FY2013 City of Albuquerque IT Plan

Introduction

This Information Technology (IT) Plan lays out the future vision of technology use for the City of Albuquerque. The goal is to empower our City and expand government accessibility for our citizens and businesses city-wide through the smart use of technology. Specifically, this plan relates to the mission and functions of the Department of Finance and Administration Services (DFAS), Information Technology Services Division (ITSD).

ITSD is responsible for the overall IT function within City government, therefore, it is vital that ITSD understands and can support the multitude of constituent services that the City of Albuquerque provides. Recently we went through an effort to start an Enterprise Architecture and the end product of that process is an "IT Strategy Playbook", of which much of this plan was derived from.

The appropriate use of technology within City government will provide for the delivery of improved citizen services while expanding the accessibility to City government for our partner constituents in Albuquerque and beyond.

The purpose of this plan is to:

- Provide a set of guiding principles for the City to use when making technology decisions that affect the City of Albuquerque constituency.
- Illustrate the importance of moving from the legacy approach of treating IT as a separate set of tools and applications that are not linked to City performance goals.
- Ensure that business processes within the City are supported by automated work-flow and process optimization applications. Provide for an "ERP first" mentality that will leverage the enterprise integration of data and information which the Oracle/Peoplesoft ERP suite (licensed by the CoA) provides.

The City of Albuquerque

Albuquerque is located in the center of the state of New Mexico and is the largest City in the state. As of 2011, it is the 32nd largest city (population 545,852)[1] and the 57th largest metropolitan area (population 907,775)[2] in the United States. The City, founded in 1706, became a charter city in 1971 and the electorate chose a mayor-council[3] form of government in 1974.

Boasting a low cost of living[4], Albuquerque has a diverse mixture of income and demographics.

1 http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.ST13&prodType=table

2 http://www.bizjournals.com/buffalo/datacenter/metro-area-populations-july-1-2011.html?appSession=572166908847606&RecordID=15&PageID=3&PrevPageID=2&cpipage=1&CPIsortType=&CPIorderBy=&cbCurrentRecordPosition=1

3 http://en.wikipedia.org/wiki/Mayor-council

4 http://www.abq.org/Cost_Of_Living.aspx

In turn, this results in a wide range of economic, housing, health and cultural needs. Within City Government, there are 26 City Departments that employ approximately 6, 000 employees.

Business Strategy

As noted in the City's Consolidated Annual Financial Report for 2010[5], the City is responsible for providing services including:

- Public Safety
- Culture and Recreation
- Public works
- Highways and streets
- Storm drainage
- Refuse collection
- Parking facilities
- Transit system
- Albuquerque International Sunport Airport

The vision and goals for these efforts are described by eight, community-driven goals established by the Indicators Progress Commission[6]. These are listed in summary form in Table. In summary, these goals are a way of measuring progress to meet the 2006 vision statement in which "Albuquerque is a thriving high desert community of distinctive cultures creating a sustainable future."[7]

Number	Title	Description
1	Human and Family Development	People of all ages have the opportunity to participate in the community and economy and are well sheltered, safe, healthy, and educated.
2	Public Safety	Citizens are safe, feel safe and secure, and have trust and shared responsibility for maintaining a safe environment.
3	Public Infrastructure	Ensure that all existing communities are adequately and efficiently served with well planned, coordinated, and maintained infrastructure. Ensure that new development is efficiently integrated into existing infrastructures and that the costs are balanced with the revenues generated.

5 http://www.cabq.gov/investor/documents/2010-Comprehensive-Annual-Financial-Report.pdf/
6 http://www.cabq.gov/progress/introduction-and-use-of-this-report/letter-from-commission
7 http://www.cabq.gov/progress/introduction-and-use-of-this-report/letter-from-commission

4	Sustainable Community Development	Guide growth to protect the environment and the community economic vitality and create a variety of livable, sustainable communities throughout Albuquerque.
5.	Environmental Protection and Enhancement	Protect and enhance Albuquerque's natural environments – its mountains, river, bosque, volcanoes, arroyos, air and water.
6.	Economic Vitality	Achieve a vital, diverse, and sustainable economy in which businesses and residents have opportunities for success.
7.	Community and Cultural Engagement	Residents are fully and effectively engaged in the life and decisions of the community to promote and enhance our pride, cultural values, and resources and ensure that Albuquerque's community institutions are effective, accountable, and responsive.
8.	Governmental Excellence and Effectiveness	Government is ethical and accountable; every element of government contributes effectively to meeting public needs.

