructure is being built to support the demands expected on the system as technology provides support for more government activities. This would include:

- Continuing increase in E-Business initiatives and Web based processing.
- Continuing increase in graphic content and GIS applications.
- Necessity for business continuity, even under extreme circumstances.
- Increased usage of an Intranet to support process and documentation.
- Development of a true entry portal for Prince Georges County Government.

The table below provides a look at current versus envisioned future state of the enterprise technology infrastructure.

Current State	Future State
<p>Backup Recovery –</p> <ul style="list-style-type: none"> • Tape Storage utilizing Veritas Backup Exec and LTO 3 tape drives located at the Disaster Recovery Site. • Utilizing De-Duping and compression software to maximize disk to disk storage. Tapes are moved to the remote facility weekly. 	<p>Backup Recovery –</p> <ul style="list-style-type: none"> • Improve backup window by implementing disk deduplicating compression appliances.
<p>Servers –</p> <ul style="list-style-type: none"> • Utilizing Gig NIC's, ISCSI and Fiber Channel Disk Drives. • Utilizing VMWare virtualization. • Blade servers and standalone server. 	<p>Servers –</p> <ul style="list-style-type: none"> • Continue to port mainframe applications into the Intel infrastructure. • Procure 5-year maintenance with new server purchases. • Consolidate to ISCSI disk solutions



Current State	Future State
<p>Wiring and cable –</p> <ul style="list-style-type: none"> • Gig fiber backbone to major campus sites and 30 + frame Relay sites. • GIG/POE to the desktop throughout major County buildings. • Gig speed to the desktop. • Utilizing Power over Ethernet (POE) when deploying new access points, phones, etc. • Deployed UPS to all data closets to protect network infrastructure investment. 	<p>Wiring and cable –</p> <ul style="list-style-type: none"> • Build Failover capabilities into existing Fiber infrastructure. • Cleanup, utilize cable management strategies and insure CAT 5e or 6 cabling to all devices. • Utilize fiber to data closets from the buildings MDF. Provide 2 Gig uplinks when feasible. • 10 Gig between campus buildings.
<p>Centralized Active Directory with 3 PDC/BDC</p>	<p>Continue and expand Active Directory (AD) usage</p>
<p>Network Security –</p> <ul style="list-style-type: none"> • Enterprise Security utilizing AD authentication, CISCO Security tools, websense and VPN. 	<p>Network Security –</p> <ul style="list-style-type: none"> • Deploy data leakage tools.
<p>Enterprise wide Email system –</p> <ul style="list-style-type: none"> • Exchange 2007 • Enterprise Vault 	<p>Enterprise wide Email system –</p> <ul style="list-style-type: none"> • Exchange 2010 • Enterprise Vault
<p>Web support –</p> <ul style="list-style-type: none"> • Centralized DMZ for enterprise wide Web servers. 	<p>Web support –</p> <ul style="list-style-type: none"> • Develop fail over and recovery for enterprise wide Web serves.



4.4 ARCHITECTURAL STANDARDS

4.4.1 Technology Platform

Technology Standards Prince George's County IT Standards

Desktop, Laptop	
Operating System	Windows XP
Desktop Applications	
Word Processor	MS Word
Spreadsheet	MS Excel
Presentation	MS PowerPoint
Database	MS Access
E-Mail Client	MS Outlook
Project Management	Microsoft Office Enterprise Project Management
Graphics	Acrobat Adobe, MS Visio
Specialty Applications	
Web Browser	Internet Explorer
Antivirus	McAfee
Mainframe 3270 Emulation Software	TN3270E-compliant software (DYNACOMM, Hummingbird, etc.); browser Active Client (for Infor)
GIS	ArcGIS ArcInfo 9.3.1 ArcGIS Arcview 9.3.1 ArcGIS ArcSDE 9.3.1 ArcGIS Server 9.3.1 ArcGIS ArcIMS 9.3.1 Oracle 10g
Servers	
Operating System	Microsoft 2003
Thin Client Access	Citrix
Hardware	HP and Dell
Backup	Veritas
Storage	StorageTek SL500 – LTO 3, EMC 8830 Storage Array, StorageTek 240, NETAPP
E-Mail	Exchange 2007
Web Application Servers	IIS
Database	Oracle, Microsoft SQL
Communications Protocol	TCP/IP; SNA



