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IS STRATEGY 2015 THRU 2019

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INFORMATION SYSTEMS DEPARTMENT
IS STRATEGY 2015 THRU 2019

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EXECUTIVE OVERVIEW

This Information Systems (IS) strategic plan sets forth a road map for Provo City over the next five years and is based on the guiding principles of service, innovation, technology, and safety. As part of this plan we set a citywide IS vision to provide *Service First*, enable *Anytime / Anywhere / Any Device Access*, improve *Workforce Effectiveness* and deliver *Operational Excellence*. This vision is brought to reality through engagement on specific goals and objectives defined within this document and summarized as follows:

- TECHNOLOGY LEADERSHIP - Provo City has a strong desire to utilize current technology to reach its goals and objectives. Provo expects to offer improved resident services at a higher quality (effectiveness) and with fewer expenses (efficiency). To drive this commitment we set the objectives to: a.) Create a culture of process and service innovation, b.) Provide effective support for technology, and c.) Invest in technology when it provides positive returns for our residents.
- SERVICE EXCELLENCE - To create an environment of service excellence IS must maintain a correct balance of service and safety while addressing upcoming challenges common to both private and public sector organizations. To meet this challenge we set objectives to: a.) Hire and retain skilled IS professionals, b.) Create and maintain effective business relationship management, c.) Maintain a highly effective and engaged IS Governance Committee, d.) Provide technology education through lunch & learn style engagements, and e.) Perform ongoing IS service measurement and improvement.
- RESILIENT INFRASTRUCTURE - The City of Provo relies on information systems to perform business efficiently and effectively. To provide service reliability we set the following objectives: a.) Create and maintain a fully architected and reliable network, b.) Setup data centers that can operate city services in a cost effective and resilient manner, and c.) Maintain preparedness for disasters, both large and small, by testing and sustaining the disaster recovery plans and the regional offsite disaster recovery center.
- MOBILE COMPUTING - Mobile computing is both a personal and organizational trend that promises productivity improvements to those that embrace the technology. As such Provo sets the objective to: a.) Evaluate bring your own device (BYOD) options b.) Implement virtual application technology that provides secure computing to any device, at any time, and from any location, and c.) Expose all city services through easy to use integrated web applications giving residents unprecedented access to city resources and services.
- SERVICE CONSOLIDATION - Provo City has great opportunities to reduce costs and increase operational efficiency through service consolidation. To take advantage of these opportunities Provo City sets the following objectives to: a.) Consolidate servers to reduce operational complexity, b.) Utilize voice over IP (VOIP) technology to combine data and voice networks, c.) Create a printing service plan to reduce print spend, and d.) Centralize IS sub teams to remove duplicated effort while reducing decentralized staffing risks.

- APPLICATION STANDARDIZATION - Barriers to information sharing and our ability to achieve operational excellence can be mitigated, and even eliminated, through a strong commitment to application standardization. Provo recognizes the value of application standards and sets the objectives to: a.) Evaluate and implement a fully integrated municipal ERP system to replace costly disparate systems, b.) Utilize a buy vs. build approach to take advantage of rich technology stacks without the costs of custom development, and c.) Continue to standardize on MS Office with investment in the training required to be highly productive.
- COLLABORATION - True collaboration is required for the teams of today to accomplish complex tasks and goals. Provo City recognizes that having the right tools is core to a successful collaborative environment and as such Provo sets the objective to: a.) Investigate and implement unified communications technologies that provide a positive return on investment, b.) Invest in document sharing technology that improves the speed of teams in the creation, editing and publishing of work product, and c.) Evaluate and improve the City's collaboration rooms with technology that supports the team's ability to perform business.

This IS strategic plan is an organization-wide strategy. To make it a reality will take commitment and support from elected officials, senior staff, the public, IS staff and technology users throughout the City. The support will need to come in terms of priorities, dollars, policies and practices. Successful implementation may mean making compromises, and it will mean exercising patience, taking an organization-wide perspective, and maintaining a continued focus on the vision, goals and principles of the strategy.