Table 1: City Goals

ITSD's Customers

In order to provide services that its customers will find valuable, ITSD must identify its customers and then understand the needs and values of these customers. We can divide these customers into two groups; those that are internal and within the City organization and those that are external and outside the City organization.

Internal Customers

Internal customers are those inside the City who, directly or indirectly, use the services provided by ITSD. They include:

- Mayor
- City Council
- City Departments and business units
- Employees, contractors, and volunteers

External Customers

At the same time, ITSD must also provide services to customers outside the City. These customers include:

- The citizens of Albuquerque, in particular those who:

- Wish to use services provided by the City
- May wish to work for the City

- Potential visitors and visitors staying in Albuquerque
- Other governmental entities and organizations (including agencies such as Federal, State, Mid-Rio Grande Council of Governments, Albuquerque and Bernalillo County Water Authority)
- Companies who:
  - Are doing business with the City
  - May wish to do business with the City
  - May wish to locate operations to the City

Current IT Situation

Maturity Model

Overall, ITSD and the services we provide is most likely rated at Level 2/Managed, as determined by the Capability Maturity Model Integration (CMMI)[8] model. Level 2 indicates that processes may have been defined for projects, but overall, the IT response is often reactive.

Complicating this description is the method in which IT is governed within the City. All IT strategy and decisions do not originate or are executed through ITSD. Instead, ITSD seeks to complement and augment IT services already provided by City Department's themselves. Therefore the exact scope and nature of the assistance will depend on the following factors:

- Whether the City Department making the request already has an established IT function.
- If an IT function has been defined by the business unit, does the IT function have the necessary skill-set and bandwidth?
- Whether ITSD has the available skill set and capacity to provide the service, or does it need to be sourced externally?
- Whether the request involves enterprise or infrastructure considerations (e.g. the implementation of an enterprise-wide case tracking system, the deployment of a server-farm or providing network services to a new building)

Therefore, it's clear that the maturity of a specific IT service may not only be a function of the ITSD maturity level, but also of the maturity level of the business unit providing these IT services.

Current IT Situation – Enterprise Domains

This section discusses the current IT situation for each of the 8 domains. It draws heavily from pages 8-51 of the IT Playbook and so is presented here in summary form.

8 http://en.wikipedia.org/wiki/Capability_Maturity_Model_Integration

Business Architecture domain

- Multiple data silos – Limited opportunities for data sharing means that data exists in silos. City organizational boundaries do not encourage collaborative approaches across boundaries.
- No centralized information strategy – Business units must develop their own way to understand and collect data in isolation of each other and with no universal definition of that data. Businesses are often not engaged in the development of IT solutions.
- Devices and applications discourage sharing – The ability for devices and applications to collaborate and share data across systems effectively is often a low or non-existent priority
- Public vs. Private Requirements and Document Lifecycle Management – There is often a conflict between public and private information. Both are necessary, but may have different storage and retention expectations and compliancy requirements. Internal process and documentation is often lacking in clarity regarding exact requirements.
- Data is not treated as an asset – Although data might be used as an input into a system, there is little or no thought to information retrieval.

Application Architecture domain

- The City utilizes a mix of internally developed/internally hosted commercial off the shelf, and externally hosted/commercial off the shelve applications to meet business needs.
- Many business units would like to utilize applications to improve their functions, however, they do not have capability to research, select and implement appropriate solutions.
- The City utilizes a number of monolithic software solutions primarily for ubiquitous communication or central service functions such as email, Enterprise Resource Planning (ERP), Business Intelligence (BI), image management, Web Content Management (WCM) and Sharepoint.
- Business units utilize point solutions to meet their specific business needs (such as Trapeze, Route Smart, Chameleon, etc.).
- The City utilizes a few software solutions to meet multiple department needs, but recognizes that these current solutions do not meet the needs of all departments.

End user domain

- ITSD estimates that it is responsible for 6,000 personal computing devices. Most departments within City Government report using Microsoft operating systems and bundled Microsoft office suite software on nearly every desktop and notebook.
- The standard configuration includes Internet Explorer, Trend Micro Anti-Virus, and Adobe Acrobat Reader as commonly deployed software on new desktop or notebook setups. Desktops and notebooks used as a primary computer also usually have network and systems management client software (Novel, Zen). Notebooks used mainly as mobile

devices will usually contain at least anti-virus and virtual private network software allowing remote (user's access behind the firewall.