Platform Architecture Standards: End User Hardware

Component	Desktops	Laptops
CPU	Intel Core 2 Duo E6550/2.3 GHz, 4M, VT 1333FSB	Intel Core 2 Duo T7300 (2.00GHz), two factor authorization
Disk Configuration	80 GB Hard Drive 16X DVD+/- Drive	60 GB Hard Drive 24X CDRW/DVD Combo Drive
RAM	2GB	2GB
Monitor	17" Flat Panel Monitor	14.1" WXGA LCD
Interface Card(s)	Dell Wireless 1450, WLAN USB 2.0 DT Adapter	Intel PRO/Wireless 3945 WLAN (802.11a/g) mini Card
Operating System	Windows XP	Windows XP
Maintenance	3 Year On-Site, Next Business Day	3 Year On-Site, Next Business Day
Additional Hardware Requirements	Speakers UL Approved Surge Protector	Speakers UL Approved Surge Protector Docking Station and Peripherals (if used as desktop)
Mainframe 3270 Emulation	TN3270E-compliant software (DYNACOMM, Hummingbird, etc.); browser	TN3270E-compliant software (DYNACOMM, Hummingbird, etc.); browser
Third Party Software	McAfee VirusScan Enterprise Microsoft Internet Explorer Microsoft Office Suite Microsoft Outlook ePolicy Orchestrator	McAfee VirusScan Enterprise Microsoft Internet Explorer Microsoft Office Suite Microsoft Outlook ePolicy Orchestrator
Pre-Install Options	All components (hardware) installed	All components (hardware) installed
Current Provider	Dell	Dell
Optional (as required for business needs)	Headphones Additional Memory Additional Hard Drive	Headphones Additional Memory Additional Hard Drive



Platform Architecture Standards: File/Print/Web Services

Component	File/Print Servers	Web Servers
Type	HP BLc7000	HP BLc7000
Power	Dual Power	Dual Power
Fault Tolerance / Disk Configuration	RAID5	RAID5
CPU	Intel Quad-Core 2.93 GHz	Intel Quad-Core 2.93 GHz
Network Interface Cards	HP GIG	HP GIG
Operating System(s)	2000 and 2003	2003
Monitor	Raritan Switch	Raritan Switch
RAM	16 Gig	116 Gig
File Systems	NTFS	NTFS
Current Provider	HP, Dell	HP, Dell
Maintenance	3 year 4 hour response	3 year 4 hour response
Additional Hardware Requirements	Raritan Connector	Raritan Connector
Storage and Backup Hardware/Software	Veritas – StorageTek SL500	Veritas – StorageTek SL500





Platform Architecture Standards: Database/Applications

Component	Mainframe	Client Server / Web Development	Internet/Intranet
Database Software	Datacomm/DB, VSAM	SQL Server 2005 Oracle 10G	SQL Server (Latest version), Access
Application Software	COBOL, IBM Assembler, SAS	.NET Framework, Index Server	.NET Framework 3.5, Microsoft SharePoint Services (WSS3.0), SharePoint Microsoft Office SharePoint Server 2007(MOSS 2007)
Software / Development Tools	COBOL, CICS, TSO, JCL	Visual Studio .NET (VB.Net/ASP.NET), Crystal Reports, TOAD	Visual Studio 2005, CS4 Web Design (Acrobat, Premiere, Photoshop, Illustrator, Fireworks, Flash, Dreamweaver), SharePoint Designer 2007
Security Software	Top Secret	NTFS / Active Directory	NTFS / Active Directory, MS IIS
Application Integration	Infor, Connector Foundation	tcAccess	.ASP, XML, HTML, Java 2.0, ASPx, Perl, JavaScript, VBScript, ASP.NET
Scheduler	ZEKE Scheduler	Scheduler service	Subversion,
Ad Hoc Report Tools	SAS, Easytrieve, IDEAL	Crystal Reports	WebTrends Analysis Series 8.0, Google Analytics
Workstation Requirements	TN3270E-compliant, or Active Client (for Infor) for 3270 emulation	Windows 2000 professional or newer Browser (Internet Explorer preferred)	OS:XP or newer Browsers: (Internet Explorer 7,8, Mozilla Firefox 3.5.6), MS Office Suite (2003 or newer); 4GB memory or higher



