



IT

Strategic

Plan

for the City of Philadelphia

May 2003

“Strategy is about making difficult choices”

Michael Porter

Current Conditions

Shrinking General Fund revenues challenge the City’s ability to invest in IT.

Over 120 core business systems applications are approaching end-of-life status.

Duplicative core business application functionality leads to expensive and inefficient business processes.

Fragmented IT infrastructure results in costly procurement and management processes.

Privacy and security concerns are driving a need for a more appropriate security model.

Lack of core IT skills result in a heavy dependency on consultants.

Lack of standardized IT infrastructure drives up support costs, increases IT complexity, and impacts the ability to better serve citizens through e-Government solutions.

Lack of City-wide IT project and risk management processes has led to the failure of IT initiatives.

History of failed and over budget projects.

Lack of City-Wide collaborative IT governance processes.

A Comprehensive Approach

The City of Philadelphia has adopted a comprehensive strategy for the use of information technology. This comprehensive strategy is summarized here to guide employees in the use of technology in order to better serve the needs of our citizens.

In the past decade, the City of Philadelphia has reinvented itself through a program of modernization and image building. It is a vibrant center for tourism, education and research, health care and the arts. New programs such as the Mayor's initiative for neighborhood transformation promise to make the City an ever more attractive place to raise a family, live, study and work.

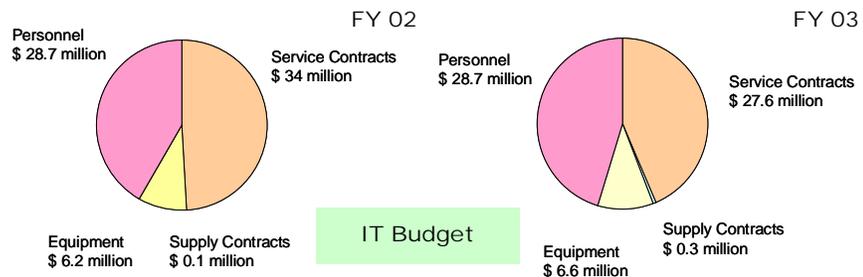
The information systems infrastructure in the City has not kept pace with the City's modernization. Prudently, City management has focused its investments where they could have the biggest impact, but a lack of strategic IT planning in past years, has resulted in an aged IT infrastructure, unreasonable IT support costs that, if not systematically modernized, could shortly reach crisis point.

Effective IT organizations focus tirelessly on cost efficient and effective management of IT infrastructure, and free valuable funds to invest in critical IT modernization activities that are needed to support strategic initiatives and meet basic business needs. Effective IT organizations collaborate across the enterprise to gain leverage and plan and implement systems modernization every day, one day at a time.

This plan calls for consolidation of costly IT operations and infrastructure management to yield savings while strengthening the technology foundation of the City. It calls for an enterprise focus on core City applications, which coupled with process re-engineering will increase worker productivity and allow valuable City staff to be released from mundane administrative tasks and re-focused on higher value, customer service activities and Mayoral initiatives. The plan envisions a strong central IT function, working collaboratively with Departmental IT organizations to focus the City's IT investments in those areas of greatest return. It envisions a reduction in duplicate or redundant IT initiatives, and it depends on the commitment of the City's executive team to lead the transformation.

IT Budget
 The City's total IT budget in FY 03 was an estimated \$63 million. The MOIS adopted budget in FY 03 was \$13.5 million or 21 percent of the City total. (This excludes costs for telecommunication.)

In FY 03 the City had 566 staff with IT job titles assigned to individual departments and MOIS. As of November 2002 MOIS had 139 employees.



The Mission

Vision Statement *The City of Philadelphia will embrace information technology as a strategic enabler, embedding it as a critical and fundamental component in all that the City does, while ensuring its use and application is aligned with and supportive of the efficient and responsive delivery of services to all of the City's constituents – its residents, businesses, institutions and visitors.*

By aligning information technology in support of the business of city government, the City of Philadelphia will become a more agile organization that is better able to adapt to changing conditions and pressures. Through investment in information technology, the City will develop and implement innovative approaches for improving the quality and delivery of needed services to its constituents.