- Separate Procurement Processes for Hardware and Software – Microsoft Office products are not available through the same vendor that is used to acquire desktops and notebooks and must be ordered and procured separately.
- Fund 730 monies (used to replace large quantities of hardware) have not been available for several years as of 2011. This means that each department uses operating funds to procure desktops on an as needed basis.
- Volume Purchase Agreements – the procurement of hardware and software is guided by City Standards and requires confirmation of minimum City standards and approval for each purchase. There is concern about not taking advantage of savings that may occur from a volume purchase agreement with select vendors. The procurement process is cumbersome and requires many levels of approval and staff time to complete.

Information Domain

- Multiple data silos – Limited opportunities for data sharing means that data is exists in silos. City organizational boundaries do not encourage collaborative approaches across boundaries.
- Current processes within the City focus on getting data into the system. There is little thought or consideration as to how to get information out of the system (the "digital trashcan").
- No overlap between solutions – Two business units within the same department, for example, might ask to develop separate client intake systems instead of working together on the same solution.
- No Centralized Information Strategy – Business units must develop their own way to understand and collect data in isolation of each other, with no universal definition of that data.
- Lack of business unit engagement – Business units are often not engaged in the development of reports leaving the technologists to make decisions as to what information and assumptions should be used for the report.
- Data accountability – Chain of data ownership can be difficult to maintain and verify. Rolled up or accumulated information is difficult to evaluate for quality because it begins as a spreadsheet on a C:\ drive.
- Point solutions – Applications are usually considered as stop-gap solutions to a problem at a particular point in time.
- Document Lifecycle Management – In order to meet the needs and expectations of its citizens, the City must store private as well as public data. This can result in a conflict between public and private information because they may have different storage and retention expectations and compliancy requirements.
- Data is not treated as an Asset – Data is not considered as a valuable asset within the City. Although data might be used as an input into a system, there is little or no thought to information retrieval.

Network Domain

- Fragmented planning – No annual Department or ITSD technology plans or equipment replacement plans.
- Old equipment – Network and telecommunications equipment is nearing end of life.
- Lack of standardization – Complex network utilizing multiple network vendors, multiple types of dedicated circuits and types of data transport technologies.
- Network does not meet business needs – Sparse, low bandwidth, insecure wireless network running on antiquated wireless equipment.

Platform Domain

- Architectural complexity – Complex state of OS to Hardware to Database.
- Directory services complexity – Multiple domains across multiple platforms.
- Few well-defined processes – Only one TRC standard.

Radio Domain

- Duplication of effort – The City of Albuquerque owns two separate Land Mobile Radio systems. The County of Bernalillo owns one Land Mobile Radio system.
- Lack of regional governance – The City and County's radio systems isolate them from surrounding municipalities.

Security Domain

- Security Plan – The City of Albuquerque does not have a comprehensive security plan.
- Out of date policies – Many existing security standards have expired and may need to be updated to reflect existing technologies.

Technology Forecast

In order to respond quickly and effectively to business unit technology needs and expectations, ITSD must anticipate and recognize technology trends. This section identifies some key technology trends that can reasonably be expected to persist or grow over the next 3-5 years. It is not intended as a definitive prediction of the future, but rather a point in time assessment to be used for the purposes of this strategy document.

Cloud Computing

Cloud computing[9] will continue to find acceptance as a viable alternative to traditional onsite architecture and deployment. Cisco[10] estimates[11] that, by 2014, more than 50% of all workload will be processed in the cloud, and that by 2015, one-third of data center traffic will be cloud traffic. Solutions such as Amazon Elastic Computing[12] and Microsoft Windows Azure[13] will allow systems architects to leverage benefits of lower capital outlay and decreased operational costs in managing systems.

The benefits of cloud computing will also be felt by end users. Cloud-based offerings such as Google Docs[14] and Microsoft Office 365[15] will continue to gain acceptance with users. Part of the reason for the acceptance of software as Service (SaaS)[16] products is because these applications usually require a lower-specification end user device than a traditional "thick-client"[17] equivalent.

Virtualization

Both server and desktop virtualization[18] will continue to gain ground at the expense of traditional architectures. As many as 77% of local and state IT respondents to a recent study[19] stated that their agency had already implemented some form of server virtualization. Meanwhile, the same study indicated that virtualized workloads are expected to double by 2015.