Database & Application Architecture Standards: Servers

Component	Database Servers	Application Servers
Type	HP BL460c	HP BL460c
Power	Dual Power	Dual Power
Fault Tolerance / Disk Configuration	RAID 5	RAID 5
CPU	G4	G4
Network Interface Cards	Teamed GIG	Teamed GIG
Operating System(s)	2003	2003
Monitor	Raritan Switch	Raritan Switch
RAM	4 Gig	4 Gig
File Systems	NTFS	NTFS
Third Party Software Requirements	N/A	N/A
Preferred Manufacturer	HP	HP
Maintenance	3 year 7x24 - 4 hour	3 year 7x24 4 hour
Additional Hardware Requirements	N/A	N/A
Storage and Backup Hardware/Software	Veritas – StorageTek L80	Veritas – StorageTek L80



Data Communication Standards

Network Protocols

Current

TCP/IP
SNA

Future

TCP/IP
SNA

Cabling Standards

A) Horizontal (cabling and pathways)

Current

Fiber

Future

Fiber

B) Outlets

Current

Cat 5e, Cat 6

Future

Cat 5e, Cat 6

C) Between Buildings / Backbone

Current

Fiber

Future

Fiber



APPENDICES

- 1. DOCUMENT ACRONYM DEFINITION LIST**
- 2. LIST OF ENABLING TECHNOLOGIES**
- 3. OITC ORGANIZATION CHART**





DOCUMENT ACRONYM DEFINITION LIST

Acronym	Title, Subject, or Phrase Usage	Reference Base
ABS	Automatic (or Automated) Booking System	Industry
ACH	Automated Clearing House	Industry
AD	Active Directory	Industry
API	Application Program Interface	Industry
ASP	Active Server Page	Industry
AVL	Automatic (or Automated) Vehicle Locator	Industry
AWS	Automated Weather Source	Company
BDC	Backup domain controller	Industry
BOA	Bank of America	Company
CAD	Computer-Aided Dispatch	Industry
CAT	Short for the word Category	Industry
CDRW	Compact Disk – Re-writeable	Industry
CFC	Charter For Change	County Term
CHIP	Computerized Housing Inspection Program	Industry
CICS	Customer Information Control System by IBM	Company
CMDB	Configuration Management Database	Industry
CMMI	Capability Maturity Model Integration	Industry
CMS	Content Management System	Industry
COBOL	Common Business Oriented Language	Industry
COTS	Commercial Off The Shelf	Industry
CPU	Central Processing Unit	Industry
CRM	Customer Relationship Management	Industry
CS	Client/Server	Industry
DB	Database	Industry
DBMS	Database Management System	Industry
DCAO	Deputy Chief Administrative Officer	County Term
DER	Department Of Environmental Resources	County Term
DMZ	Demilitarized Zone	Industry
DPWT	Department Of Public Works and Transportation	County Term





DR	Disaster Recovery	Industry
Acronym	Title, Subject, or Phrase Usage	Reference Base
DT	Desktop	Industry
DVD	Digital Video Disk	Industry
EMC	Network Equipment Company Name	Company
FSB	Front-Side Bus	Industry
Gig	Gigabit	Industry
GIII	Gossamer Processor	Industry
GIS	Geographic Information System	Industry
HIPAA	Health Insurance Portability and Accountability Act	Industry
HP	Hewlett Packard	Company
HTML	Hyper-Text Markup Language	Industry
IBM	International Business Machines	Company
IIS	Internet Information Server	Industry
I-Net or INET	Institutional Network	Government
Infor	Name of a Computer Corporation & their product	Company
IP	Internet Protocol	Industry
IT	Information Technology	Industry
ITIL	Information Technology Infrastructure Library	Industry
JAVA	Programming language developed by Sun Microsystems	Industry
JCL	Job Control Language	Industry
LAN	Local Area Network	Industry
LCI	Livable Communities Initiative	County Term
LOB	Line Of Business	Industry
LTO	Linear Tape-Open (tape storage technology)	Industry
MDCIS	Mobile Data Computer Information System	Industry
MDF	Main Distribution Frame (or Main Data Feed)	Industry
Meg	Megabit	Industry
MIS	Management Information Systems	Industry
MS	Microsoft	Company
MX	Macromedia Suite Term	Industry
NetRMS	Internet (or Web Based) Records Management System	Industry