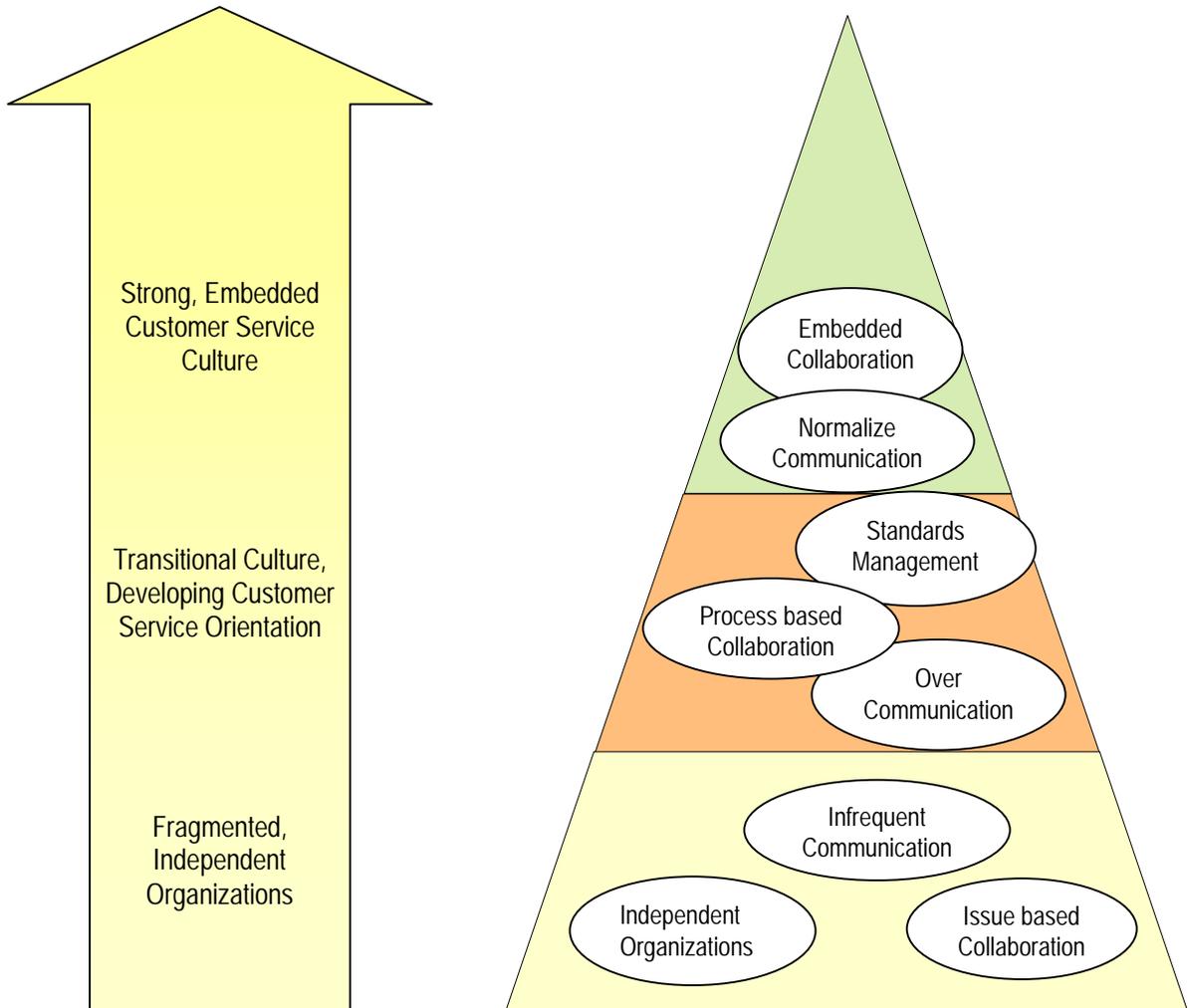
Goals

- *Develop a high performance, scalable and reliable City-wide IT infrastructure that supports the dynamic requirements of the City.*
- *Align the City's IT initiatives with the City's overall business objectives while ensuring Departmental responsibilities and priorities are recognized and taken into account.*
- *Invest in IT systems based on a rational and impartial assessment of both the tangible and intangible benefits and a realistic assessment of project costs and risks.*
- *Reduce the cost of operations or service delivery or improve the quality of services delivered to customers through IT investment. Systematically assess and document the benefits realized from IT initiatives.*
- *Deliver IT services in a cost-efficient manner.*
- *Approach IT initiatives as a partnership between MOIS and individual agencies.*