Desktop virtualization, by contrast, experienced steadier growth. However, Gartner in a 2009 report[20] states that they forecast desktop virtualization to account for 15% of the professional PC market by 2014. They further expect acceptance and growth of virtualization to accelerate as the global economy improves, and this trend can be validated on a non-scientific basis by studying the increasing discussion and acceptance on the internet. Some industry watchers expect that

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9 http://en.wikipedia.org/wiki/Cloud_computing
10 http://www.cisco.com/
11 http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns1175/Cloud_Index_White_Paper.html
12 http://aws.amazon.com/ec2/
13 http://www.windowsazure.com/en-us/pricing/3-month-trial/?WT.srch=1&WT.mc_id=CMG001_Search
14 https://docs.google.com/
15 http://www.microsoft.com/en-us/office365/
16 http://en.wikipedia.org/wiki/SaaS
17 http://en.wikipedia.org/wiki/Thick_client
18 http://en.wikipedia.org/wiki/Virtualization
19 http://gov.aol.com/2012/01/30/virtualization-growth-expected-to-propel-agency-savings-by-2015/
20 http://www.gartner.com/it/page.jsp?id=920814

this will also cause a corresponding decrease in PC sales[21] (see also, below). The exact rate of acceptance, however, is open to debate because there are still a number of issues (e.g. bandwidth) that may hinder widespread use[22].

End User Devices

The number and variety of end user devices will continue to increase. The traditional desktop PC will continue to decrease in popularity[23] [24], although it will be retained for a longer period in specific, niche applications[25] [26]. Laptops will also continue to evolve to become lighter and less power-hungry[27], while the explosive growth of Apple's iPad[28] and tablet devices such as Amazon's Kindle[29] have proved a compelling choice for those who only need access to basic online services such as mail and web-based applications.

We also suggest that the trend of increased smart phones capabilities based on operating systems such as iOS[30], Windows Phone[31] and Android[32] will continue. The rate of increase will, however, slow as the overlap with the capabilities and performance of tablets becomes more pronounced.

We also anticipate that the security threats posed by these devices will increase over the next few years before slowly reducing as more secure systems are developed. Reasons for this spike include:

- The number of new technologies currently being released with shorter development/deployment cycles.
- The fact that the consumer market has lower security acceptance criteria than other markets. We note in the section on below that the consumer market is driving technology adoption in the business market instead of vice versa.
- User privacy and security habits and training lag the requirements presented by current technology.

Mobile

Our discussion of above shows an increased emphasis on mobility and ubiquitous access. In turn, this is driven by the greater desire of users to be away from a traditional "office/desk" setting. Some of this is driven by a need to make better use of time in the field where effort and resources are actually expended. Other reasons might include better interaction with customers,

21 http://www.forbes.com/forbes/2009/1228/technology-virtualization-vmware-wyse.html
22 http://www.networkworld.com/community/tech-debate-desktop-virtualization
23 http://www.gartner.com/it/page.jsp?id=1769215
24 http://gizmodo.com/5301401/so-long-desktop-pc-you-suck
25 http://msmdesignzblog.com/2011/07/why-the-death-of-the-desktop-pc-is-inevitable/
26 http://www.itworld.com/it-managementstrategy/199339/desktop-computers-changing-not-dying
27 http://reviews.cnet.com/best-ultraportable-laptops/
28 http://www.apple.com/ipad/
29 http://www.amazon.com/gp/product/B0051QVESA/ref=sv_kstore_0
30 http://www.apple.com/ios/
31 http://en.wikipedia.org/wiki/Windows_Phone
32 http://www.android.com/

alternative working habits or personal preferences. We anticipate that these drivers will increase as the capabilities of end user devices increase.

IT Consumerization

In the past, IT innovations such as the PC gained acceptance in the business market before gaining acceptance in the consumer market. However, we are now seeing an increasing trend of technologies that are developed and marketed for the consumer market first, before being adopted by the business market. Although considerable effort had been spent in developing tablet devices for the business community, for example, it was not until the consumer-oriented iPad was launched that the tablet market gained traction as organizations were pushed by employees to obtain these devices.

Service-Oriented Architecture

Service-oriented Architecture (SOA)[33] is a methodology that has been gaining in popularity. It allows different services to be combined and communicate together using common, interoperable messaging standards such as JSON[34] or XML[35]. Such an architecture allows the addition of services that could not be anticipated at run time and the ability to reuse and repurpose services.

We anticipate that, even if formal SOA designs lose popularity, the underlying need will remain for systems to communicate in a loosely-coupled manner. In turn, this will drive "SOA-like" integration based on pragmatic, business needs; an opinion echoed by a 2009 Gartner update on SOA[36].