GUIDING PRINCIPLES

The following guiding principles were utilized during the creation of the IS Strategic Plan, ultimately driving the creation of the strategic goals and objectives. These principles form the common themes and provide broad guidance for the IS planning process:

SERVICE

- Exceed the highest standards of customer service while making it easier for our customers, both external and internal, to access business services and data.
- Encourage information sharing and collaboration between and within departments, residents, and the City's constituents while providing expertise and technology leadership.
- Provide enriched service through dedicated and well trained staff.
- Residents and employees are best served through accessible and easy to use technology assets.

INNOVATION

- Value for our residents can be derived through innovative process approaches and technology investments.
- The ongoing challenge to do "more with less" can be solved, in part, through technology innovation.
- Promote a city culture of intellectual growth and innovation through improved access to information and collaborative resources.

TECHNOLOGY

- Operational efficiency can be improved with technology based automation and integration.
- Embrace emerging technology that provides cost effective benefits for Provo residents.
- Efficient management of existing city technology is important to the success of all city organizations.

SAFETY

- Providing the highest levels of operational excellence and security is key to the safety and good stewardship of the city's data and technology assets.
- Building a culture of preparedness and resilience is paramount to appropriate mitigation of risks associated with man-made or natural disasters.
- Strive to follow an environmentally responsible approach in providing information technologies.

IS STRATEGIC VISION

At the City of Provo we are committed to utilize technology to serve our residents in ways that have not been possible in the past. By being a leader in the use of technology, the city will gain a competitive advantage that provides our residents with increased services, improved access to information, a healthy business climate, and an overall more innovative, effective, and lower cost government.

SERVICE FIRST

Provide our internal and external customers with the highest commitment to customer service principles. Make it an enjoyable and educational experience to utilize IS service teams to address the technology and process needs of city departments.

ANYTIME, ANYWHERE, ANY DEVICE ACCESS

Deliver anytime / anywhere / any device access for our employees and our citizens to city information and services.

WORKFORCE EFFECTIVENESS

Develop an innovative IS environment that enables city employees to collaborate, share data, and perform their jobs more effectively. Improve our efficiency with ways to "do more with less" through improved tools and training.

OPERATIONAL EXCELLENCE

Implement and maintain comprehensive IS governance and management practices to provide safe, efficient and effective IS services for Provo City. Build and maintain a world class IS organization that recruits, develops and retains the best technology management workers in government.

IS STRATEGIC INITIATIVES

TECHNOLOGY LEADERSHIP

Provo City recognizes that to meet and exceed our resident's future service expectations we must invest in innovative technology approaches now. The city believes that taking a leadership role allows our highly dedicated workforce to tread new ground that will result in city operations never before possible... a future that other cities will aspire to follow.

IT innovation can produce lasting results for the business: new markets, reduced costs, and improved alignment with the business strategy.

Info-Tech Research

To achieve this future, the City of Provo must invest in furthering its culture of innovation. This includes opening the organization's eyes to new services the city can offer residents while re-evaluating existing technologies and processes in novel ways that allow existing services to be provided at a higher quality and/or with lower expenses. This future begins with a commitment to the following set objectives:

- PROMOTE TECHNOLOGY INNOVATION - Creating a culture of innovation is critical to future technology leadership success. As such, the city commits to invest in IS in ways that allow teams to research, experiment, and invent new and creative uses of technology. This requires a change in mentality from IS fire-fighting and IS housekeeping to an intentional dedication of IS time and resources focused on inventing the city's future. Important factors for bringing about this IS culture of innovation includes: gaining full city buy-in for innovation based approaches, team members obtaining a close awareness of the city's strategic vision, increasing the team's diversity of experience, opening up forums for idea exchanges, and creating a program that recognizes innovators.