Guiding Principles

Leadership	<i>City management at all levels will embrace technology as a strategic enabler and will encourage their staffs to utilize IT to improve the way they do their jobs and deliver services to customers.</i>
Communications	<i>There will be effective communications between departments and MOIS to keep all parties involved and informed on the progress of IT initiatives and IT trends. The City will keep the public informed on the use of technology in the City.</i>
Accountability	<i>Create an environment that encourages accountability through service level agreements, performance measures and individual responsibility.</i>
Enabler	<i>While technology must be viewed as a critical and strategic investment, it must be balanced with recognition that IT systems are merely enablers and not ends themselves.</i>
Enterprise-Wide	<i>Encourage an enterprise-wide approach when managing the City's data and utilizing technology in order for the investments to be effectively leveraged in the future by departments, businesses and constituents.</i>
Technology	<i>Implement contemporary, but proven technologies that maximize future options by emphasizing open standards. Applications should use Commercial Off-the-Shelf software and should be web based, wireless ready and GIS enabled, where appropriate and applicable.</i>
Efficiency	<i>Decisions regarding funding for technology initiatives should be based on the review and assessment of a comprehensive business case that takes into account both the tangible and intangible costs and benefits of the project</i>
Strategic Investments	<i>IT assets, systems, skills and support operations will be viewed as strategic investments that are critical in attaining agency and City business objectives.</i>
Partnerships	<i>The City should maintain partnerships with outside organizations to undertake collaborative efforts in the provision of information and services and to obtain expert advice and knowledge of IT trends.</i>
Accessibility	<i>Implement technology that provides all internal and external customers easy and timely access to data and information. The City will strive to make data available for the benefit of the public subject only to the need to protect the privacy of individuals. The City will work to bridge the digital divide so that all of its constituents can take advantage of the City's investments in technology and will make the accommodations necessary to meet the special needs of all Philadelphians.</i>

Customer Service Value Chain



Institutionalize a Collaborative Customer Service Culture

Effective management across organizational boundaries demands collaboration and an unwavering commitment to customer service.

Citizens expect to interact with the City as a single entity and we must be organized to provide services as such. Today departments and employees must view the City as a single virtual service organization without boundaries or limitations for the betterment of our employees, the citizens.

Optimized IT governance models call for cross department collaboration, and a collective focus on delivering the best service regardless of the internal organizational boundaries. This best practice is only achievable when groups of IT professionals work side by side with a common goal, a common understanding of performance expectations and the support of their executive teams.

An unwavering commitment to Customer Service means setting realistic expectations, and measuring performance against them. It means celebrating the successes, and learning from the challenges. It means reducing, or eliminating work that does not bring value to the City and its customers, and redeploying resources to value based activities. Most importantly, customer service means that individuals, organizations and teams collaborate to deliver. When problems occur, they roll up their sleeves and focus on resolving them, regardless of organizational affinity.

- *Ensure that the Central IT staff are focused on customer service.*
- *Foster the links between Central and Departmental IT organizations through the implementation of a Cluster Relationship Management program.*
- *Increase the value of the Central IT organization by establishing a Project Support Center and validate its relevance quarterly.*
- *Establish a comprehensive communications plan to reinforce the cultural expectations for all IT stakeholders.*

Establish a Strong Central IT Organization



The CIO Management Framework[™] describes the recommended processes that the Central IT organization will adopt in order to support the City's IT goals and objectives.

In addition to leading major IT initiatives, managing IT operations and IT planning the Central IT organization plays a leadership role in IT governance and business management in the City.

An Effective Central IT Organization

Performs IT functions on behalf of, and at the behest of, its customers (the City departments and constituents) efficiently and effectively.

Understands and is responsive to the business needs of its customers and other stakeholders.

Provides a solid technical framework that guides the implementation of Information Technology in the City and supports its business objectives.

Cooperatively sets Information Technology standards and monitors compliance.

Delivers quality information technology advice and guidance,

and supplements IT skills in the departments.

Establishes and monitors the use of standard project management methodologies.

Manages the IT infrastructure in conjunction with its stakeholders.

Leads major IT initiatives in cooperation with its stakeholders.

Continually assesses and manages IT risk in partnership with departments and the City.

Accepts accountability for the provision of high quality central IT services to its customers.

Educates its stakeholders on IT issues that impact their business performance.

The central IT organization earns the respect and trust of its customers by building partnerships to deliver quality service, being responsive to their needs, and providing tangible value to the departmental IT organization.

This Central IT organization recognizes that its role is that of advisor, service provider, and valued partner. In return for the trust of its customers it exhibits an unwavering commitment to delivering superior customer service to the departments.

The Central IT organization does not measure its success by only those functions it controls or delivers on behalf of the member departments, but on the overall performance of IT in the City. It is just as vociferous in its support of department or cluster led activities, as it is in the delivery of those services provided directly by its staff.