Application Sourcing

The success of iTunes[37] and the increasing presence of online appstores such as Google[38] and Amazon[39] have shown that defined "walled garden"[40] ecosystems form a viable alternative to traditional methods of software distribution. One particularly interesting example of this trend was the recent release of Apple's OSX Lion 10.7[41]. The only way in which it was initially possible to upgrade from previous versions of the operating system was to purchase directly from the Apple Appstore application.

We see this trend as continuing and diversifying as more developers either make their products available through established environments and organizations develop their own electronic storefronts to allow employees to self-serve and download what they need.

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33 http://en.wikipedia.org/wiki/Service-oriented_architecture
34 http://en.wikipedia.org/wiki/Json
35 http://en.wikipedia.org/wiki/Xml
36 http://www.gartner.com/it/page.jsp?id=927612
37 http://www.apple.com/itunes/
38 http://play.google.com/about/apps/
39 http://www.amazon.com/s/?ie=UTF8&keywords=amazon+appstore&tag=googhydr-20&index=mobile-apps&hvadid=11331131979&hvpos=1t1&hvexid=&hvnetw=g&hvrand=17095837697364584 90&hvpone=&hvptwo=&hvqmt=e&ref=pd_sl_7gjv5pnw2r_e
40 http://en.wikipedia.org/wiki/Walled_garden_(technology)
41 http://www.apple.com/macosx/mountain-lion/

Office Productivity Suites

We have already indicated how the Cloud is providing more opportunities for SaaS applications. The result has been that Google Docs has been able to establish itself as a low-cost alternative to traditional Office productivity suites such as MS Office[42]. Accompanied by a rise in popularity of open source alternatives such as Libre Office[43], it could be argued that the office productivity market space is in the most fractured state in recent memory.

Voice Over IP

Voice over IP (VOIP) has matured and can be considered a mature technology. As businesses replace their legacy systems, VOIP has emerged as a low-cost, scalable alternative. One report indicated that the VOIP market grew 40.1% between 2009 and 2010[44], and other reports indicate similar growth[45]. Mobile VOIP is expanding at an even faster rate[46] [47] as smart phones become more prevalent. We note, however, that because this market is driven by businesses replacing old systems, it is extremely sensitive to economic conditions which may cause lower growth[48].

42 http://office.microsoft.com/en-us/
43 http://www.libreoffice.org/download/
44 http://www.ihotdesk.com/article/19875027/VoIP-growth-is-set-to-continue
45 http://www.voipservice.com/blog/study-46-percent-increase-seen-voip-ims-market-2012
46 http://www.tmcnet.com/channels/hd-voice/articles/263873-mobile-voip-growth-tripling-hd-voice-becoming-more.htm
47 http://www.ihotdesk.com/article/801260803/VoIP-usage-set-to-triple
48 http://avadtechnologies.wordpress.com/2009/02/18/will-the-struggling-economy-slow-voip-growth/

Intended IT Vision

This section outlines an IT vision that will seek to address the needs and expectations described previously.

Assumptions

In order to maximize the chances of success, this strategy relies on the following assumptions:

- *Economic* – For the purposes of this discussion we will assume low economic growth. As a result, we further assume that funding will remain unchanged or only increase slightly for the next 3-5 years.
- Skills – We assume that there will be no significant changes in the size or quality of the labor pool available to ITSD. We also assume that economic issues continue to put pressure on the training budget.
- Organizational – We assume that the existing City organization[49] remains constant. We assume that the services required by Albuquerque and Bernalillo Water Authority (ABCWUA)[50] will decrease over time.

Business Architecture Domain – Vision

- Integrate the City of Albuquerque IT Strategic Plan with identified business process needs.
- Develop and implement measures to capture and quantify a high level total cost of ownership (TCO) for city-wide IT services.

Application Architecture Domain – Vision

- Enable Government by providing effective, efficient, necessary and secure applications to meet the needs of citizens, businesses and government.
- Provide delivery mechanisms that allow customers to serve themselves.
- Provide applications that deliver efficient and effective services.
- Provide or utilize a framework for application governance, planning and management.
- Provide secure, confidential, trusted and reliable applications.

End User Domain – Vision

- Promote transparency and openness and drive administrative efficiency and effectiveness by developing a procurement process that serves the needs of the business units, is fair, timely and impartial.
- Ensure competition is sought to the maximum degree feasible and that the City is the

49 http://www.cabq.gov/department-listing/documents/city-of-albuquerque-organization-chart/at_download/file
50 http://www.abcwua.org/

beneficiary of such competitive process.

- Protect the interests of the City and its citizens.
- Support business users in choosing devices that suit the business need.
- Invite, promote and sustain positive customer and supplier relationships.

