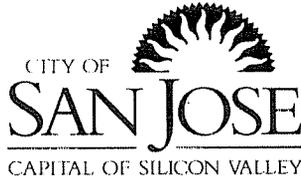


PS, F AND SS COMMITTEE: March 20, 2008
ITEM:



Memorandum

TO: Public Safety, Finance and
Strategic Support Committee

FROM: Randall Murphy
Interim CIO

SUBJECT: Report on Infrastructure – Priority
Projects

DATE: March 6, 2008

Approved

Christine A. Shippey

Date

3-10-08

Executive Overview

The City of San José's Information Technology Department (ITD) is responsible for managing the data and voice infrastructure throughout the organization. This infrastructure serves as the technical backbone, supporting such Citywide applications as HR/Payroll, email, FMS, Call Center(s), and Utility Billing Applications just to name a few. A wide variety of departmental applications also use the voice and data infrastructure to ensure that lines of business with the City have the ability to meet primary business objectives.

The technical infrastructure must support the demands of users who rely upon it to perform their daily work. For example, employees send and receive nearly one million email messages daily while transacting City business. This volume of traffic and the availability of email represents only a single communications medium that customers take advantage of to do business with the City of San José. Electronic mail, along with other forms of data, is only as reliable as the underlying infrastructure that is in place. ITD is currently focusing on three keys areas of improvement for the City's technical infrastructure:

- Voice and Data Consistency – The Voice and Data Communications Strategy is a priority that focuses on consistency to the City's computing environment. At the heart of this strategy is the development of one network. This single network will consist of an upgrade to the way ITD manages user accounts and email (Active Directory) and deployment of Voice over Internet Protocol (VoIP) throughout the organization. With the completion of this rollout, employees will have a base level of productivity to any computer within the City, regardless of department affiliation or physical location.
- Green IT Operations – The Green Strategy for IT operations leverages the normal replacement schedules of technology assets with the most recent technological advancements to produce a reduction in the overall impact to energy consumption and CO² emissions. In addition, the Information Technology Department has encouraged

partnerships with corporations who demonstrate environmental stewardship through the RFP process.

- Information Security – The Information Security Audit offers an independent review of security and data integrity practices within the City. Information is one of the City's most important assets with associated responsibilities. The Information Security Audit will help ensure that the City's policies, practices and procedures related to information security are aligned with best practices.

These three major initiatives will provide the greatest impact on City operations from a data and voice infrastructure perspective. ITD continues to strive to provide customers with reliable and productive communication abilities that minimizes impact on the environment, and maximizes integrity of the data contained within.

Priority Projects

Voice and Data Communications

The City's voice and data communications strategy provides the foundation for services that employees, residents and business have come to rely upon. At the heart of these services is the wired and wireless infrastructure maintained by ITD. This infrastructure allows for the interoperability of voice and data services between users in support of service delivery. Several key projects are underway that facilitate expanding or enhancing this vital communication medium.

Development of Single Citywide Network –The Information Technology Department is currently in the process of developing a single City network, allowing users to access Citywide services regardless of location or department. At the heart of this network will be a single authentication model (Active Directory) and converged network or Voice over Internet Protocol (VoIP). These core components will provide users with a consistent, predictable and productive computing environment that also enhances the organization's information security. By consolidating departmental differences in authentication, the exchange of data between departments will be streamlined. At present, 65% of the organization has been moved to Active Directory and 32% of the network has been migrated to VoIP. The upgrade to Active Directory is required due to the lack of support from the manufacturer for older server operating systems. With such a lack of support, critical updates like those for the change to Daylight Savings Time or security vulnerabilities, are not available leaving critical systems exposed or not performing optimally. It is anticipated that the Active Directory migration will be complete by June 30, 2008. The expansion of VoIP is heavily dependant on the completion of a Wide Area Network (WAN) Assessment and availability of funding.

Wide Area Network (WAN) Assessment – The Information Technology Department has begun a WAN assessment to ensure that the deployment of a single Citywide Network can be supported. The assessment will run in parallel to the Active Directory upgrade as they are not

dependant upon each other, but are both necessary prior to the future expansion of the converged network. As part of the WAN assessment, communications links to outlying City facilities such as Fire Stations, Community Centers and remote City facilities will be reviewed for appropriate bandwidth requirements for a single network. The assessment will focus on the number of users, computers, applications and services required and identify the appropriate size of connectivity required for each site. Included in this assessment is the opportunity to leverage City-owned fiber networks through the Department of Transportation. ITD and DOT are working cooperatively to identify mutually beneficial opportunities for integration. The WAN assessment is anticipated to be complete by April 2008.

Police Communications Campus Wiring – The need for a crucial network and infrastructure upgrade for the Police Communications Campus was identified by ITD during preparation for expansion of the converged network. For this reason, \$2 million of the Technology Reserve, initially targeted for other under-resourced areas, was recommended for diversion to this essential project and was approved as part of the 2007-2008 Operating Budget. Public Works will be coming forward with a Council Memo and recommendation of contract award in March or April, 2008.

Police Substation Fiber Connectivity – The new Police Substation is scheduled to open in Fall of 2009. In preparation for that opening, ITD and the Police Department are working toward provision of high speed connectivity between the two Police buildings. This communications link will eventually facilitate secondary and emergency operations of Public Safety Services in the event that either site becomes unavailable. Funding for the fiber project is estimated at \$550,000 and was proposed as part of the 2008-2009 budget process.