This central function is led by a strong, competent CIO, firmly committed to the customer service culture, collaborative and supportive of departmental business objectives and consultative and collegial on issues pertaining to IT in the City.

Commit to Departmental IT Organizations

Effective IT management in the City relies on Departmental IT organizations, focused on the definition and implementation of business applications, and collaborating with the City's Central IT organization on matters of mutual concern.

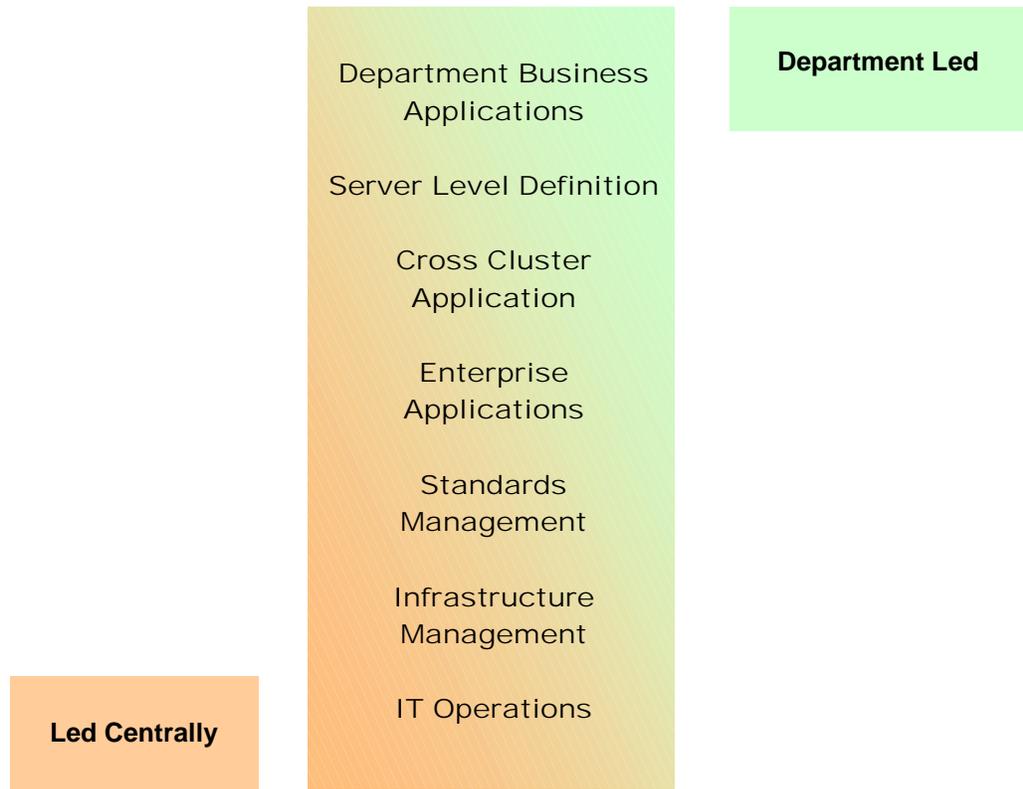
The City's IT strategy calls for Departmental IT organizations with the capability and responsibility to:

- *Assess their departments IT needs and work collaboratively with the Central IT organization to ensure effective delivery.*
- *Be the departmental voice in City-wide IT discussions that affect the department's business or IT environment.*
- *Lead the implementation of departmental business applications, and provide department-specific input to City-wide initiatives.*
- *Assess service level requirements for, and monitor the delivery of, IT services delivered to the department by the Central IT organization or external vendors.*
- *Actively and constructively participate in the development of, and compliance with, City-wide IT standards, methodologies and policies.*
- *Seek opportunities to collaborate with other Departments and Central IT leadership to minimize duplicative IT spending and share information.*
- *Manage departmental application portfolio and its evolution.*
- *Participate in cluster meetings and other City-Wide IT workgroups.*

This organization focuses its efforts on the application of Information Technology to support the business strategy and objectives of its department.

Departmental IT organizations recognize that the City saves money from economies of scale and support the central management of IT infrastructure and enterprise initiatives.

