



**Information Technology  
Technology Improvement Update  
April 1, 2010**

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## State Bar of California Technology Assessment

### *Statutory Requirements*

**Business and Professions Code section 6140.35** establishes a \$10 per year special assessment to be used for the costs of upgrading the State Bar's information technology system, including purchasing and maintenance costs and computer hardware and software.

**Business and Professions Code section 6140.36** requires that the State Bar submit a report to the Assembly and the Senate Committees on Judiciary on or before April 1 from 2009 - 2011, on the use of the funds authorized pursuant to Section **6140.35**.

**Business and Professions Code § 6140.38** is another required report to the Senate and the Assembly Committees on Judiciary due on April 1 from 2010, and annually thereafter, on the impact of the changes made to Section 6008.6 by Senate Bill 55 of the 2009-10 Regular Session. In addition to a description of the impact of those changes, the report includes:

- 1) The projects that previously would have been required to comply with Article 4 (commencing with Section 10335) Division 2, Part 2, Chapter 2 of the Public Contract Code, but are no longer subject to that requirement because the contract amount is between fifty thousand dollars (\$50,000) and one hundred thousand (\$100,000); and
- 2) Whether the changes have improved the efficiency of the contracting process. The report required by this section may be included with the report described in Section 6140.36.

### *Background*

The ten dollar (\$10) increase per active member, coming in the form of a special three-year assessment for specific technology-related expenditures, has generated an average of \$1.5 million per year. These funds are being used to modernize the State Bar's obsolete computer systems and networking infrastructure, improve our ability to move information and data within and between our facilities and to the Internet, thereby ensuring continued access and availability of services for the public, State Bar members, and Bar employees.

A proposed Information Technology Strategic Plan, developed for the State Bar by LBL Technology Consultants, had at its core a plan to outsource the entire support infrastructure for its systems to contractors. This proposed IT Strategic Plan was considered by the State Bar's Board of Governors but never adopted especially in light of subsequent legislation (B & P Code § 6140.37: "The State Bar shall have a preference for using in-house employees for information technology projects, whenever possible."). Additionally, the departure of the State Bar's Chief Information Officer, a major proponent of the outsourcing policy, necessitated a review of alternative means to address internal service requirements.

During the fourth quarter of 2009, following the October veto of the State Bar's 2010 Fee Bill, all assets were frozen and all IT projects were suspended. Funding was restored in late January 2010, allowing IT to resurrect previously identified projects.

## **State Bar of California Technology Fund Project Update Status**

### **1. The following is a summary of the infrastructure projects undertaken in 2009.**

#### **A. PC Refresh (Associated expenditure: \$173,911.92)**

**Description:** Completed the upgrade of older desktop PCs, modernized desktop operating systems (OS), established a regular refresh cycle, standardized all desktop configurations, and instituted 3 year on-site maintenance plans.

#### **Implementation Progress:**

PC's Refreshed in 2009

121 Staff PCs  
    2 Document Imaging PCs  
    16 Shared, Visitor, Special Use, and Law Clerks  
139 Total

Employees Trained

145 Employees trained on Microsoft Office 2007 and enhanced Outlook

Starting in 2008, the State Bar PCs were replaced with a standardized operating environment that included current security applications and comprehensive maintenance supported by Lenovo, the PC vendor. To conserve resources, monitors were not replaced, but will be replaced on an individual basis if they fail.

The "PC Refresh" has allowed the Bar to reduce direct support costs for PCs, which are also more energy efficient; reduced energy consumption supports the Bar's 2007 Sustainability Initiatives. The State Bar's Energy Star project puts PCs on "standby mode" (Low-energy condition) when idle for 30 minutes, and monitors on "sleep mode" when idle for 15 minutes, without affecting users' work. The State Bar also continues to dispose of obsolete equipment in an environmentally friendly manner.

**Status:** Completed

#### **B. Desktop Software Refresh (Associated expenditure: \$ 155,179.24)**

**Description:** Refresh and Standardize desktop operating software

#### **Implementation Progress:**

Completed - The replacement PCs were deployed with current software, which included Microsoft Office 2007 system, Adobe Acrobat and McAfee Virus Detection Software. Other software components such as SNAG-IT, Omni Page Pro, Microsoft Project, and Microsoft Visio were upgraded on an as needed basis.

## 2. The following is a summary of ongoing and future infrastructure investments.

### A. Server Refresh, Phase I - Dec. 08 – July 09

**Description:** Blade server<sup>1</sup> and virtualization<sup>2</sup> technology was used to replace end-of-life equipment, consolidate the physical number of servers, and reduce energy and real estate costs at the Data Center. Combining blade servers and virtualization will simplify deployment of new applications and reduce long-term lifecycle equipment replacement costs.