Information Domain – Vision

- Treat information as a valuable asset. The City of Albuquerque will be the best steward of information.
- Ensure that public information is open and accessible to all users regardless of physical location.
- Non-public information is open and accessible to users provided that they have a right to access that information. Accessibility includes:
  - Section 508 accessibility
  - Education
  - Permissions
  - Availability
- Information is no longer siloed in proprietary systems.
- Information has purpose, reason and value.
- Information is searchable, adaptable, easy to share, taggable and updated automatically.
- Information is credible. It is timely consistent, complete and reliable both within a system and across different systems and agencies.
- Business Intelligence becomes the catalyst for making good management decisions.

Gap Analysis/Strategy – How will ITSD Meet these Challenges?

Application Architecture domain

Key Drivers

Driver	Result
Empowered Citizens	• Citizens are engaged and knowledgeable • Government as platform for services
Improved Communications	• Communications between citizens and government flow effectively in both directions.
Self Organization	• External: Soliciting opinions from citizens, allow citizen input in determining agenda • Internal: Growth of agile, rapid, short-term engagements performed by virtual teams
Collaboration	• Improving the way that teams work together
Civic Engagement	• Citizens are involved in the democratic process
Streamlined Interaction	• Increase the number of online transactions, aggregated transactions
Accountable Government	• Efficient processes with reduced decision cycle time • Raw data is freely downloadable as a service • Accountable to stakeholders • Agile • Learning • Analytical
Transformational	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision

Initiatives

Initiative	Description
Open Data	• Develop a platform to make City datasets freely available to the public. • Promote and encourage use of this data through show casing successful implementation and community outreach. • Develop forum to allow users of datasets to submit ideas for improvement and suggest different datasets that could be released.

Grow and transform Business Intelligence	• Increase awareness within the City of the importance and value of data. • Provide tools and services that complement increased awareness and foster collaboration and improved communication of information and ideas between the City and its stakeholders. • Develop opportunities to improve data analysis and decision-making by business units.
Grow and transform Web Team	• Develop and grow the City's internal web publishing ecosystem. • Ensure that the appropriate resourcing and hardware/software infrastructure is available to support demands. • Research cloud-based alternatives for hosting the City's website.
Increase the number of online and e-commerce transactions	• Implement and grow online bill payment services. Parking Citations will be the proof of concept. • Implement online memberships for Department of Senior Affairs • Advise business units on best strategies for e-commerce.
Collaboration and content management	• Migrate Sharepoint to Sharepoint 2010 • Research and implement alternatives to FileNet
Integration and Workflow	• Research integration methods to allow different systems to communicate and collaborate effectively
Knowledge Management	• Replace FileNet. As part of this effort migrate all documents that have not exceeded their retention date.

Network Domain

Key Drivers

Driver	Result
Integrate the CABQ IT Strategic Plan with identified business process needs	Strategic plan provides solutions to business unit needs
Develop and implement measures to capture cost of ownership	City is able to quantify value of IT portfolio

Enable Government by providing effective, efficient, necessary and secure applications to meet the needs of citizens, businesses and government.	• Citizens are engaged and knowledgeable • Government as platform for services
Provide delivery mechanisms that allow customers to serve themselves.	• Efficient processes with reduced decision cycle time
Provide applications that deliver efficient and effective services.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Provide or utilize a framework for application governance, planning and management.	• Efficient processes with reduced decision cycle time • Accountable to stakeholders • Agile • Learning • Analytical
Provide secure, confidential, trusted and reliable applications.	Government is accountable, credible and trustworthy
Promote transparency and openness and drive administrative efficiency and effectiveness by developing a procurement process that serves the needs of The business units, is fair, timely and impartial.	Government is accountable, credible and trustworthy • Provide tools and services that complement increased awareness and foster collaboration and improved communication of information and ideas between the City and its stakeholders.
Ensure competition is sought to the maximum degree feasible and that the City is the beneficiary of such competitive process.	Government is accountable to stakeholders
Protect the interests of the City and its citizens.	Government is accountable to stakeholders
Support business users in choosing devices that suit the business need.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Invite, promote and sustain positive customer and supplier relationships.	• Efficient processes with reduced decision cycle time • Government is accountable to stakeholders

Treat information as a valuable asset. The City of Albuquerque will be the best steward of information.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Ensure that public information is open and accessible to all users regardless of physical location.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Non-public information is open and accessible to users provided that they have a right to access that information.	• Communications between citizens and government flow effectively in both directions.
Information is no longer siloed in proprietary systems.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Information has purpose, reason and value.	• City is an effective steward of information
Information is searchable, adaptable, easy to share, taggable and updated automatically.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Business Intelligence becomes the catalyst for making good management decisions.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision