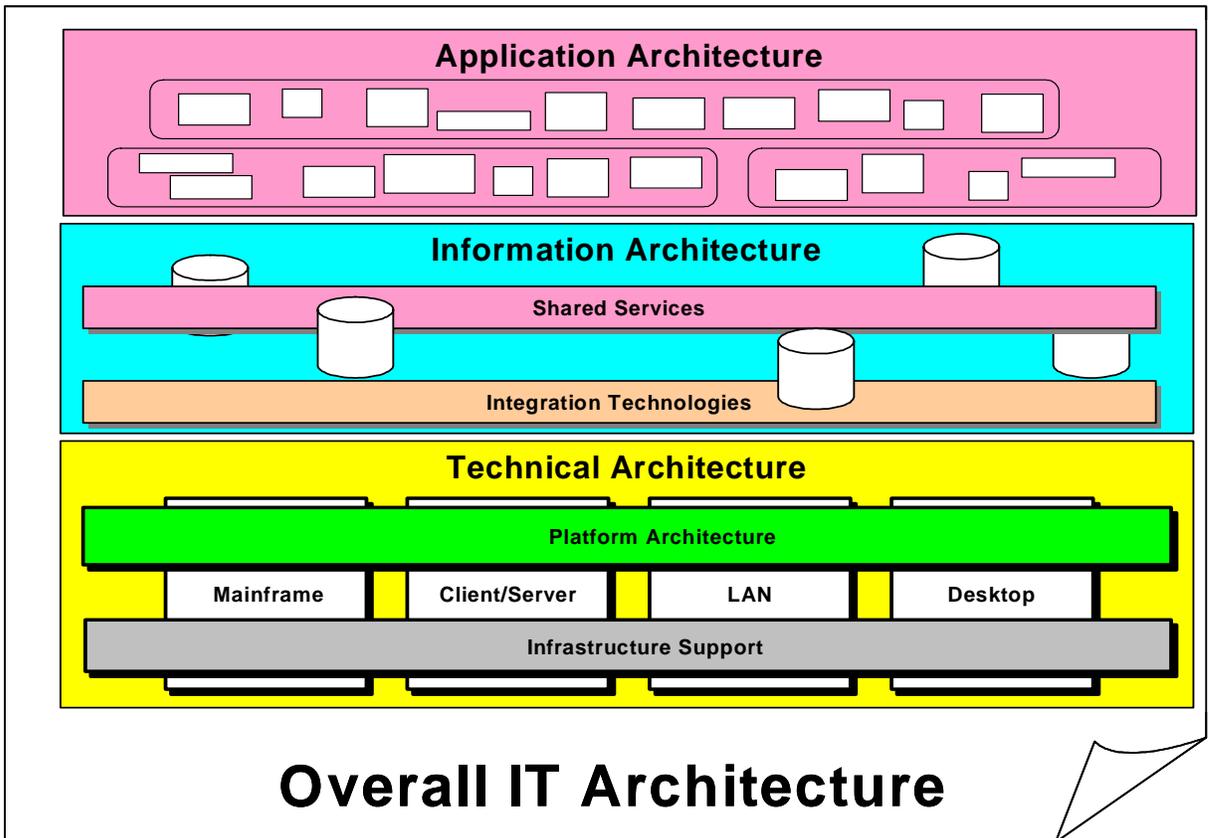
Departmental IT organizations work with the Central IT organization to manage service delivery and resolve issues in a proactive and constructive manner.



The City-wide IT Architecture describes the technology, information and application models that will be adopted by the City.

The IT Architecture forms the basis for IT standards.

The Architecture describes the evolution of the existing IT environment and transition to the new model.



Develop City-wide IT Architecture and Standards

Healthy organizations make a commitment to planning. In the IT world this blue print is an IT Strategic Plan and a major element of that plan includes the preparation of an IT Architecture and the standards that are necessary to implement it. The Strategic Plan and the IT Architecture guide investment so that the future business needs of the City are realized in an orderly progression to a rationalized conclusion where all IT investments are tied to the delivery of services to our customers – the citizens.

Current disparate and outdated computing platforms, information data bases and application models increase the complexity and expense of sharing information, managing application evolution, servicing the City's users consistently and effectively, and introducing new IT solutions.

The IT architecture will be the basis for establishing and moving towards City-wide IT standards.

IT Architecture will:

Result in a commitment to fewer distinct technology hardware and systems software environments.

Describe an information model that optimizes data sharing and minimizes data redundancy.

Describe a Commercial Off-the-Shelf application model that assists the City to streamline end-to-end business processes and eliminate duplicate business systems.

Plan the evolution of the City's IT model to the new architecture.

Describe the skills required to implement and support the new IT environment.