#### **Project Benefits:**

- Savings from power, cooling, data center footprint, and carbon emission reduction (Green Initiative)
- Reduces future capital expenditures of physical servers
- Improved service achieved by reducing the complexity of the server environment through simplified systems management while improving delivery time for new and updated applications. Additional benefits: reduced procurement, installation, and configuration times (i.e. rapid deployment), improved disaster recovery and reduced risk/cost due to lost productivity.

#### **Cost of not doing:**

The cost of supporting and replacing physical servers would continue to grow to keep pace with greater demands for applications.

#### **Implementation Progress (Completed):**

- Purchase of IBM BladeCenter System
- Purchase and setup of virtualization technology using VMWare<sup>3</sup>
- Purchase and setup of Storage Area Network (SAN) storage<sup>4</sup>
- Migration of physical servers to virtual servers and blade servers (20 servers)

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<sup>1</sup> A blade server is a stripped down server computer with a modular design optimized to minimize the use of physical space and energy. Whereas a standard rack-mount server can function with (at least) a power cord and network cable, blade servers have many components removed to save space, minimize power consumption and other considerations, while still having all the functional components to be considered a computer.

<sup>2</sup> Virtualization is software technology which uses a physical resource such as a server and divides it up into virtual resources called virtual machines (VM's). Virtualization allows users to consolidate physical resources, simplify deployment and administration, and reduce power and cooling requirements. While virtualization technology is most popular in the server world, virtualization technology is also being used in data storage such as Storage Area Networks, and inside of operating systems such as Windows Server 2008 with Hyper-V.

<sup>3</sup> VMware, Inc. (NYSE: VMW) is a provider of virtualization software.

<sup>4</sup> A storage area network (SAN) is an architecture to attach remote computer storage devices (such as disk arrays, tape libraries, and optical jukeboxes) to servers in such a way that the devices appear as locally attached to the operating system.

## **B. Server Refresh, Phase II - Sept. 09**

**Description:** Purchase additional blade systems and virtualization software to implement the following:

- Purchase additional blade servers and host system
- Purchase additional storage for SAN system
- Migrate file and print servers to virtual environment
- Migrate applications to virtual environment
- Create redundant blade/virtualization environment
- Replacement of data backup system

### **Implementation Progress:**

Information Technology is developing a plan to implement Phase II and estimates that it will complete this phase by the end of the 3<sup>rd</sup> quarter 2010.

## **C. Server Refresh, Phase III 2010 – 2012**

**Description:** Enable fail-over capabilities, in the event of a San Francisco data center failure, by replicating the San Francisco environment in Los Angeles to the extent required to support critical services for State Bar departments and members.

**Implementation Progress:** Phase III is dependent upon the completion of Phase II. IT will develop a project plan for this phase before completion of Phase II.

## **D. Printer Refresh – Sept. 09**

**Description:** This project introduced a more cost efficient printing environment to the organization using satellite copiers / printers instead of desktop printers. This project upgrades and modernizes printing capabilities and improves service and support.

### **Project Benefits:**

The replacement printers feature faster and better quality output, document security, and reduced power consumption.

### **Cost of not doing:**

Maintenance and support costs for aging equipment would increase on a per unit basis.

### **Implementation Progress:**

This project was begun during the 3<sup>rd</sup> quarter of 2009, but was put on hold as noted on page 1 of this report. Information Technology will resume the project and estimates completion by August 2010.

## E. Network Infrastructure Refresh

### Phase I – 2008-2009 - Completed

**Description:** In 2008, Information Technology engaged AT&T to conduct an assessment of the network design and infrastructure. The assessment concluded that the State Bar's current network architecture needed to be brought up to industry standards and to accommodate future deployments of applications and implementation of converge services. In network convergence, operators make use of a single IP (Internet protocol) network to provide multiple services such as voice, data, mobile and television. (e.g. Voice-over-Internet Protocol ("VoIP") is a process of sending voice telephone signals over the Internet or other data network).

In 2009, Information Technology engaged CH2M-Hill to conduct an IT Security Assessment and recommend security best practices and regulatory requirements. The assessment identified vulnerabilities within the network infrastructure that needed to be mitigated to protect the confidentiality, integrity and availability of data. Essentially, the assessment validated the AT & T assessment.

#### Benefits:

- Provided a clear understanding of current information security risks
- Identified the potential impact of vulnerabilities on the network infrastructure
- Raised internal awareness of information security risks
- Enabled a more informed decision-making process and identified gaps in organizational security controls and policies.
- Provided a plan to improve overall security posture based on business needs and helped meet regulatory compliance requirements

### Phase II – To commence in 2010

#### Description:

In Phase II all "end-of-life" network equipment at the LA and SF locations will be replaced. Phase II is expected to take approximately 6 months.