NTFS	New Technology File System (Microsoft Windows NT/2000/XP)	Industry
Acronym	Title, Subject, or Phrase Usage	Reference Base
OITC	Office Of Information Technology and Communications	County term
PC	Personal Computer	Industry
PCI	Peripheral Component Interconnect (or Interface)	Industry
PDC	Primary domain controller	Industry
PII	Pentium II	Industry
PM	Project (or Program) Management (or Manager)	Industry
POE	Power Over Ethernet	Industry
PRO	Processor made by Intel Corporation	Industry
QA	Quality Assurance	Industry
RAID	Redundant Array of Independent (or Inexpensive) Disks	Industry
RAM	Random Access Memory	Industry
RFP	Request For Proposals	Industry
ROI	Return On Investment	Industry
SAN	Storage Area Network	Industry
SAS	Statistical Analysis Software (or System)	Industry
SDE	Spatial Data Engine	Industry
SNA	Systems (or Synchronous) Network Architecture	Industry
SQL	Structured Query Language	Industry
SWOT	Strengths, Weaknesses, Opportunities, and Threats	Industry
TCO	Total Cost of Ownership	Industry
TCP	Transmission Control Protocol	Industry
TFT	Thin Film Transistor (Display Technology)	Industry
TRIP	Traffic Response & Information Partnership	Government
TSO	Time Sharing Option	Industry
UL	Underwriters Laboratory	Company
UNIX	Term for a well known Operating System	Industry
UPS	Uninterruptible Power Supply	Industry
USB	Universal Serial Bus	Industry
VOIP	Voice Over Internet Protocol	Industry



VPN	Virtual Private Network	Industry
VSAM	Virtual Storage Access Method	Industry
Acronym	Title, Subject, or Phrase Usage	Reference Base
WLAN	Wireless Local Area Network	Industry
WS FTP	Windows Sockets File Transfer Protocol	Industry
XGA	Extended Graphics Array (or Adapter)	Industry
XML	Extensible Markup Language	Industry
XP	Short For Windows XP (Operating System Name)	Company





LIST OF ENABLING TECHNOLOGIES

Infrastructure		
Network Services		
1.1	Network	This include installation, upgrades, maintenance, operations.
1.2	Computer	Includes mgmt of the users desktop / laptop as far as software, file protection, upgrades, maintenance, etc.
1.3	Technical Support / CSC	Service Desk for users.
Telecommunications		
2.1	Phone Systems	Ordering, installation, activation, maintenance, upgrades, billing, number changes, and directories.
2.2	Cell Phones	Ordering, distribution, activation, maintenance, upgrades, billing, replacements, and directories.
2.3	Pagers	Ordering, distribution, activation, maintenance, upgrades, billing, replacements, and directories.
2.4	Voice Mail	Account Set-up, account resets, voice system maintenance/ administration, and directories.
2.5	Wireless Communication Devices	Ordering, distribution, activation, maintenance, upgrades, billing, replacements, and directories.
Cabling		
3.1	Maintaining Phone / Network Closets	Hardware servicing and organization of wiring/ equipment interfaces.
3.2	Infrastructure Wiring Maintenance / Upgrades	Complete office-wide, bldg-wide, and regional cable runs. Repair breaks, upgrade old wiring and test wiring.
3.3	Installing new wire systems and jacks	Wiring for data and voice jacks. Install, activate/deactivate, and repair jacks.