With a more standardized information technology infrastructure the City can optimize cost efficiencies from service consolidation, reduce the risk associated with new information systems development efforts, and avoid costs of unnecessary duplicative IT efforts.

An effective City-wide IT Architecture development process depends on collaboration among the Central IT organization, representative departmental stakeholders and all IT service staff.

While the goal is to increase standardization, the model must provide for the flexibility to accommodate business needs where necessary to best serve the City's needs.

An IT architecture compliance process will be established with the CIO having final adjudication authority.

Benefits of Centralized IT Organization and Management Approach

- Greater cost efficiencies.*
- Economies of scale.*
- Lower overhead costs.*
- Ability to establish standards and simplify computing environment.*
- Greater potential to attract and retain qualified IT professionals in one larger organization than many smaller ones.*
- Ability to establish performance metrics and monitor results on an enterprise basis.*
- Ability to better leverage prior experiences.*
- Ability to coordinate and integrate across organizational boundaries, especially as related to enterprise initiatives and sharing of data.*
- More effective use of common infrastructure.*
- IT Staff more responsive to enterprise goals.*

Benefits of Decentralized IT Organization and Management Approach

- More responsive to individual departmental and program business needs.*
- More innovative and adaptive to change.*
- Ability to understand program area and effectively apply technical expertise.*
- Ability to closely manage and monitor available resources.*
- Ability to influence priorities to meet program needs without competing for resources with other entities.*
- Greater departmental control over the selection of the service provider.*
- More flexibility to address the application of new technologies.*
- IT staff more responsive to Agency leadership.*

Consolidate IT Infrastructure Management

While IT infrastructure management is a specialized function, it is usually not differentiated by the business function of an organization.

Many governments and businesses have realized substantial cost and productivity benefits from consolidating the management of the IT infrastructure under a single effective service provider.

As the City of Philadelphia strives to leverage more of its IT funds to better support the critical functions of government, and to modernize its application base, it will focus on consolidating functions under a Central IT organization and reap the economic benefit of doing so.

Furthermore, IT infrastructure management consolidation often results in increased affordability of modernized IT equipment and peripherals (such as storage and retrieval devices).

Specifically the City of Philadelphia will investigate the business benefit of:

- *Reducing the number of and consolidating the management of mainframe and server data centers in the City.*
- *Consolidating the management of the City's business-critical servers in an environmentally appropriate and secure facility.*
- *Cooperatively establish a single Tier One help desk capability for all City IT users.*
- *Establishing a single LAN administration and management function for the City.*
- *Consolidating the management and business processes governing the deployment of on-site desktop and LAN support.*
- *Establishing and publishing infrastructure management performance metrics, and rigorously managing to them.*
- *Assessing the City telecommunications function to determine the best management structure for this function.*

Desktop Environment

The City's desktop environment consists of an estimated 13,300 PCs and about 1,500 laptop computers. A review of this environment reveals that:

Almost 60 percent of the City's desktops and laptops are now using an operating system (Windows NT or earlier) that is either unsupported by Microsoft or will be completely unsupported by June 2004.

Slightly over 57 percent of the City's desktops and laptops have a Pentium II processor or earlier.

Over 30 percent of the City's desktops were purchased prior to 2000 and another 24 percent in 2000.

Over 60 percent of the City's desktop and laptops are using Microsoft Office 97 or components of Office 97. Microsoft will end assisted support for this software by January 2004 and all on-line support by January 2005.

Establish an Enterprise Application Model

Many of the City's core business systems are rapidly approaching obsolescence.

The historical and haphazard evolution of these aging systems has resulted in many business functions being duplicated in multiple information systems, end-to-end business processes being interrupted by lack of integration between core and departmental systems, and greater than optimal systems maintenance and support costs. All of this has caused our customer service to be less than what it should be - uncoordinated and too costly.

As departments retire and replace aging systems, the City plans to adopt best practices in the business model and eliminate the costs of implementing, supporting and maintaining duplicate and overlapping business systems. In doing so the City will streamline its business functions, create uninterrupted end-to-end business processes that require little if any human intervention, and re-focus its staff on initiatives that have higher value to the city.

Specifically the City will:

- *Complete a comprehensive assessment of all its business applications in order to identify business functions with enterprise implications.*
- *Implement the Oracle 11i Enterprise Business Suite that addresses the core business systems (e.g.: HR, Financials, Procurement, Budget, Customer Service, Work Order Management) to the fullest extent possible.*
- *Plan and prioritize the evolution of the City's core business systems identifying costs, constraints, risks and barriers and opportunities to create efficiencies.*
- *Identify and validate possible funding streams and mechanisms for supporting the planned evolution of the City's core business systems.*
- *Align the prioritized plan with available funding.*
- *Secure the services of an ERP Director.*
- *Rigorously manage the evolution of core business systems to an ERP environment ensuring all planned cost efficiencies are captured.*

More than 67% of the City's business applications have 5 years or less remaining before reaching the 'end-of-life' phase.