VoIP Deployment at the Police Campus - In addition to the wiring being performed at the Police campus, a new voice and data network is also in the planning stages. With this new network, VoIP will be expanded to the campus and a new network backbone will be implemented to replace equipment at or near end-of-life that support such critical operations as the new electronic citation program, mobile broadband and others. ITD is currently working with Finance/Purchasing on the procurement of the equipment. The anticipated completion date of this project is June 2009.

Storage Area Network (SAN) – The Information Technology Department and Finance/Purchasing released an RFP for a Storage Area Network (SAN). A SAN is a pool of storage (hard drives) that is centrally managed, allocated and backed up. The City current buys storage in small increments with each server purchase. By leveraging the storage pool concept, the City will be able to reduce the amount of administrative time spent providing operations and maintenance of its data storage environment. In addition, the SAN project will focus on consolidation of redundant server functionality which will contribute to the reduction of power consumption within the data center. At present, the RFP is underway with a scheduled proposal close date of March 10, 2008.

Citywide Wireless – The City of San José continues to actively participate in the Joint Venture Wireless Silicon Valley Project. At present, the project has seen a boost in support with the

addition of COVAD Communications as a partner to the implementation of the City of San Carlos pilot. ITD continues to monitor the development of new business models in the marketplace for municipal wireless and their impact on the economic vitality of the region.

Green Technology Strategy for IT Operations

In recent years, the technology industry has embraced the concept of environmental responsibility in the development of hardware and software. As a result, an entire cottage industry has developed to lower energy consumption and CO² emissions with regards to technology. With nearly all major manufacturers accepting their roles toward environmental stewardship, a unique opportunity has arisen. In response to the Mayor's Green Vision, ITD is actively pursuing opportunities to leverage such advancements in continuing efforts to "green" the City's technology operations. The following will provide an update on the Green Technology Strategy for IT Operations:

Desktop Power Management - With approximately 6000 desktop PCs, the City has an excellent opportunity to reduce power consumption by placing PCs under power management. PCs under power management turn off the monitor and CPU after a designated period of inactivity from the end-user. ITD is currently testing a variety of relatively inexpensive software solutions and anticipates deploying a solution by April 2008.

Release an RFP for more efficient desktops and servers – The PC industry is very competitive and manufacturers make continuous attempts to distinguish themselves from one another. By releasing an RFP for more energy efficient desktops, the City can evaluate the total cost of ownership (TCO) over their useful life by evaluating criteria such as power consumption and associated cost over the useful life of the asset. Currently the Information Technology Department is identifying requirements for the RFPs.

Identify rebates/incentives for efficiency – ITD is working closely with the Environmental Services Department (ESD), PG&E and others to identify opportunities to leverage rebates and incentives for "going green." At present, two applications are in progress. The first application will provide a \$10 per PC rebate for power management. The second application will provide an incentive for consolidation/virtualization which will be completed as a part of the SAN implementation. Exact value of the incentive will be calculated by PG& upon completion of the SAN.

Consolidate physical to virtual servers – ITD is already using VMware (virtualization software) to consolidate under-utilized servers. This software allows the City to consolidate applications and services that do not take full advantage of their respective hardware. At present, the City has many applications that would benefit from consolidation including test and development environments that are critical but may have very low demand for hardware requirements. The industry itself recognizes that many applications and services cannot, or do not, require the full resources of a server and therefore may be consolidated lowering energy consumption within a datacenter. By expanding our virtualization strategy, the City will lower

power consumption and future server purchases. This practice will expand as the SAN project is implemented. The PG&E application will evaluate the effectiveness of the consolidation as part of the incentive program.

Integrate Green Points in the Technology RFP Process - The recent SAN RFP was released with a 5 point award for manufacturers who demonstrate their commitment to environmental leadership. This award is a cooperative effort between ITD, ESD and Finance/Purchasing. The SAN project represents the first technology RFP to award extra points based on the manufacturer's commitment to the environment.

Optimize Data Centers – ITD and General Services are working closely with PG&E to seek opportunities to leverage best practices with regards to the City's data center(s). Currently, PG&E is reviewing the components of the HVAC and electrical systems to identify areas for potential improvement. These services are being provided at no cost to the City.

Information Security Audit

The City, along with others, faces many challenges with regards to information security. ITD is in the contract finalization process for a third party audit of City's information security practices. The audit itself will address five key areas:

- Develop a comprehensive list of existing exposures and recommend remediation strategies
- Assess business continuity and disaster recovery requirements for critical applications and services versus operational activities
- Review and identify weak, inconsistent or lacking policies, procedures and/or practices
- Benchmark San Jose's security posture with those of private industry, best practices and other public sector agencies
- Review and recommend a security governance model that identifies areas of common concern between departments and those that are unique to each department.

An Information Memo will be provided to Council when the contract is fully executed. Due to the sensitive nature of the outcome of the audit, most other future reporting (including the audit outcome) will occur at closed session.

CONCLUSION

In addition to on-going projects, the Information Technology Department has recently completed several projects that enhance communications between several City facilities. Most recently, ITD completed the implementation of a VoIP solution at the Animal Shelter. The system consisted of 80 phones, voicemail and one Call Center serving three distinct functions (licensing, dispatch and administration). Final cutover of operations is scheduled for the end of March 2008, at which time the Animal Shelter will join the VoIP dialing plan.

Finally, ITD completed the migration of approximately 500 phones to the VoIP infrastructure at the Central Service Yard (CSY). With this migration, all users at CSY now have joined the VoIP dialing plan and the CSY computers have high speed access to resources such as Geographic Information System data located within City Hall.

Should you have any questions regarding the projects discussed in this memo, please contact Vijay Sammeta, Acting Deputy Director of Technical Infrastructure, at x53566.



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