- TECHNOLOGY PILOT PROGRAM - Because it is increasingly common to have the "next great thing" in technology discovered by non-IS staff, it is important to approach these potential technologies with an accepting and open mindset, without opening the doors to unsafe practices or creating an environment that reduces the ability of employees to be good stewards of city resources. With this in mind, the city commits to create a technology pilot program with the proper support from IS and the Governance Committee. Technologies that provide a positive return on investment for our residents can be moved from pilot to production with the proper support to maintain, backup, and secure the asset.

- TECHNOLOGY INVESTMENT - Common issues, such as information inquiry and bill pay, require the attention of stretched city resources. Today's technology has the capability of providing immediate service response for common needs while also freeing up resources to work with both internal and external customers on more difficult to handle issues. As such, the city commits to engage on technology initiatives as long as the investment is cost effective, results in improved service for employees and residents, and enhances the overall user experience.

SERVICE EXCELLENCE

In today's business environments IS organizations are challenged with the need to provide service and security to a complicated and constantly evolving technology-hungry environment. Generational changes bring employees to the workforce that know how to consume and innovate with information technology but have a knowledge weakness on how to operationalize that technology. By the same token, technology professionals get caught up in the day to day operations of IS and, in some cases, lose track of the innovation that comes from taking measured risks.

Service based IS organizations of the future consist of a team that is highly skilled and engaged with a "guiding hand" approach that can keep organizations on the right track toward innovation without the downfalls related to short sighted technology adoption. This requires a balance of customer care, safe computing practices, and the resources required to deliver. To engage in this service excellence future the city sets the following strategic objectives.

> **Excellence** is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.
>
> - Aristotle

- TECH TALENT - The key ingredient for an innovative and service excellence based IS organization is having the right people, with the right skill set and the right service attitude. This makes retention and on-boarding high performing staff a top priority for Provo. To this end, Provo believes employees are best retained and hired through a commitment to our employees, their job satisfaction and their ability to grow both technically and in their career. As such, Provo City commits to taking great care when recruiting staff to ensure each new hire has the required attitude, aptitude and skill sets to be successful. Once on board, staff members will be developed through a dedicated focus on technical and organizational training, while being coached and held accountable, to provide the highest standards of service excellence. Measurements of success will be based on service metrics with a recognition plan in place that rewards employees who exceed the organization's goals for service and innovation.

- BUSINESS RELATIONSHIP MANAGEMENT - A true understanding of each city department and its business is required to reach the highest degree of service excellence. As such Provo City sets a direction to have an individual either from IS or the serviced department set apart to act as an IS Business Relationship Manager. This individual is expected to engage in IS and department meetings, projects and initiatives with the mission to bring about a high degree of open communication, engagement and collaboration.

- GOVERNANCE COMMITTEE - In order for an internal IS team to be fully utilized for the technical skills they bring to the table, Provo City sets a direction to maintain a governance committee. This governance team provides citywide strategic vision, oversight of IS policies & procedures, and direction of the resources to engage on the right projects, at the right time, and at the right cost. At the City of Provo, each department has a voice at the table of IS Governance allowing the IS staff to focus on servicing the needs of the city without getting caught up in the politics and resource allocation issues that can draw away from daily technology service engagement.

- SERVICE EDUCATION - IS service excellence includes education of what services and technologies are available. With information overload a constant challenge, we recognize that it is difficult to get educated on the technology of the day as well as how the technology can be applied to daily operations. As such, Provo believes it is important to provide information in an easy to consume format using periodic lunch & learns, user groups, tips & tricks, and other quick methods to teach city team members about individual technology and service topics.

- ONGOING SERVICE MEASUREMENT & IMPROVEMENT - Understanding the quality of service provided by an internal IS organization is a moving target that must be continually measured through service surveys, key performance indicators, and engagement with the management of the departments served. Once service is measured, ongoing improvement objectives can be defined, engaged and verified for success or failure. Understanding the importance of this engagement, Provo City commits to maintain an ongoing service measurement and improvement program for the IS organization.