Initiatives

Initiative	Description
Actively maintain asset/inventory system	Continue to ensure that asset/inventory system is up to date and accurate
Replace legacy PBX system with centralized VOIP solution	Replacement ensures that the City is better able to meet business needs.
Continue broadband rollout plan.	Delivery of higher broadband speeds means that the City is better able to meet business needs
Install Fiber to every City facility	Delivery of higher broadband speeds means that the City is better able to meet business needs
Support and enhance remote VPN	City employees are able to communicate and collaborate in a secure manner

Platform Domain

Key Drivers

Driver	Result
Integrate the CABQ IT Strategic Plan with identified business process needs	Strategic plan provides solutions to business unit needs
Develop and implement measures to capture cost of ownership	City is able to quantify value of IT portfolio
Enable Government by providing effective, efficient, necessary and secure applications to meet the needs of citizens, businesses and government.	• Citizens are engaged and knowledgeable • Government as platform for services
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Promote transparency and openness and drive administrative efficiency and effectiveness by developing a procurement process that serves the needs of The business units, is fair, timely and impartial.	Government is accountable, credible and trustworthy • Provide tools and services that complement increased awareness and foster collaboration and improved communication of information and ideas between the City and its stakeholders.
Ensure competition is sought to the maximum degree feasible and that the City is the beneficiary of such competitive process.	Government is accountable to stakeholders
Protect the interests of the City and its citizens.	Government is accountable to stakeholders

Support business users in choosing devices that suit the business need.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Invite, promote and sustain positive customer and supplier relationships.	• Efficient processes with reduced decision cycle time • Government is accountable to stakeholders
Treat information as a valuable asset. The City of Albuquerque will be the best steward of information.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Ensure that public information is open and accessible to all users regardless of physical location.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Non-public information is open and accessible to users provided that they have a right to access that information.	• Communications between citizens and government flow effectively in both directions.
Information is no longer siloed in proprietary systems.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Information has purpose, reason and value.	City is an effective steward of information
Information is searchable, adaptable, easy to share, taggable and updated automatically.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision
Business Intelligence becomes the catalyst for making good management decisions.	• Transform the way City government provides a particular service or set of services to better achieve the other aspects of this vision

Initiatives

Initiative	Description
ITIL Asset management	Continue collecting data on infrastructure costs. Use VMware tools as basis for costing model

Virtualization and Cloud	Use cloud as an efficient delivery mechanism Consolidate servers where possible through virtualization.
Infrastructure maintenance	Upgrade Sharepoint Upgrade Email Migrate Oracle 9 to 11 Migrate SQL 2000 and 2003 databases to SQL Server 2012 where possible Migrate from Sun to Linux Design using de facto architectures and vendors
Continue to deploy ITIL services	Increase monitoring on sensitive data (using services such as What's up gold, OEM) Improve effectiveness of logging (e.g. through centralized logging)
Purchasing and Vendor Management	Ensure that current vendors are providing the City with competitive pricing Engage with businesses units and vendors. Purchase SQL licensing for VM. The costs of this effort will be shared by different business units. Continue vendor relationship management efforts. Increase the amount of training provided by vendors.
Backup and Recovery	Research and implement a single solution for backup. This solution will take account of different document lifecycles. Try to consolidate backup strategies to a single vendor/solution Refine and test DR plan. Create and Test readiness reviews Ensure sufficient redundancy and availability through de-duplication and geoclustering
Support Open Records Requests	Improve workflow and efficiency in providing responses to open records requests through use of tools such as cross-platform searching

Security Domain

Key Drivers

Driver	Result
Develop and implement measures to capture cost of ownership	Continue to actively maintain asset/inventory system
Enable Government by providing effective, efficient, necessary and secure applications to meet the needs of citizens, businesses and government.	Replace legacy PBX system
Support business users in choosing devices that suit the business need.	Higher broadband speeds Replace legacy PBX system Centralized VOIP solution
Ensure that public information is open and accessible to all users regardless of physical location.	Continue broadband rollout
Non-public information is open and accessible to users provided that they have a right to access that information.	Continue broadband rollout – Fiber to every facility Support and enhance remote VPN

12 Point Implementation Plan to transform City of Albuquerque Information Technology use and management.

Part 1 – IT governance and management.