Application Development Toolkit Life-Cycle

		Infant	Adolescent	Adult	Mature	Aging	Elderly
Level of Maturity	Current examples ¹	XML, EJB, SOAP	DHTML, Java, Visual Basic, Oracle, SQL Server, .net	Pascal, C++, PowerBuilder	Smalltalk, RPG, COBOL ² , C	FORTRAM, Adabas ³ , ADA	PL/1, APL
	Short Term	Exploratory	Encourage	Assess architectural suitability	Assess architectural suitability	Actively discourage	Forbid expansion
	Long Term	Assess for future standards	Focus on business benefit and architectural suitability. Focus for new development.	Maintain and enhance applications. Move towards object module design.	Migrate to most common form	Avoid new use	High priority to replace
	Typical time to next stage	1 year	2 years	10 years	5 years	<5 years	End of life
City Application Alignment by Cluster	Finance and Executive Management		16	5	22	25	
	Municipal Services		30	6	6	54	1
	Public Safety		4	2	8	15	
	Social Services		16	9	24	23	3
	Total	0	66	22	60	117 ⁴	4

Sourced from the Gartner Research Study, "Legacy Evolution: Strategies for Reuse, Not Abuse, June 2001"

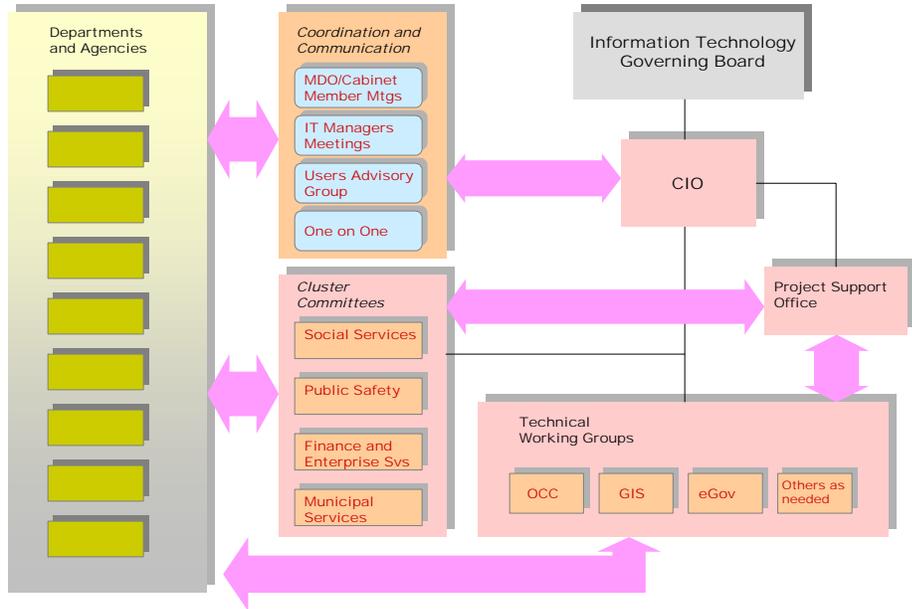
¹ Applications categorized in this table by Gartner did not include Adabase, Powerbuilder, Visual Basic, SQL Server or Oracle. The table has been updated by Deloitte Consulting to include those technologies, which are prevalent in the city.

² Gartner categorized COBOL as adult. Deloitte Consulting best practice research indicates that COBOL should be categorized as Mature, or even aging based upon the description and has repositioned it in that category.

³ Adabase is not categorized by Gartner in the table, however it is referred to as aging in Gartner Research's 'Keeping Score: AD Tool Vendors and Technology Evolution' February 2002.

⁴ Includes VSAM and proprietary applications implemented before 1985.

Next Steps: Governance Framework



The City will adopt a collaborative governance model that drives cost efficiencies through the consolidation and effective management of IT infrastructure.