Adoption of technology, without operationalizing that technology, can bring some great short term benefits. However, the maturity of the technology adoption brings long term challenges and increased risk surrounding maintenance, data backup and security. Imagine the next great system that gets installed on a personal computer and used for over a year of data collection only to have a critical system failure with major data loss; OR a web service that is used to greatly increase resident awareness has its data stolen from the site six months after launch. IS must address these issues without landing in the trap of "just say no" routines.

RESILIENT INFRASTRUCTURE

With the continued industry move to cloud computing, a growing reliance on network based resources, and the need to maintain higher levels of disaster preparedness, organizations must maintain a network that is architected and designed to handle today's and tomorrow's data environments. Creating a resilient, secure IS infrastructure is obtainable with a commitment to a strategy that continues to think about and engage in the long-term needs while appropriately investing in foundation services. The following objectives are set to address these needs.

> Good luck happens when preparedness meets opportunity.
>
> - Bret Harte

- FULLY ARCHITECTED NETWORK - Continual evaluation and design of the data network is a priority of the city that allows us to handle today's data needs as well as mitigate common threats to data network errors and outages. The city commits to maintain a relevant data network with a distinct separation of core, distribution, and access layers with both resilience and security in mind.

- RESILIENT DATA CENTER - Data centers are the core of any IS operation and whereas the network is the highway that allows systems to communicate with each other the data center is the brain that houses and provides the information. The city commits to maintaining highly resilient data centers that are designed to handle city operations in a cost effective and secure manner. The city recognizes to reach this goal the city must invest in the removal of duplicated server environments in favor of the creation of mirrored data centers that are capable of running all city operations. Individual services can then be implemented with a 50 / 50 split with service redundancy to reduce the impact of a single data center outage. This investment in time and resources will provide improved IS operations from both a cost and security perspective while also adding IS resiliency now required by the city.

- DISASTER PREPAREDNESS - Disaster is not a question of if but when. The City of Provo is committed to providing world class disaster preparedness which requires maintenance of an IS disaster recovery plan, constant evaluation and upkeep, and a dedication to service resiliency at all levels of IS operations. Due to the nature of city operations we also recognize that we must remain prepared for potential regional disasters. The city sets the direction to maintain a backup / recovery plan that includes backup of the city's data centers to the Provo Academy Library and a regional offsite facility.

MOBILE COMPUTING

Broad adoption of personal mobile devices is a reality of our era. With the mobile trend we note that the historical concepts of creating a secure IS environment have been "blown out the door" with enforcement of device usage almost impossible. Organizations must choose to spend time and resources preventing the usage of these devices or embrace them and the potential for productivity increases they offer.

At Provo City we believe the highest rated cities of the future will have embraced the usage of these devices to access applications and data from any device, at any time, and from any location. As such, Provo recognizes that technologies that provide secure access from any device, either personal or city owned, allows us to address the new paradigm of mobile computing and we are committed to the following objectives to address the coming future.

> 89% of employed adults have mobile devices such as smartphones or tablets connecting to corporate networks.
>
> - Forbes 2012

- BRING YOUR OWN DEVICE (BYOD) - At Provo we recognize that "can" and "should" must be clearly reviewed prior to the adoption of any technology or procedure. As such we set the direction to evaluate BYOD (bring your own device) options. Provo City intends to support the BYOD concepts through effective technology and policy management. We also recognize that engagement on this front must be carefully thought out and proven to provide positive results for our residents.