#### Benefits:

- Increased reliability of network equipment
- Reduced / Eliminated service interruptions attributable to component failure
- Accommodate / Support greater service demand from internal and external customers

**Implementation Progress:** IT is developing a project plan for replacement of its networking equipment and will issue an Invitation for Bid (IFB) proposal.

## **Phase III – To commence in 2011**

### **Description:**

In Phase III, IT will solicit vendor proposals for implementing a redesign of the network infrastructure as recommended in the AT&T Network Assessment document.

## **F. Telecommunications Upgrade**

**Description:** Because the State Bar's voice communications infrastructure is more than fifteen years old, vendor support and hardware replacements are limited and expensive and integration with newer technologies is impossible. The voicemail systems are at maximum capacity, which limits our call center's ability to increase incoming call capacity, resulting in busy signals. As noted above (see network infrastructure), the telecommunications industry is phasing out traditional technologies and moving to converged voice and data communication through Voice-over-Internet Protocol (VoIP) that can be used to improve customer service, staff productivity, and to deploy new applications.

This project will provide a sustainable voice communications system for the delivery of Bar services to the members and the public.

### **Benefits:**

Replacing the Public Branch Exchange (PBX)<sup>5</sup> and voicemail systems would allow for use of the following technologies:

- Integration with a Customer Relationship Management (CRM) solution <sup>6</sup> - Our Member Services Center is interested in purchasing a CRM solution but doing so before PBX replacement risks a fragmented implementation; a disunited system usually stays that way. A key requirement for the PBX replacement Request for Proposal should be the vendor's ability to provide multiple CRM integration solutions. Implementing a CRM without integrating the PBX could limit the pool of potential voice solution providers.
- Computer Telephony Integration (CTI) - Comprehensive call center technology that allows all customer contact channels (voice, email, web, fax, etc.) to be integrated with computer systems (e.g., the member's profile pops up on computer screen when the agent answers the call or the ability to add a "Call Me" feature to online member profiles, allowing members to click on a link and be immediately connected by phone)

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<sup>5</sup> A private branch exchange (PBX) is a telephone exchange that serves a particular business or office, as opposed to one that a common carrier or telephone company operates for many businesses or for the general public.

<sup>6</sup> Customer relationship management is a broadly recognized, widely-implemented strategy for managing and nurturing a company's interactions with clients and sales prospects. It involves using technology to organize, automate, and synchronize business processes—principally sales activities, but also those for marketing, customer service, and technical support.

- Unified Communications (UC) - The integration of real-time communication services such as instant messaging (chat), presence information, Telephony, video conferencing, call control and speech recognition with non real-time communication services such as unified messaging (integrated voicemail, e-mail, SMS and fax). UC is a set of products that provide a consistent unified user interface across multiple devices and media types.
  1. Unified Messaging - focuses on allowing users to access voice, e-mail, fax and other mixed media from a single mailbox independent of the access device.
  2. Presence - user availability tracking. Presence refers to the quality of a person being online or not, available or not, and the ability for others to see this.
  3. Mobility - allows users to forward calls to voice mail, an assistant, or the user's cell phone. Newer systems can be configured to send voicemails to a number of locations so that they can be accessed on the road.
- Call center enhancements: call wait-time announcements, call recording and skills based routing; ability to support increased traffic to call centers; incoming caller-ID;
- Voice communications to remote sites (4-digit dialing for Sacramento GA and LAP offices). Unified voicemail for all sites.
- Audio Conferencing - will allow for in-house audio conferencing rather than through a provider.
- Reduces risk and cost of downtime resulting from failure of existing systems or components.

### **Considerations for delaying the PBX Replacement:**

**Cost** – The costs involved with replacing the two PBX's and voicemail systems include: platform replacement; handset replacement; equipment redundancy; administrator training; end-user training; licensing; possible wiring upgrades in LA; and reliance on an "Infrastructure Refresh."

**Time** – It is anticipated that the replacement project will take 12 to 18 months to complete.

### **VoIP Considerations**

VoIP Technology is relatively new technology and standards are still developing; VoIP security issues; VoIP reliability issues; Viruses; Possible increase in staff numbers to support; UC is still very expensive; PBX's continue to offer secure and reliable service; our between office voice traffic is already routed onto a T1 for a flat monthly rate; We would continue to use PSTN trunks for outbound calls so there would be no real cost savings.