<i>I-NET</i>		
4.1	Infrastructure build-out	New fiber optic to County and Pseudo Branches.
4.2	Switching / Data aggregation	Wiring Maintenance / Upgrades. Installing Network Equipment at non-County controlled sites.
<i>Data Center</i>		
5.1	Mainframe Operations	Job scheduling, execution, troubleshooting, equipment maintenance.
5.2	Network Hardware	Monitoring and protection.
5.3	Paper Binding Service	Printing, binding, sorting.
5.4	Other	
Systems Development & Maintenance		
<i>Application Development / Integration</i>		
6.1	Mainframe	Software engineering
6.2	Client/Server	Software engineering
6.3	GIS	Software engineering
6.4	Web/Portal	Software engineering
6.5	Database	Software engineering
6.6	Other	Software engineering



Application Operations & Maintenance		
7.1	Mainframe	Execution, monitoring, fixes, and upgrades.
7.2	Client/Server	Execution, monitoring, fixes, and upgrades.
7.3	GIS	Execution, monitoring, fixes, and upgrades.
7.4	Web/Portal	Execution, monitoring, fixes, and upgrades.
7.5	Content Management	Execution, monitoring, fixes, and upgrades.
7.6	Database	Monitoring, fixes, and upgrades.
7.7	Other	(e.g., Map Printing)
Enterprise IT Administration		
Process & Policy		
8.1	Process Definition	IT management process, procedures, policies.
8.2	Documentation Standards / Policy Creation	Templates, version controls.
8.3	Continuous Improvement	Define performance metrics, identify exceptions and initiate corrective/adaptive action.
IT Financial Management		
9.1	Budgeting	Establish IT budget(s) in support of strategic plans.
9.2	Execution	Receive and allocate funds in accordance with budget and process/policy.
9.3	Control	Provide financial data for metrics, identify budgetary exceptions, adjust execution plans as needed.
9.4	Contracts Administration	Administrative control, policy enforcement, monitoring, resolution of issues.





Security		
10.1	Network Security	Policies for firewalls, virus control, spyware control, patching, etc.
10.2	Computer Security	Policies for virus control, spyware control, patching, user access.
10.3	IT Facilities Security	Physical plant entry, exit--securing assets.
10.4	Disaster Recovery Plan	
10.5	Policy Creation	Reactive, as needed (e.g. HIPAA)
10.6	Directory Services	Administration of users, permissions, etc.
Enterprise IT Architecture		
11.1	Enterprise Applications Architecture	County-wide applications management.
11.2	Enterprise Data Architecture	County-wide data management.
11.3	Enterprise Interoperability Architecture	Middleware, messaging, and integration mechanisms (e.g., XML, Web Services, Asynchronous Message Queuing).
11.4	Technology Patterns	At County level, conceptually define ways to meet common needs through sharing (reusable modules, shared IT systems/services).
11.5	Technology Standards	Templating common needs.
Program/Project Management		
12.1	Project Management	Manage projects, educate, and coordinate.
12.2	Program Management	Portfolio management, assign projects, reporting to Senior mgnt.
12.3	Solution Delivery Process	Process, procedures, and performance measures for planning and building solutions.
12.4	Business Analysis	Requirements analysis, business case analysis, cost estimation, business process reengineering, human change management (i.e., organizational design).
12.5	Customer Relationship Management	Learn the agency, consult, develop relationships, and project involvement.





Performance Measurement & Quality Assurance		
13.1	Metrics Capture & Reporting	Statistics, interpretation, benchmarking, dissemination.
13.2	Customer Service Monitor	Evaluate CRM effort with the agencies and recommend improvements.
13.3	Control Testing Environment	Setup testing for hardware, software, documents, and support testing efforts.
13.4	Auditing	Evaluating any functional component of the agency.
13.5	Configuration Mgmt	Change control, version control, and project files repository (CMDB).
IT Asset Management		
14.1	Acquire IT assets	Quoting, purchasing, receiving, charging, and distributing equipment for the County.
14.2	Maintain IT assets	Inventory control, storeroom activities, warranty tracking, and vendor management.
14.3	Retire IT assets	Surplus assets.
Competency / Knowledge Management: Training		
15.1	Technical Courses (Vendors)	Arrange for appropriate vendor supplied courses.
15.2	Online Training	Arrange for and monitor the online training courses and system.
15.3	Internal Instructor Led	Train OITC personnel.
15.4	External Instructor Led	Train Agency personnel.



OITC ORGANIZATIONAL CHART