- VIRTUAL APPLICATIONS - With the number of devices and applications on the market continually growing, the city recognizes that we must be able to manage and deliver new innovative solutions as well as the tried and true core applications required for specific government operations. These applications have key differences that make it difficult to provide clear support channels as older applications rely on older operating systems and supporting software while newer applications require cutting edge operating systems and browsers. Furthermore, the nature of applications developed for specific operating systems limits those applications from reaching common devices (e.g. IPad, Android etc.) in use by residents and city workers. As such, the City of Provo sets the direction to invest in virtual application technology that can expose virtually any application to virtually any device in a secure and reliable fashion.

- WEB APPLICATIONS - Exposing city services through fully integrated user friendly web interfaces allows residents to stay more connected to the community while enabling engagement of city resources and services at any time, from any location, and from any device. As such the City of Provo sets the direction to invest in new web technologies that provide unprecedented access while also making these services accessible to those that do not normally have access to technology (e.g. via kiosks).

SERVICE CONSOLIDATION

It is common practice for many organizations, both public and private, to add servers and services as the needs arise. Great IS organizations must review and manage service additions with a goal to provide cost effective operations including using consolidation when services are duplicated without adding the necessary service resiliency. The City of Provo has great opportunities to consolidate duplicated services that will result in long term cost reductions as well as the creation of an easier to support and maintain IS environment. As such Provo sets a clear strategy to remove duplicated services in favor of resilient ones.

Duplicated efforts quickly become an organizations largest drain on resources. Resources that "could" have been used to create a competitive advantage…

- SERVER CONSOLIDATION - Continual evaluation and consolidation of the city's server resources is a priority for Provo. It is the direction of the city to push a centralized, albeit resilient, set of data centers in the creation of an internal Cloud that all services can operate from. Duplicated services that do not provide resiliency are to be removed.

- VOICE CONSOLIDATION - VOIP (voice over IP), also known as IP Telephony, has become the standard for voice communications in both the public and private sectors because the technology adds rich services in a more cost effective manner than traditional phone services. Rather than organizations having to invest and maintain a separate voice and data network, they can consolidate them to allow each dollar spent to address improved service for both. In addition to improved usage of limited assets this integrated approach exposes features sets such as unified messaging, presence, and collaborative tools that improve voice and data communication experiences. As such, Provo City sets the direction to consolidate voice and networking infrastructures to take advantage of these newer unified communication technologies.

- PRINTING - Security requirements and local feature needs has historically set a high demand for local printers. With the advances in document centers that have integrated security, unmatched feature sets and a greatly reduced operational cost the city sets the direction to evaluate and move towards an improved printing model that can reduce the overall print spend for the city.

- IS CENTRALIZATION - The city currently has multiple IS organizations setup to service the specific needs of individual departments and none of these teams are resourced to address an adequate succession plan. The city has great opportunities to reduce costs, staffing risks and duplicated effort while still meeting, and even exceeding, the service needs of specific departments. As such the city's direction is to move toward, as appropriate, a combined IS team that services the needs of all city departments with a common set of procedures, technology and resources. With the combination of a well-run IS Governance Committee and a commitment to service excellence we firmly believe our residents will be best served by consolidating the department based IS teams.

APPLICATION STANDARDIZATION

The city currently utilizes a high mix of desktop productivity suites, client server applications, web services, databases, and other electronic systems designed to improve city operations. The city recognizes that historical use of disparate systems has created barriers to the city's ability to provide cost effective resident services. There are great opportunities for the city to evaluate and standardize to reduce operational cost as well as provide our residents with improved service when interacting with the city either on the phone, in person, or on the web. As such Provo City sets a strategy to standardize applications while investing in integrated systems that can improve service while reducing complexity and cost for the city.

> If we continue to develop our technology without wisdom or prudence, our servant may prove to be our executioner.
>
> - Omar Bradley

- ERP - The city currently utilizes a high mix of disparate systems to perform line of business services for Provo residents, business partners, and other constituents. Many of these are custom developed with high risks related to staff loss, feature "bugs" and other inherent risks related to internal custom development. With the large numbers of new systems on the market developed specifically for municipal operations, Provo City believes it may be possible to replace these disparate systems with a fully integrated one that not only improves services but reduces operational costs. As such, the city sets the direction to evaluate enterprise resource planning (ERP) systems with a goal to replace disparate systems with a fully integrated, cost effective, and service extending system.