**Implementation Progress:** Because there currently is no existing internal staff expertise, IT is instituting a staff development process to address this knowledge gap. IT will draft an RFP for consulting services to assist with a formal RFP for PBX replacement.

### **G. State Teale Web Transition - \$24,000**

**Description:** The State Bar's website is currently hosted at the State of California's Department of Technology Services (DTS). In 2008, DTS gave notice to the Bar that its Teamsite / Broadvision / Oracle technology, used to run the Bar's public website portal, would be retired. IT selected DotNetNuke (DNN) as its new web content management tool to migrate the Bar's website.

**Implementation Progress:** Information Technology is working with DTS to launch the Bar's new website in April 2010.

### **3. Business and Professions Code § 6140.38**

Business and Professions Code § 6140.38 requires the State Bar to report to the Senate and Assembly Judiciary Committees on the impact of increasing the State Bar's informal bid contracting authority limits from \$50,000 to \$100,000 for contracts for IT goods and/or services

In 2009, the State Bar did not undertake any projects that would previously would have been required to comply with Article 4 (commencing with Section 10335) Division 2, Part 2, Chapter 2 of the Public Contract Code, and which were no longer subject to that requirement because the contract amount was between \$50,000 and \$100,000. Consequently, the State Bar cannot comment on whether the changes have improved the efficiency of the contracting process.

## IT Infrastructure Roadmap 2010 - 2012

The technology road-map is comprised of three phases:

1. Preliminary activities;
  2. Development of the technology roadmap; and
  3. Follow-up activities
1. ***Preliminary activities include:***
    - Satisfying essential conditions
    - Defining the scope and boundaries for the technology roadmap
    - Acquiring internal “sponsorship” and funding
  2. ***Development of the technology roadmap includes:***
    - Identifying the “product” to be the focus of the roadmap
    - Identifying the critical system requirements and target
    - Request For Proposal and Procurement process
  3. ***Follow-up activities include:***
    - Developing an implementation plan
    - Reviewing and update.

### Server Refresh Project

**Phase II - Replacement of systems that are approaching the end of their lifecycle.** Review systems to determine underutilization, increase usage of virtualization<sup>7</sup> and consolidation of servers. This will allow IT to build more flexible and efficient environments with fewer systems, a smaller footprint, and lower operating costs.

Timeline:

- May 2010 Board approval to commit funds
- June 2010 Procure systems
- July - September 2010 Deploy systems

### Network Refresh Project

The strategy is to proceed with the recommendation as described in the Network Assessment that was conducted by AT&T.

Timeline:

- May 2010 Board approval to commit funds
- June 2010 Post RFP for services to implement the recommendations from the assessment
- July - December 2010 Upgrade network infrastructure LA/SF

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<sup>7</sup> Virtualization allows a computer to operate as if it had more memory than it actually does, but with some loss of performance.

## **Printer Refresh Project**

### Timeline

- May 2010 Board approval to commit funds
- May 2010 Procure equipment
- June 2010 Deploy equipment

## **Telecommunications Upgrade Project**

A Prerequisite to this project is the completion of the Network Refresh Project

### Timeline

- 2010 Board approval to commit funds
- 2010 Draft Request for Proposal (RFP) to seek assistance with developing project scope and plan for migrating to VoIP
- 2010 Post RFP, review proposals, award RFP
- 2011 Start project plan to upgrade PBX and draft PBX Replacement RFP
- 2011 Post RFP, review vendor proposals, award RFP PBX Replacement
- 2011- 2012 Upgrade PBX system (phone, voicemail, ACD, etc.)

## **Special Purpose Enterprise Applications Project**

This project funds existing enterprise applications (Oracle, Cognos, Hummingbird, etc.) to enable additional components for increased efficiencies.

	<b>Actual</b>	<b>Actual</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	
<b>Project Description</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Personal Computer Upgrade	696,500	-	125,000	25,000	-	846,500
Desk Top Software Upgrade	179,521	155,179	37,761			372,461
Server Upgrade	113,843	30,194	159,963	150,000	146,000	600,000
Printer Upgrade	389	12,474	192,637			205,500
Network Infrastructure Upgrade	142,673	92,850	421,492	421,492	421,493	1,500,000
Telecommunications Upgrade	-	-	100,000	900,000	100,000	1,100,000
State Web Host Transition	-	-	75,000	125,000		200,000
Special Purpose Enterprise Applications	-	-	100,000	75,000	45,027	220,027
<b>Total</b>	<b>\$1,132,926</b>	<b>\$290,697</b>	<b>\$1,211,853</b>	<b>\$ 1,696,492</b>	<b>\$712,520</b>	<b>\$5,044,488</b>