1. Planning. Build an IT Strategic decision making framework by introducing an annual IT planning cycle, one that is aligned with City performance goals and budget planning. This will begin in the fall of each year such that Departmental IT plans (with enterprise requirements) can be developed and submitted to ITSD for incorporation into the Master IT Plan.

2. Perform Application Portfolio Rationalization. Consolidate and simplify the application portfolio. Collapse redundant and/or legacy applications into enterprise applications.

a. Retire Lotus Notes/Domino applications (CTS, HR Job Applications, and TRC), move those functions to Enterprise Applications (ERP, SharePoint).

b. Retire the Mainframe by moving GEAC/AR to ERP.

c. Promote a Shared Solutions strategy; implement applications that can be shared across City Departments (those with common business requirements, i.e., point-of-sale, case management, and asset management). Shared solutions can be leveraged by a single-instance, enterprise version, and should be the first course of action when ever possible. Promote a Service Oriented Architecture (SOA) as part of this initiative.

3. Adopt a "Cloud First" mentality. When considering new applications, the business case needs to address why an on-premise solution would be more desirable than cloud hosting. With a pay as you go business model, cloud computing provides the City access to advanced technologies and applications without the overhead, hassles, and cost of ownership (datacenter costs, maintenance, disaster recovery, etc.). Instead, rely upon lightweight, shared technologies, such as Software-as-a-Service (SaaS) and Infrastructure-as-a-Service (IaaS) sourced models. Evaluate e-mail and desktop applications as the first candidates for cloud services.

4. Disaster Recovery Program, continue to strengthen the Disaster Recovery Program by fully exercising failover continuity testing to the Pino yards fail-over site. Successful fail-over testing needs to be accomplished for all Tier 1 (high priority) applications and all other applications need to be able to be fully restored based upon the mean time to recover requirements as identified by the business owners.

5. Cyber Security Program, develop and build a robust cyber security program that takes into account all of the following;

a. Security posture assessment, complete remediation. Address the gaps and implement pro-active cyber security processes to address known threats and security

vulnerabilities

b. Layered Security Model maturation, ensure all of the components of cyber security are optimize and are integrated for optimal results, (Firewalls, Intrusion Detection/Prevention, Internet/Web Filtering, Spam Filtering, Virus/Malware protection, Patch Management)

6. Project management and operational process improvement. Build upon the ITIL successes currently in place by fully developing the remaining ITIL processes and ensuring they are inculcated into all IT Operations. Develop an IT Service Catalog and Configuration Management Database (CMDB). Mature project management by ensuring all IT projects are assigned project managers and being managed within the project portfolio management tool.

Part 2 – External Citizen and Business Engagement.

7. Transparency and Open Data. Continue to build upon ABQView, the city's transparency portal. Include performance dashboard and open data portals. Provide Open Data to citizens; provide those public data/datasets that have traditionally been stored on City servers behind the City firewall. Create an Open Data Portal where citizens and application developers can use the data for community apps that will make our City a better place to live, work, and play in.

8. Web-enable business transactions. Identify those business processes that are good candidates for online services, such as online bill pay, 311 online, online work-orders, team registrations/scheduling, park/facility reservations, online service desk, online noise/party/barricade permits, etc. Begin with parking citations as the pilot transaction.

Part 3 – Network and Infrastructure

9. Voice/data network communications. Reduce the recurring cost and dependence on leased lines, T1s and 1FBs.

a. Continue to build out the City Fiber network. Leverage the City's franchise agreements and continue to connect fiber to the city service buildings.

b. Use Gigabit Wireless, where/when fiber is not feasible (as an alternative to metro fiber cabling). Leverage wireless backhaul technology to connect city service buildings, (up to 5 miles).

c. Replace existing PBX switches with VOIP. Continue the roll-out of citywide VOIP to city facility sites that currently have 1) adequate bandwidth and 2) have a traditional PBX voice switch.

d. Improve upon tablet/Smartphone management (to include Bring Your Own Devices) by instituting mobile device management tools and processes.

10. Systems monitoring. Fully deploy and embed systems monitoring into an ITIL framework process of performance threshold triggers and alerts.

11. Managed Desktop. Determine the appropriate virtual desktop technology to move towards to ease the burden of managing 5000 end-point, desktops.

Determine if an enterprise fund can be used to move into a 5 year, enterprise refresh cycle for the City desktop computing inventory, i.e. replace 1000 PCs each year citywide.

12. Datacenter upgrades. Complete conditioned power and UPS upgrades. Provide for a datacenter cooling assessment to determine if upgrade/replacements are necessary. Plan for upgrade/replacement of Halon fire suppression system.