- BUY VS. BUILD - The city recognizes that not all systems utilized will be supported by a consolidated ERP solution. For these specialized needs the city sets a direction to migrate to a buy vs. build approach to improve access to rich technology stacks while reducing reliance on increasingly more difficult and costly to maintain specialized IS skill sets. Additionally, the city will pursue systems with open standards and hosted or cloud-based systems where practical, with a bias toward proven technologies.

- OFFICE SUITE STANDARDS - The city recognizes that the current workforce is well skilled in multiple office productivity suites with some areas highly proficient in older, no longer supported, suites. In an effort to improve document compatibility and sharing between departments, residents, vendors and other constituents the City of Provo has set the clear direction to migrate all office productivity suites to MS Office. This move includes a commitment to invest in software upgrades and the training required to utilize the chosen productivity suite effectively.

COLLABORATION

In today's highly connected environment, we recognize that work deliverables that only involve one individual are a thing of the past and that collaborative relationships are the future. More and more, government organizations rely on team efforts to get day to day deliverables completed with the need to share electronic documents, rich media, and data sets common for any project, large or small. It is the commitment of Provo City to provide tools that support and enhance these collaborative environments.

> Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved.
>
> - Mattie Stepanek

- UNIFIED COMMUNICATIONS - Unified communications is a term that highlights many aspects of communications in today's world. Most commonly it is a term that specifies a combination of our voice and data networks allowing team members to, among other things, manage voice mails from their email inbox, dial desk phones from their desktop contacts list, see availability of team members, and overall have improved team communications that enhances productivity in an efficient and cost effective manner. Provo sets the direction to more fully expose the technology of existing phone and network systems while engaging on unified communication projects that provide a positive return for Provo residents.

- DOCUMENT SHARE - Speed of electronic communications has greatly improved operating environments. All too often it has become practice to take electronic documents and send them around for comment and updates. Today's technology allows these same documents to be shared simultaneously allowing rich collaboration that greatly reduces the time to generate work material. Combined with Unified Communication technology we create an environment that allows teams to work closer together in a highly productive and efficient way. As such, the city commits to invest in cost effective document share technologies.

- COLLABORATION ROOMS - Despite the pervasiveness of technology in our day to day workloads, we recognize that technology does not replace relationship building or highly productive face to face meetings. We also recognize that these same meetings commonly require remote participation, presentation of rich media, and easy to use room collaboration tools. Audio conferencing, video conferencing, electronic whiteboards, projectors are all examples of tools found in today's collaboration rooms. The city sets the direction to engage in projects that improve the capabilities of existing collaborative rooms as well as the creation of additional collaborative rooms as budgets allow.

STRATEGY APPROVAL

The defined IS strategy meets or exceeds the needs specified by the city and is approved and supported by the undersigned.