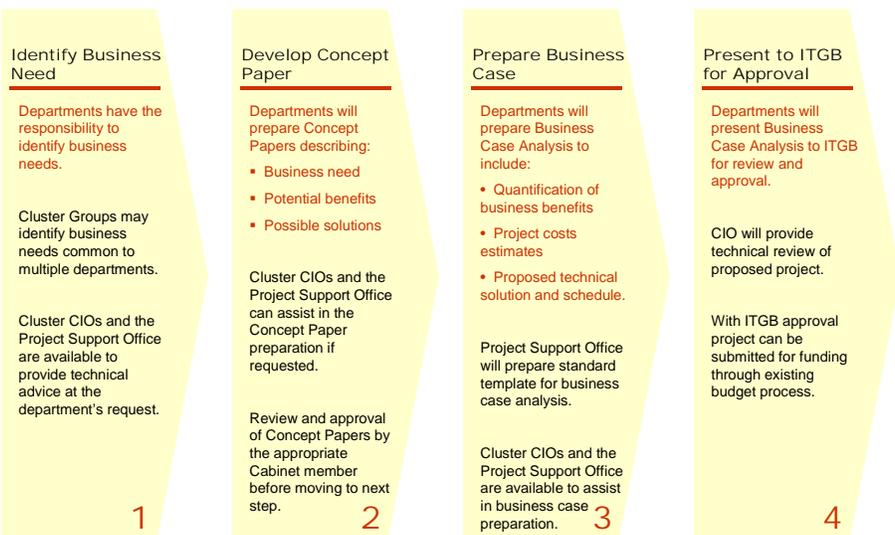
Critical IT resources will be focused on business enhancing IT initiatives including departmental business application development and management, cross departmental (or cluster) business-based initiatives and the enterprise application initiatives.

IT Project Review

IT projects and initiatives will flow from the business needs of departments. Decisions on IT projects of greater than \$100,000 will require review and approval by the ITGB and that process will be coordinated with the City's annual budget cycle. MOIS will provide departments technical assistance as needed. Departments will present projects to the ITGB and the CIO will provide a technical review.

Projects of lesser magnitude will not require ITGB approval but will still be subject to existing budgetary approvals and approval by the CIO as currently exists.

IT Project Review and Approval Steps (Projects > \$100,000)



Institutionalize a New IT Governance Model

Users Advisory Group

During the preparation of the IT Strategic Plan, an ad hoc group of commissioners and departmental business executives met to discuss common IT concerns outside of the formal planning process. It provided MOIS's clients with a forum to explore how IT is used in the City – how it is planned for, how it is implemented, what works and what doesn't.

This coming together of City IT users is analogous to the user groups that have emerged around many industry issues and products. These voluntary organizations play a role in helping to define technology goals and needs. They provide technology firms with essential direction and feedback and could do the same for MOIS here.

A continuation of these meetings, organized and chaired by the departments and with members appointed by the appropriate Cabinet member, would complement the IT managers meetings now taking place. MOIS stands ready to support this Users Advisory Group and provide the administrative support it might need.

Critical IT decisions must be made in a collegial environment inclusive of all stakeholders. Decisions must be made with a complete understanding of the cost and business case implications, and with full disclosure of the all risks and opportunities presented.

In effective organizations using best practices, business executives collaborate with IT leaders to ensure that business needs are met in a cost effective manner, that these decisions optimize the value of the City's IT assets, and that customer satisfaction is preeminent.

A governance model, that balances the need for consultation, with recognition of the need for pragmatically enforced policies and controls, is necessary to achieve a robust, cost-effective City-wide IT capability.

There is a time for consultation and a time for decision. The governance model clearly identifies the decision point for all substantial IT decisions to be the Information Technology Governing Board (ITGB). Comprised of the Chief of Staff, Managing Director, Finance Director and Chief Information Officer, the ITGB considers input from stakeholders and IT professionals and decides on the best course of action for the City.

The City CIO has the responsibility on behalf of the Mayor and the ITGB to ensure that these decisions are effectively carried out.

The governance model describes the roles and accountability of the Central IT organization and of IT and business leaders in the departments.

Specifically,

- *The Central IT organization shall have responsibility for managing the information technology infrastructure on behalf of the City.*
- *Information Technology architecture and standards, and their related compliance processes, will be instituted by the Central IT organization.*
- *The Departmental IT organizations will have responsibility for implementing and managing departmental applications.*
- *All IT stakeholders will strive to optimize cost efficiencies, and reduce duplicative spending on behalf of the City.*

All this will not be finished in the first 100 days. Nor will it be finished in the first 1,000 days, nor in the life of this Administration, nor perhaps in our lifetime on this planet.

But, let us begin.

John F. Kennedy
January 1961

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