IS Division Director — 12/16/14 / Date

Governance Team Member — 12/16/14 / Date

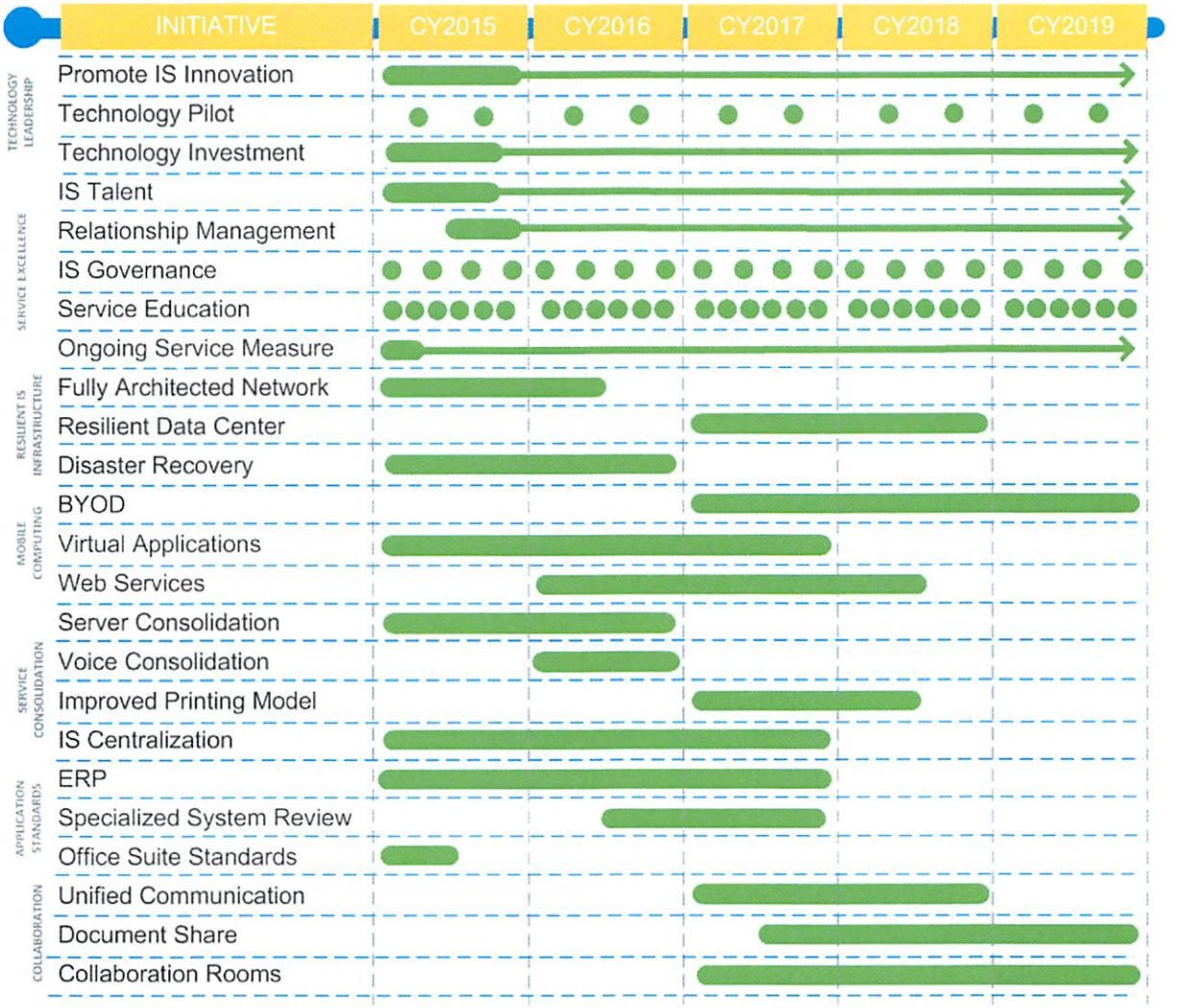
Governance Team Member — 12/22/14 / Date

Governance Team Member — 12/23/14 / Date

Governance Team Member — 1/8/15 / Date

Governance Team Member — 1/14/15 / Date

APPENDIX A - IS STRATEGIC INITIATIVE TIMELINE



APPENDIX B – LUNCH & LEARN TOPICS

The following lunch and learn topics are intended to provide examples and ideas that may provide value for city workers. The list is not intended to reflect a comprehensive list of items that may be covered.

- Outlook Scheduling / Calendaring
- MS Office Document Sharing
- Skype & Other Collaborative Tools
- Virtual Applications
- Security Awareness
- Document Retention & Archival
- Mobile Computing
- Introduction to SQL & Reporting
- Remote Connectivity